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List of Abbreviations

ACE	American Council on Education
APIE	Analyze, Plan, Implement and Evaluate Risk-Based Response Process
BP	British Petroleum
CFR	Code of Federal Regulations
CPI	Chemical Process Industries
CREDIT	College Credit Recommendation Service
CSO	Confined Space Operations
CSO/CSR TtT	CSO/CSR Train-the-Trainer
CSR	Confined Space Rescue
DOE	Department of Energy
DWT	Department-Wide Training
EQAR	External Quality Assurance Report
ERT:Ops	Emergency Response to Terrorism: Operations
ERT:Ops-C	Emergency Response to Terrorism: Operations – Customized (8-hour refresher)
FGS	Fire Ground Survival
FRO	First Responder Operations
HAZWOPER	Hazardous Waste Operations and Emergency Response
IAFF	International Association of Fire Fighters
IDC	Instructor Development Conference
IDL	Illicit Drug Labs
IQAR	Internal Quality Assurance Report
IT	Information Technology
LMS	Learning Management Systems
LXR	Logic Xtension Resources
MOS	Mentor Observer Sessions
NFPA	National Fire Protection Association
NIEHS	National Institute of Environmental Health Sciences
NIOSH	National Institute for Occupational Safety and Health
NLC	National Labor College
NLE	National Level Exercise
NMSZ	New Madrid Seismic Zone
OSHA	Occupational Safety and Health Administration
PEC	Petroleum Education Council
PEP	Partnership Education Program
PFT	Peer Fitness Trainer
Pro Board	National Board on Fire Service Professional Qualifications
QAP	Quality Assurance Program
RTI	Recruit Training Initiative
SCORM	Sharable Content Object Reference Model
SME	Subject Matter Expert
SOG	Standard Operating Guidelines
SOP	Standard Operating Procedures
STS	Supportive Teaching Session
TAC	Training Advisory Committee
TEEX	Texas Engineering Extension Service
TtT	Train-the-Trainer
USAR	Urban Search and Rescue
WMD	Weapons of Mass Destruction

Abstract

The International Association of Fire Fighters (IAFF) represents more than 300,000 full-time professional fire fighters and emergency medical personnel who protect 85 percent of the nation's population, and who serve as the first line of defense during any hazardous materials incident.

According to the National Fire Protection Association (NFPA), fire departments in the United States responded to 402,000 emergency incidents involving hazardous materials in 2010, the most recent year for which data are available. As the number of hazardous materials incidents has increased, the complexity and dangerous nature of responding to such incidents has multiplied. Despite the clear need to ensure that fire fighters and other emergency responders who may respond to incidents involving hazardous materials are adequately trained, in many communities responder training falls far short of what is necessary to ensure a safe and efficient response. In their Third Needs Assessment of the U.S. Fire Service, the NFPA estimated that 65 percent of fire departments responsible for HazMat response have not formally trained all of their personnel. Furthermore, only 35 percent of fire departments involved in HazMat response reported that all of their personnel have received formal training for this duty. It was also noted that approximately 36 percent of the departments in this category provide little to no formal training in HazMat response.

Operations level is the minimum level of training needed by first responders. It is specifically designed for the initial emergency response which occurs within minutes of the incident being reported. These emergency responders stabilize the situation and prepare the emergency scene for the HazMat specialists who will undertake direct mitigation. The mission of responders who are trained at the operations level is to protect nearby persons, property and the environment from the effects of the release. They are trained to contain the release from a safe distance, keep it from spreading, and prevent exposures. Clearly, this is the minimum level at which fire fighters should be trained.

In its aforementioned Third Needs Assessment, NFPA reports that only 20 percent of fire departments have all personnel certified to the operations level. While it is clear that training is needed for new recruits and personnel who have yet to undergo training, it is also worth noting that hazardous materials response training is not a one-time event. It is essential that all first responders undergo refresher training to ensure continued proficiency.

The Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29 Code of Federal Regulation (CFR) 1910.120 requires emergency responders to receive annual refresher training "of sufficient content and duration to maintain their competencies." In addition to providing responders the opportunity to brush up on knowledge and skills that may not be used regularly, refresher training is vital to

familiarize responders with new technology which may be used or encountered during a response.

The federally-funded training programs currently offered by the IAFF provide an excellent model of a delivery system for training first responders. Using a cadre of instructors who are both certified fire service instructors and certified HazMat responders, the IAFF offers, free of charge, real-world training in hazardous materials response that few institutions can match. Furthermore, because the IAFF brings its training directly to the students in their own communities, the IAFF is able to tailor its presentations to address the unique concerns and challenges facing local responders.

Highlights

Training Numbers

By offering established and customized courses, the IAFF exceeded its projected goals for training in each of the years represented in this Competitive Agreement (FY 2008 to 2012). The following chart details the goal (projected) number of classes and the actual number of classes conducted during the five-year period of performance.

Fiscal Year	Goal	Actual	Goal Exceeded by:
2008	137	274	100%
2009	137	145	6%
2010	97	194	100%
2011	97	149	53%
2012	97	165	70%
	565	**927**	

Additional Accomplishments During the Five-Year Grant Period

The IAFF accomplished several programs and milestones, in addition to the stated objectives of the Competitive Agreement, during the 2008 - 2012 grant period, including the following:

Supportive Teaching Sessions

In 2009, the IAFF HazMat/WMD Training Department implemented the Supportive Teaching Session (STS) program to ensure competency of local instructors who have completed an IAFF train-the-trainer (TtT) class. During an STS, local instructors (or new IAFF instructors) are assigned an experienced IAFF instructor, who acts as a mentor to the local instructor as they

team teach. The IAFF instructor evaluates the didactic and practical skills of the instructor, and provides structured feedback, using the IAFF instructor structured feedback form. The STS program is supported through DOT funding, but used under the NIOSH grant as a tool for IAFF instructors to act as mentors to local instructors. The following locations currently use the STS program: Mahwah, New Jersey; Davie, Florida (Broward County); New York City, New York and Tucson, Arizona.

Skilled Specialized Emergency Disaster Training

In 2010, New Orleans experienced one of the worst oil spills in United States history. The IAFF was awarded supplemental funding from the National Institute of Environmental Health Sciences (NIEHS) for the Gulf Oil Spill project, and worked in conjunction with several stakeholders (e.g., British Petroleum (BP), Texas Engineering Extension Service, U.S. Fish and Wildlife). The IAFF provided two master instructors to assist in training workers involved in the cleanup efforts of the spill. Cleanup workers were the most heavily exposed of all population groups in the Gulf Coast region. The two IAFF instructors attended a TtT held by the BP training manager. Upon completion of the TtT, the IAFF instructors worked with safety officers, Coast Guard representatives and displaced workers at a number of staging areas to provide site-specific, just-in-time, vessels of opportunity training.

In 2011, the IAFF was asked to participate in the National Level Exercise (NLE). The IAFF was involved in the planning phase. Working group members contributed to the development of both national and private sector-specific exercise goals, objectives and scenarios. The goal of the exercises was to identify gaps and opportunities for improvement in testing preparedness and resiliency at the national, regional, state and local levels. NLE simulated the catastrophic nature of a major earthquake in the central United States region of the New Madrid Seismic Zone (NMSZ). Additionally, the NLE focused on regional catastrophic response and recovery activities between federal, state, regional, tribal, local and private sector participants.

In March 2011, in response to the tragic earthquake that hit Japan, the IAFF spoke with numerous consultants from NIEHS, and assisted in the development of various training tools used in the response. Additionally, members of the IAFF and FEMA's Urban Search and Rescue (USAR) teams were deployed to assist in their rescue efforts.

Online Mini-Drills

During the period of 2008-2010, the IAFF developed and released six mini-drills as an additional training resource. Although the length of the drills varied, the involvement of the students' time was 1 ½ to 2 hours. The following mini-drills were made available for download on the IAFF web site:

- ***Mini-Drill #001 - Vapor Cloud Present***
- ***Mini-Drill #002 - Injured Person on Loading Dock***

- ***Mini-Drill #003 – Dumpster Fire in a Residential Area***
- ***Mini-Drill #004 – Students Mix Cleaning Agents***
- ***Mini-Drill #005 – Incident Overturned Tanker***
- ***Mini-Drill #006 – Response to a HazMat Incident: Structural Fire Residential***

The drills were developed to help ensure readiness to respond to emergencies involving hazardous materials and weapons of mass destruction. The purpose of the mini-drills was to provide a framework for company level training/exercises that could be led by a facilitator in an informal setting (such as around the kitchen table in the fire station) The following tools were included in each mini-drill:

- Facilitator guide with student objectives
- Photograph(s) or diagram(s) from an actual incident
- Incident information for each stage of the response process
- Resource documents (e.g., Material Safety Data Sheets (MSDSs) for the materials involved in the product release)

The IAFF recently pulled the drills from the web site until the department could update them to be more substantive, interactive and current.

Technology Updates

The IAFF continues to look for ways to process information effectively and reduce inefficiencies. During the five years of this competitive agreement; the department revised the training registration forms in order to streamline data collection and classroom paperwork.

In 2010 the department began exploring a variety of learning management systems (LMSs) in order to deliver online training opportunities to the first responder community. Additionally, the IAFF redesigned its Education Department web site to provide its members with efficient access to HazMat/WMD training information. The department continues to work on improving training information process efficiencies, and applying advanced technologies to the training system.

Three new radiation training modules under development still require modification to ensure they are SCORM (Sharable Content Object Reference Model)-compliant. This project is on hold pending final revision of the radiology course and available funding under the IAFF's NIEHS-Department of Energy (DOE) award. The online module, *Introduction to WMD*, also continues to be under revision. Based on instructor feedback from the last Instructor Development Conference (IDC), the department has modified the online modules in PowerPoint.

During the 2011 IDC, as part of a breakout group, the instructors also met and identified various research data that should be included in the resource library. This information will be incorporated into the IAFF LMS and become part of the design and development of the resource library.

The IAFF continues implementing test generating software system (LXR), which will create tests for trainees in order to meet Pro Board accreditation. This new test-generating software system will conduct random stratification of questions, generate the tests and be the depository for all test banks. The IAFF has purchased new Scantron scanners and is working with Scantron to develop new pre/post test forms and registration/survey forms that will be compatible with the new LXR software.

The IAFF completed work on revision of a new Level III evaluation online survey, which has been incorporated into a survey monkey tool. Additionally, the HazMat/WMD training events calendar continues to be updated every four months.

Marketing Strategy

In June 2, 2010, a story ran on the IAFF web site titled "FDNY Fire Fighters Help Foil Times Square Terror Attack." The article describes how the Fire Department of New York (FDNY) fire fighters responded to a reported routine car fire and "expected the unexpected", something emphasized in IAFF training. Several clues led to their decision to delay turning a hose on the car, and put in motion steps for further investigation of the scene, which later proved crucial. Additional clues uncovered inside the vehicle helped the FBI swiftly track down and arrest the driver before he was able to leave the country. The IAFF General President stated, "Since 9/11, the IAFF has made hazardous materials and anti-terror training an essential component of fire fighter education. These fire fighters put their training to work and helped foil this potentially deadly bomb attempt." Members of FDNY who responded to the incident agreed that IAFF training they have received over the years, from the basic level to post-9/11 terror attack response training, provided them the skills needed to help prevent the attempted terrorist attack on Times Square. The article describes the *Emergency Response to Terrorism: Operations* course that was provided to the students. See 'FDNY Operations at Times Square Car Bomb Scare' in Appendix C.

Specific Aims/ Objectives

During the past five years of this Competitive Agreement the specific aims/objectives have remained consistent:

- **Objective 1:** Conduct a minimum of 137* operations-level training events for the purpose of ensuring a safe and effective response to hazardous materials/weapons of mass destruction incidents by emergency response personnel.
- **Objective 2:** Maintain a pool of 80-100 qualified first responder master instructors who represent the diversity of the fire department and other emergency responders.
- **Objective 3:** Conduct a continuing education conference to provide training for new instructors, updates for current instructors, and detailed education and exercise in recent program delivery developments.
- **Objective 4:** Ensure that the IAFF First Responder Operations (FRO) program continues to meet or exceed applicable professional standards and incorporate lessons learned and best practices.
- **Objective 5:** Continue local customized training program delivery to meet the needs of first responders including fire and rescue departments, state fire training agencies, and offices of emergency management.
- **Objective 6:** Incorporate a comprehensive health and safety program for first responders using online resources to continue the learning process after formal training.
- **Objective 7:** Prioritize training sites based on risk assessment, which takes into account communities exposed to hazardous materials manufacturing, use, storage, transportation, disposal or natural or manmade disasters.
- **Objective 8:** Continue to employ marketing and outreach efforts to meet the needs of first responders in underserved populations.
- **Objective 9:** Maintain high program quality and efficiency through the implementation of an updated, fully integrated Quality Assurance effort.
- **Objective 10:** Using a range of program evaluation methods and analytical techniques identify, describe and disseminate information regarding the positive impacts, both short and long-term, of HazMat first responder training.

*** The minimum number of operations level training events for 2011-2012 was reduced to 97 classes.**

The following pages focus on the IAFF's objectives and achievements during the last five years, and include a detailed plan for future activities.

Objective 1

Conduct a minimum of 137* operations-level training events for the purpose of ensuring a safe and effective response to hazardous materials/weapons of mass destruction incidents by emergency response personnel.

The primary focus of all IAFF HazMat training under the NIOSH Competitive Agreement is at the first responder operations level. First responders are the first individuals or groups who arrive at the scene of an emergency. They should be trained to meet all competencies at the operations level per CFR 1910.120 and NFPA® 472. First responders play a vital role at every hazardous materials incident; they generally assume command, perform an initial assessment, notify the appropriate response organization and transfer command, if necessary, based on their level of training. As a result, their safety and health is at higher risk than any other group of responders.

The following disciplines are considered first responders at federal, state, tribal and local levels:

- Fire fighters and industrial fire brigade members from career, volunteer and combination departments
- Emergency medical service personnel
- Law enforcement personnel
- Specialized emergency response teams (e.g., hazardous materials, search and rescue and explosive/ordnance disposal)
- Emergency management at the federal, state and local levels
- Skilled support personnel (e.g., public works, private industry and health departments)

Although training is developed primarily for first responders, training may be provided to personnel who are not first responders. Non-response personnel trained by the IAFF include those individuals who generally interact with first responders at incident scenes (e.g., first receivers and healthcare facilities, commercial truck drivers, railroad personnel and personnel working in confined spaces). In these cases, IAFF master instructors provide additional instruction which allows those participants to actively participate in the course.

*** The minimum number of operations level training events for 2011-2012 was reduced to 97 classes.**

The following are the IAFF's operations level and specialty courses funded under NIOSH:

- Hazardous Materials Training for First Responders Operations
- Emergency Response to Terrorism: Operations
- Hazardous Materials Training for Confined Space Operations
- Emergency Response to Illicit Drug Labs
- Infectious Diseases
- Training for Hazardous Materials Response: Radiation
- Chemical Process Industries

The IAFF exceeded its projected goal every year during the 2008 - 2012 Competitive Agreement. See Appendix A – FY 2008-2012 IAFF Training Report.

Fiscal Year	Classes Conducted
2008	**274**
2009	**145**
2010	**194**
2011	**149**
2012	**165**
Total	**927**

The following is a breakdown of trainees by course/curriculum during the period of 2008-2012:

Course Title	Total Trainees	Length of Course (Hrs)
HazMat Training for First Responder Operations	**7,156**	**24**
Emergency Response to Terrorism: Operations	**2,251**	**16**
Emergency Response to Illicit Drug Labs	**2,110**	**8**
HazMat Training for Confined Space Operations	**1,671**	**24**
Chemical Process Industries	**1,056**	**16**
Infectious Diseases	**309**	**8**

The following is a breakdown of trainees by gender, ethnicity and profession during 2008-2012:

Gender	
Male	13,577
Female	976
Ethnicity	
African American	987
Asian/Pacific Islander	300
Caucasian	10,157
Hispanic	2,125
Native American	194
No response	790
Profession	
Fire Service	10,791
Industrial Fire Brigade	124
Law Enforcement	451
Private EMS	159
Private Industry/Consultant	152
Public Safety	151
No response	2,725

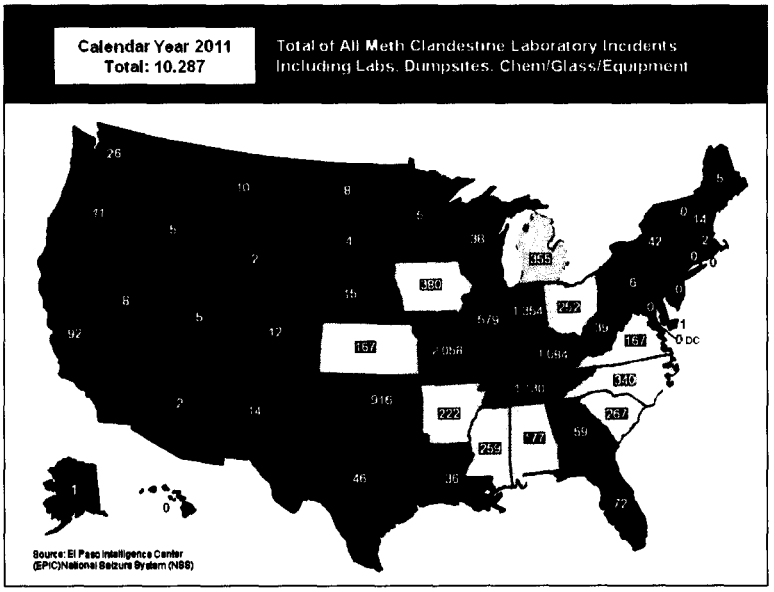
Since the development of the Recruit Training Initiative (RTI), the IAFF has been able to positively influence personal scene safety strategies and formulate proper response actions before first responders have the opportunity to develop unsafe behaviors. To date, the RTI comprises approximately 45 percent of the total number of events conducted under the current Competitive Agreement, with repeat business from 17 training academies.

RTI Training 2008-2012

Fiscal Year	Classes	Students Trained
2008	169	4,060
2009	59	1,486
2010	52	1,144
2011	40	905
2012	45	1,091
Total	**365**	**8,686**

In conjunction with the RTI, the IAFF continues to fulfill training requests from both small and large fire departments throughout the United States. These are referred to as department-wide training (DWT) projects. DWT allows members of the department to train together within a practical amount of time.

Due to an increase in methamphetamine lab seizures during the last five years, the IAFF has received an increase in requests for *Illicit Drug Labs* training. During the period of 2010-2012, the IAFF HazMat/WMD Training Department delivered *Illicit Drug Labs* training to 447 students in 27 locations in Missouri, a high-risk state for meth labs. The IAFF will continue to market its outreach in high risk areas.



Objective 2

Maintain a pool of 80-100 qualified first responder master instructors who represent the diversity of the fire department and other emergency responders.

The current cadre of 85 instructors is sufficient to deliver the requested training programs, as well as ensure each instructor is afforded an opportunity to teach a minimum of four times per year.

The IAFF continues efforts to promote diversity in its instructional team. The IAFF targeted recruitment efforts on local affiliates with known diverse membership. During this reporting period, the IAFF General President appointed 11 new instructors. As a result of a targeted program to recruit qualified women and minority applicants, 50 percent of these new instructors are from traditionally underrepresented groups.

In an effort to increase diversity among the instructor cadre, the IAFF has:

- Fortified relationships with minority organizations that represent first responders or other emergency response personnel.
- Formed alliances with other IAFF departments to help identify and recruit minority instructors within the organization.
- Utilized the existing student database to identify past minority students who completed IAFF training courses, particularly TtT programs, and provide individual follow-up to prospective instructors who have become local instructors.
- Relied on the web site as a recruitment tool.
- Effectively provided support services for diverse instructors.

To ensure that the IAFF master instructor cadre and IAFF training events continue to meet high standards, the IAFF developed and has continued to implement its Mentor Observer Program. This program was created to:

- Observe IAFF master instructors as they deliver training, and identify areas for improvement
- Guarantee continuity of program delivery
- Act as direct resources for technical questions that may arise during training events

See Objective 10 for additional information regarding the IAFF's Mentor Observer Program.

Objective 3

Conduct a continuing education conference to provide training for new instructors, updates for current instructors, and detailed education and exercise in recent program delivery developments.

Each year, the IAFF conducts its Instructor Development Conference (IDC). The IDC is an annual working meeting to provide program policy and curriculum updates to IAFF master instructors. Each master instructor has demonstrated subject matter expertise and extensive teaching background. The intent of the conference is not to instruct them how to teach, but to engage them in the collective process of improving existing delivery methods and implementing new delivery methods in order to enhance the overall program.

The IDC provides instructors with an opportunity to contribute to various projects and new curriculum development while indirectly providing an opportunity for continuing education and information sharing among instructors. For example, throughout the year, teams of four to five instructors work with the instructional designer on staff to develop or revise curricula. This requires conference calls and face-to-face meetings. Then, during the IDC, all of the instructors are asked to comment on the current progress of that particular curriculum development, and modify the program if necessary. The IAFF has found this to be a cost-effective method for developing and revising curricula.

Additionally, the need for costly professional speakers and presenters at the IDC is minimized as subject matter experts within the IAFF instructor pool present new and innovative teaching methods for presenting existing IAFF curricula. For example, there have been few changes in national standards that apply to curricula such as *First Responder Operations, Illicit Drug Labs and Confined Space Operations*. Over time, however, instructors develop teaching methods that enhance the program, raising it to a higher level without necessarily revising the curricula. This is a cost-effective method aimed at improving IAFF HazMat/WMD training program capabilities as a whole. The IDC provides a forum to discuss the IAFF programs and identify training needs and subsequent new training programs.

In 2008, the IAFF's Partnership Education Program (PEP) instructors, Peer Fitness Trainers (PFT) and Fire Ground Survival (FGS) instructors joined the HazMat/WMD instructors at the IDC, and the conference is now an annual instructor development meeting for all IAFF instructors.

During the 2011 IDC, as part of a breakout group, the instructors met and identified various research data that should be included in the resource library. The IAFF has collected various web sites and documents related to HazMat/WMD from the instructors, and compiled a list of research locations and material that could be accessed by both students and instructors.

Upon final review and approval by the department, this information will be implemented into the IAFF learning management system and become part of the design and development of the resource library. The following tasks remain to complete this project:

- Review collected information
- Design and develop the resource library in the LMS

A brief summary of the past five IDCs, their locations and overview of topics is provided below:

- **2008 Charleston, SC**, *Topics included:*
  - Presentation: Training for the Next Generation
  - Presentation: Rethinking PowerPoint
  - Curricula updates

- **2009 San Antonio, TX**, *Topics included:*
  - Presentation: IAFF Training and Instructor Support
  - Presentation: How Adults Process Information and What Inhibits or Enhances that Process

- **2010 Monterey, CA**, *Topics included:*
  - Presentation: How to Give A Butt Kicking Presentation
  - Presentation: Trainers Work Way Too Hard, Get Em Involved
  - Curricula updates

- **2011 Clearwater, FL**, *Topics included:*
  - Presentation: The Exceptional Presenter
  - Presentation: Assistance to Firefighters Grants Update
  - Curricula Matters
  - Pro Board Test Development
- **2012 Clearwater, FL**, *Topics included:*
  - Presentation: *First Responder Operations* Development
  - Presentation: Pro Board Certification Program Overview and Proctor Training
  - *Technician* Development
  - *CSO/CSR* Curricula Development

All instructors are required to attend the IDC. Additionally, IAFF HazMat/WMD Advisory Board members are invited and typically attend, as it is conducted concurrently with the IDC.
See Appendix B – IDC Program Agendas.

Objective 4

Ensure that the IAFF First Responder Operations (FRO) program continues to meet or exceed applicable professional standards and incorporate lessons learned and best practices.

In order to ensure the FRO program continues to meet or exceed applicable professional standards and incorporate lessons learned and best practices, the IAFF has established a curricula development team comprised of the director, the curricula development coordinator, in-house subject matter expert (SME) and at least three IAFF master instructors. During this five-year grant cycle the team has included several instructors who are members of the National Fire Protection Association ® Hazardous Materials Response Personnel technical committee. The technical committee is responsible for the development of NFPA® 472, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents. Additionally, the IAFF in-house SME has been invited to participate in NFPA® 472 committee meetings.

The curricula development team has been responsible for cross-referencing the curriculum materials, first against the 2008 Edition, and recently to the 2013 Edition of NFPA® 472. The development team has also developed the IAFF's Analyze, Plan, Implement and Evaluate (APIE) Risk-Based Response model. The model is based on the structure of the NFPA® 472 standard, and focuses on using risk-benefit analysis as the basis for planning a response to hazardous materials and weapons of mass destruction incidents. Upon completion of the model, the team reorganized the content in the FRO program to better match the model. The model has also been incorporated into all of the curricula related to emergency response—Chemical Process Industries (CPI), Emergency Response to Terrorism: Operations (ERT: Ops, a sixteen-hour program) and ERT: Ops – Customized (an eight-hour refresher for the ERT: Ops program). Additionally, the IAFF has used the annual Instructor Development Conference as an opportunity to work on curricula development. Each year a working group is formed and tasked with reviewing the work of the curricula development team. The outcomes of these sessions include:

- Cross-references for NFPA® 472, 2008 Edition
- Development and review of new video to support instruction and performance evaluation (skills stations) of both core and mission-specific competencies at the operations level
- Development, review and revision of question banks in preparation for Pro Board accreditation
    - Awareness level – 127 written test items
    - Operations level – 320 written test items
- Recommendations for a course-specific train-the-trainer program for the FRO

- Recommendations for adjustments to the proposed outline and content, as well as instructional strategies for the revised FRO curriculum materials to be released in late 2013

During development team meetings and working groups, the instructors attending are encouraged to discuss their experiences teaching and customizing the FRO program so that lessons-learned are incorporated into the new and revised program.

Other curricula updates covered under the NIOSH grant include:

- Emergency Response to Terrorism: Operations (16-hour)
- Emergency Response to Terrorism: Operations – Customized (8-hour refresher)
- Emergency Response to Chemical Process Industries (8-hour)
- Confined Space Operations for First Responders (24-hour)

Emergency Response to Terrorism: Operations (ERT: Ops) (16-hour)* and Online Module

The *Emergency Response to Terrorism: Operations* course is a two-day, participant centered, instructor-led training program. The overall goal of the program is to train first responders at the operations level to use Analyze, Plan, Implement and Evaluate (APIE): A Risk-Based Response Process to ensure a safe, competent response to incidents involving WMDs, and reduce responder exposure, injury and death. During this course, participants will have the opportunity to apply the specific actions for each step in APIE: A Risk-Based Response Process to simulate the mitigation of four WMD scenarios. Once completed, this program will have an online module to allow participants to review the module entitled *Introduction to WMDs.*

Attending this training satisfies most of the annual hazardous materials refresher requirements for operations level responders as stated in Code of Federal Regulations (CFR) 1910.120 paragraphs (q)(6)(i) First Responder Awareness and 1910.120 (q)(6)(ii) First Responder Operations. However, 1910.120 requires that the employer certify that an individual has met all of the requirements and competencies identified. It is the responsibility of the employer/department to ensure that all competencies are met. Examples of additional information that needs to be covered include: how to perform basic control, containment and confinement, as well as ensuring the employee has an understanding of the relevant standard operating procedures/ guidelines (SOPs/SOGs).
*Primary funding agency is DHS. (Released in July 2011)

Emergency Response to Terrorism: Operations – Customized (ERT: Ops-C) Refresher*

The *Emergency Response to Terrorism: Operations – Customized (ERT: Ops – C)* is an 8-hour, participant-centered instructor-led training program. The program is designed to allow emergency responders to review the key concepts related to responding to incidents involving weapons of mass destruction.

By completing this course, participants will meet the refresher requirements for the operations level of OSHA 1910.120. Although the curriculum will meet or exceed the refresher requirements as mentioned above, it is important to note the regulation requires that the employer certify that an individual has met all of the requirements and competencies identified. It is the responsibility of the employer/department to ensure that all competencies are met.

This course will focus on emergency response to incidents involving WMDs. The curriculum will review the knowledge and skills covered in the IAFF's 16-hour ERT: Ops course plus updated information related to WMD incidents and response. Specifically, the curriculum will:

- Review:
  - Recent events in terrorism and emergency response
  - IAFF's APIE: A Risk-Based Response Process for effectively responding to incidents involving WMDs
  - Types of hazards encountered at incidents involving weapons of mass destruction (WMDs)
- Allow participants the opportunity to work through several WMD scenarios

*Primary funding agency is Department of Homeland Security. In final draft form and piloted, waiting to be released upon final approval from DHS)

Emergency Response to Chemical Process Industries (8-hour)*

The *Emergency Response to Chemical Process Industries* course is a one-day student-centered, instructor-led training. The overall goal of the program is to train first responders to use APIE: A Risk-Based Response Process to effectively respond to incidents involving the chemical process industry, and reduce responder injury and death. The purpose of the course is to help decrease the number of injuries and deaths of emergency response personnel responding to chemical process industry incidents.

This course also gives first responders the opportunity to learn new strategies they can use to help decrease injury and death in their departments. Topics include pre-incident planning, as well as the specific actions for each step in APIE: A Risk-Based Response Process.

Attending this training satisfies most of the annual hazardous materials refresher requirements as stated in OSHA 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER).

*Primary funding agency for development was Occupational Safety and Health Administration (OSHA) - Released in October 2009.

Confined Space Operations (CSO), Confined Space Rescue (CSR) and the CSO/CSR Train-the-Trainer (TtT) Revision*

This training focuses on defensive support procedures for first responders at confined space incidents. The course objective is to educate emergency responders about basic strategies to safeguard health and safety when their work involves working at, but not entering, confined spaces in accordance with OSHA regulation 29 CFR 1910.146, Permit-Required Confined Spaces. Topics include confined space regulations, pre-incident planning, potential hazards, ventilation procedures, personal protective equipment, monitoring and detection devices.

Safety issues and procedures for entering confined spaces for rescue are covered in the IAFF's *Training for Hazardous Materials Response: Confined Space Rescue* (CSR). The CSR program focuses on rescuers at the technician level and is not supported by the NIOSH grant.

During this grant period, the IAFF began the revision of both the CSO and CSR curricula. The curricula development coordinator observed three sessions of the combined CSO/CSR program. These sessions allowed the curricula development coordinator to become familiar with the program, have access to the subject matter experts (SMEs) on the revision team, as well as dedicated time for the development of curricula materials. Prior to the completion of this grant period, the revision team reviewed the existing materials and provided comments and/or recommendations for revision.

*Primary funding agencies for development were DOT and NIEHS.

Other Curricula Development Activities

During 2011, the IAFF facilitated a series of working groups comprised of IAFF master instructors who were charged with reviewing each curriculum to develop course-specific train-the-trainer (TtT) programs. These sessions resulted in outlines for the course-specific TtT programs. During these reviews, it was determined that the following programs targeted for first responders at the operations level required update and/or revision:

- Confined Space Operations (CSO) – released in January 2007
- Illicit Drug Labs (IDL) – released in January 2007

The CSO curriculum required updating as the technology used by responders to mitigate confined space incidents, such as monitors and ventilation equipment, has been significantly improved since the development of the original curriculum.

The IDL curriculum required updating due to the development of a new method for cooking methamphetamines—the one-pot method. Additionally, the statistics used to demonstrate where illicit drug labs occur across the United States and trends in the methods used to manufacture methamphetamines have changed.

The remaining operations level program is the *Infectious Diseases* curriculum. During the SMEs' review, it was determined this curriculum did not require revision. This course offers information about common infectious diseases that can affect the health and safety of first responders and their family members. Topics include strategies for staying well, bloodborne pathogens, disease prevention, post-exposure actions, and avian and pandemic influenza.

Objective 5

Continue local customized training program delivery to meet the needs of first responders, including fire and rescue departments, state fire training agencies and offices of emergency management.

Each time an IAFF training program is delivered, it has been customized to meet the needs of first responders and the communities they serve. Upon receipt of training assignments, IAFF master instructors begin their research and outreach. The instructors use Internet resources, as well as local standard operating procedures or guidelines (SOPs/SOGs). The Internet is used to obtain surface maps of the area (e.g., Google Earth). These maps provide clues to the types of structures, industry and topography of the area, as well as the locations of large chemical storage facilities, transportation hubs and even confined spaces such as silos and sewer systems. This information is used to develop localized examples, to increase the awareness of the hazardous materials within students' jurisdictions and, in some cases, to identify locations where technical drills can be used to provide hands-on practice for students.

SOPs/SOGs are generally obtained from the local point-of-contact. Instructors become familiar with these documents in order to incorporate local procedures into the content presented and in hands-on drills. In some cases, instructors discover that students are not even familiar with these documents. In these cases, the instructors take the opportunity first to impress upon students the importance of being familiar with the procedures and guidelines contained in these documents, and then to work through the documents with students.

IAFF master instructors also perform informal vulnerability assessment upon arrival at host cities. For example, instructors may take pictures of local chemical processing and/or storage facilities to use as examples in class. Instructors may also identify locations that may be targets of terrorist activities, such as local government buildings, abortion clinics and large sports or entertainment venues. These assessments not only facilitate instructors' ability to customize the delivery, but they allow the instructors to become familiar with the areas where students may respond during emergencies.

Objective 6

Incorporate a comprehensive health and safety program for first responders using online resources to continue the learning process after formal training.

As previously mentioned the IAFF developed six online mini-drills. Following is a brief synopsis of each drill:

- ***Mini-Drill #001 - Vapor Cloud Present***

  Synopsis: *April 29, 2001, shortly before 0400 hours, fire fighters are alerted for a vapor cloud in the area of a large agricultural service company. As the first units approach the area, they confirm the presence of a mist or cloud.*

- ***Mini-Drill #002 - Injured Person on Loading Dock***

  Synopsis: *A 911 call is received at 0645 hours for a report of a person down on the rear loading dock of a plastics manufacturing facility. The normal EMS dispatch for a person down is alerted. Upon further questioning of the caller and the location of the incident, it is possible that the person may be down from something other than medical issues.*

- ***Mini-Drill #003 – Dumpster Fire in a Residential Area***

  Synopsis: *This drill starts with a 911 call that is received at 1100 hours reporting a dumpster fire in an apartment complex. The normal assignment is alerted. As the first unit approaches the scene, they confirm a dumpster, well-involved with a heavy smoke condition at the end of an outside parking area.*

- ***Mini-Drill #004 – Students Mix Cleaning Agents***

  Synopsis: *This drill is a call received for a medical emergency at a small university. Upon arrival, the ambulance company is told several students were cleaning a bathroom in a dormitory with a variety of cleaning agents, and became ill.*

- ***Mini-Drill #005 – Incident Overturned Tanker***

  Synopsis: At approximately 1800 hours, on a summer evening, a cargo tank truck overturned as it entered the ramp of an interstate highway. In the past, numerous vehicle rollover incidents have occurred on this westbound entrance ramp. First-arriving units find that the tanker has rolled over 180 degrees, coming to rest upside down. The overturned tanker does not appear to be leaking.

- ***Mini-Drill #006 – Response to a HazMat Incident: Structural Fire Residential***
  Synopsis: At approximately 0300 hours, an alarm is sounded for a structural fire in a residential area. The normal assignment for this type of incident is dispatched. The first unit to arrive on the scene reports a 2½-story double occupancy, of ordinary construction, with a heavy smoke condition and fire showing from Division 1, Side D.

During this grant period, the IAFF worked with the IAFF Education Department and Information Technology (IT) Department to develop and implement an online learning management system (LMS). The LMS is an open source program—Moodle (http://www.moodle.org). This system which is housed on the IAFF web site integrates the online student registration, online pre-testing and online course delivery processes. Eventually, participants will be able to access online HazMat/WMD resources, as well as practice certification (Pro Board) exams.

Also during this five-year competitive agreement, the IAFF created two modules: *Introduction to Weapons of Mass Destruction and Radiation Fundamentals.* These modules will be available from the online learning portal on the IAFF web site. Future modules will include an Awareness Refresher series and supplemental information for the FRO and other operations level curricula.

Objective 7

Prioritize training sites based on risk assessment which takes into account communities exposed to hazardous materials manufacturing, use, storage, transportation, disposal or natural or manmade disasters.

As part of their requests, organizations seeking IAFF training are required to provide an explanation of the need for training in their area. This information, plus information available in the media related to local hazardous materials incidents, is used to perform an informal risk assessment. Training sites are then prioritized. Those sites with the greatest needs receive training first, while those with lesser needs will receive training later, or may be wait-listed. The IAFF plans to develop a more formalized system that includes specific criteria for assessing the level of risk and/or vulnerability.

Objective 8

Continue to employ marketing and outreach efforts to meet the needs of first responders in underserved populations.

The IAFF continues to aggressively market the HazMat/WMD training programs and new and updated curricula. The department training coordinators and IAFF instructors staffed the HazMat/WMD booth and provided marketing materials at numerous conferences across the country. A spiked increase in training requests has been noted in direct relation to the IAFF HazMat/WMD marketing agenda.

The IAFF attended numerous conferences each year where career and volunteer fire fighters were in attendance, staffing its booth with a department training coordinator and a master instructor who discussed and disseminated department marketing materials, and collected contact information from attendees interested in HazMat training. The following are a few examples of conferences where the department exhibited during FY 2008-2012:

- IAFC International HazMat Response Teams Conference
- IAFF EMS Conference
- IAFF Legislative Conference
- NFPA Conference
- Fire Department Instructors Conference
- Urban Areas Security Initiative
- Wisconsin HazMat Conference Firehouse Expo
- FEMA/Emergency Management Conference

See additional conferences, meetings in the Collaboration and Partnership section.

As the largest organization representing professional fire fighters in the United States and Canada, the IAFF is uniquely positioned to reach a large portion of its targeted audience through media sources. This includes the IAFF publications, *International Fire Fighter, Frontline News Alert and International Leader.* Recently published articles are located in Appendix C

The IAFF has developed an extensive outreach program, and continues to use the following tools, as discussed in the Outreach section of this application:

- Print media – The *International Fire Fighter* is a publication that is distributed to the entire IAFF membership to keep them informed of current issues, including available training opportunities.

- Internet – In addition to news and links to other fire/rescue organizations of interest to its membership, the IAFF web site also lists the training programs available at http://www.iaff.org/et/hw/courses.html along with course descriptions.

- Conferences and seminars – The HazMat/WMD Training Department attend conferences, seminars and industry meetings to provide input and disseminate information about training opportunities through the IAFF.

- Targeted mailings – The IAFF is able to utilize targeted mailings as an effective means to reach fire and rescue departments because of the many IAFF locals represented

throughout the United States and Canada. These enable the IAFF to recruit underrepresented populations and underserved areas.

- Trainers' Exchange – In conjunction with other labor unions who are also NIOSH grantees, the IAFF attends and participates in approximately six training sessions annually. Meeting locations vary throughout the United States. The IAFF provides two instructors at each event who usually attend a town hall-type meeting, share experiences and assist with planning.

- The IAFF recognizes the importance of diversity recruitment of personnel for emergency services and the challenges present in the process. The IAFF serves as a resource to assist them in developing an effective diversity recruitment program. Much of the information is available on the IAFF web site at http://www.iaff.org/HR/DiverseRecruitment/effectprogram.htm. It contains information on creating and implementing an effective program that addresses diversity issues and other concerns.

See Appendix D – Marketing Brochures/Fliers/Periodicals.

Objective 9

Maintain high program quality and efficiency through the implementation of an updated, fully integrated Quality Assurance effort.

The IAFF continued use its integrated Quality Assurance Program (QAP) to ensure the efficient and consistent delivery of high quality training programs. The QAP consists of several components, including a checklist, Internal QA Report (IQAR), External QA Report (EQAR) and Program Auditing Functions. The QA checklist allows course coordinators and IAFF master instructors to identify and proactively address issues integral to program quality. The IQAR provides internal feedback on course efficiency and effectiveness, and is a valuable monitoring tool. External reporting, using the EQAR, provides timely feedback to stakeholders, such as instructors and sponsoring agencies. Program auditing is accomplished through periodic data analyses and on-site visits by staff and consultants. The ultimate goal of the QAP is to incorporate quality assurance into every aspect of course planning, delivery and evaluation.

1. The **Quality Assurance Checklist** was developed to address issues of program quality prior to, during and after training events. The training coordinator assigned to a given program can use the checklist to ensure all necessary logistics are completed in a timely manner. Instructor assignments, training, materials shipments and other components of the program are clearly documented. As a result, the projects gain consistency across all events.

2. The **Internal Quality Assurance Report** is an important part of any training conducted by the IAFF. This internal tool is designed to ensure that all planning, logistics, registration and reporting functions are completed properly. IAFF staff also gain valuable budget tracking indicators that allow the department to target functions or events that may limit the IAFF's ability to meet grant objectives.

3. The **External Quality Assurance Report** allows the IAFF to distribute a review of the pre and post test scores and a graphic depiction of key evaluation efforts to the sponsoring department or agency and others directly associated with the program. The information affords those involved an opportunity to improve performance where necessary.

In addition, to the IAFF's Quality Assurance program and student evaluations, the IAFF developed an Instructor Structured Feedback Program whereby experienced IAFF instructors, local instructors and new IAFF instructors are observed and evaluated using a structured feedback form. The structured feedback form is used in three situations:

1. Mentor Observer Sessions Ten mentor observers, selected by their peers, conduct observations of their fellow IAFF instructors using conforming and corrective feedback. The structured feedback form is used to evaluate the IAFF master instructor, and the responses are submitted electronically.

2. Supervised Training Sessions All new IAFF master instructors are required to audit FRO and ERT: Ops course deliveries, then participate in FRO and ERT: Ops supervised training sessions where they team teach with an experienced IAFF master instructor, who will provide supportive feedback using the instructor structured feedback form. Upon completion of both audits and supervised training sessions, the new instructor is qualified to deliver the FRO and ERT: Ops programs.

3. Supportive Teaching Session Supportive teaching sessions were designed to ensure competency of local instructors who have completed an IAFF TtT. During an STS, local instructors (or new IAFF instructors) are assigned an experienced IAFF instructor, who acts as a mentor to the local instructor as they team teach. The IAFF instructor evaluates the didactic and practical skills of the instructor, and provides structured feedback, using the IAFF instructor structured feedback form.

See Appendix E for a copy of the Instructor Structured Feedback Form.

Throughout the five years of this granting period, the IAFF has received numerous letters of appreciation from various training sites. The following are some of the comments which have been received by the IAFF:

"As far as the course is concerned I only got positive feedback from all who attended and I made it a point to talk to everyone afterwards to get their feedback. I received comments like "wow that was an eye opener", "Those guys sure know what they are talking about", "I have changed my way of thinking when responding to a call now".

"Personally I had an incident last week where the course paid dividends. The local emergency department called while I was on shift stating that they had an elderly patient presenting with possible symptoms of carbon monoxide poisoning and they wanted us to attend her apartment to investigate. Well, it so happened that we still had the MSA 4 gas detectors at the Station, so I responded and sent the junior firefighter in the apartment with SCBA and turnout gear to take a reading while I waited outside with the patient's two sons. We only entered the apartment once I was radioed that all was ok according to the monitor. As a result of that call and the gas leak we only returned one monitor to Public Works and the other remains on our pumper truck. It will now be protocol to respond as I did on all CO calls in the future".

"Thanks again for giving us in my opinion a career changing course that I know will make the difference between possibly coming home to my Family at the end of my shift. As I know you are aware, if it were not for courses like this coming to small locals, they would probably never get them. Thank God for the great Brotherhood that we belong to".

See Appendix F for additional Letters of Appreciation.

Objective 10

Using a range of program evaluation methods and analytical techniques identify, describe and disseminate information regarding the positive impacts, both short and long-term, of hazmat first responder training.

As part of its ongoing program evaluation, the IAFF follows a proven model for follow-up course evaluation based on Kirkpatrick's Four Levels of Evaluation.

Level I-Reaction	**Defined as how well the trainees liked a particular training program. It is in fact measuring customer satisfaction. The IAFF uses a survey to measure results.**
Level II-Learning	**Measured by calculating the difference between pre- and post-tests. This produces knowledge gain.**
Level III-Behavior	**Behavior is assessed 12-18 months after the training. Interviews are conducted o assess student confidence levels and identify specific actions they have taken after the training to perform their jobs more safely.**

Level IV- Results/ROI	**Determines the return on investment (ROI) as related to training. Examples include decreased worker injury, accidents and worker compensation claims.**

Level I

Measures are taken to ensure the highest quality of program delivery and to determine pre- and post-course competencies. Based on training during the past four years, the department has seen a significant knowledge gain after students have taken IAFF HazMat training.

Level II

The surveys include a section where trainees may enter comments at the completion of training. The following are examples of student responses on their survey forms when asked what they liked about the program they attended:

- *Informative, applicable, added tools to the toolbox*
- *Instructor knowledge and enthusiasm, case studies, visual aids*
- *Class exercises, scenarios, skills of using resource books*
- *Class participation, entertaining instructors, slide show videos*
- *Practical, easy to apply, articulate well spoken instructors, good for first-in officers*
- *Reacquainting with the ERG, learning how to use NIOSH book, learning APIE*
- *Was not what was expected---was better than expected*
- *Instructors made hazmat bearable!*
- *Case studies, reference materials, excellent instructors*
- *Interesting instructors, good videos of hazmat situations, course flowed well*
- *Videos, tabletop exercises, laid back style*
- *Informative, effective, efficient*
- *Good instructors, good material, needed refresher*
- *Instructor experience, good utilization of resources, course duration*

Level III

In 2008, comprehensive Level III evaluations were conducted in Virginia, Pennsylvania, Tennessee and Massachusetts. See Appendix G - 2008 Level III Evaluation Report.

In December 2010, in an effort to enhance and improve its Level III evaluation program, the IAFF held a Level III evaluation workshop at its annual Instructor Development Conference. The workshop was conducted by Dr. Bruce Lippy, president of the Lippy Group, LLC, an occupational safety and health consulting firm based in Baltimore, MD that has a strong focus on worker training. IAFF instructor subject matter experts attended the Level III Evaluation workshop, where they received training on conducting Level III evaluation interviews. Dr. Lippy developed a modified and detailed Level III evaluation tool that would allow the IAFF, through its master instructors, to continuously assess the impact that IAFF training has 12-18 months after

students have returned to their jobs. Level III evaluations focus on the transfer of knowledge. This form of evaluation includes the collection of data pertaining to on-the-job application of what was taught during training.

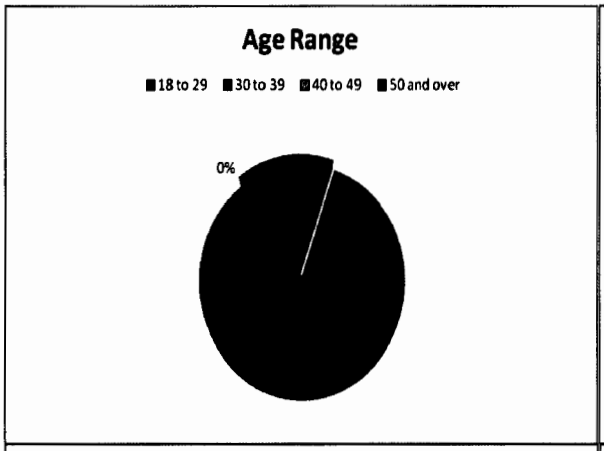
As part of its new Level III Evaluation Program, the IAFF adopted the following policies:

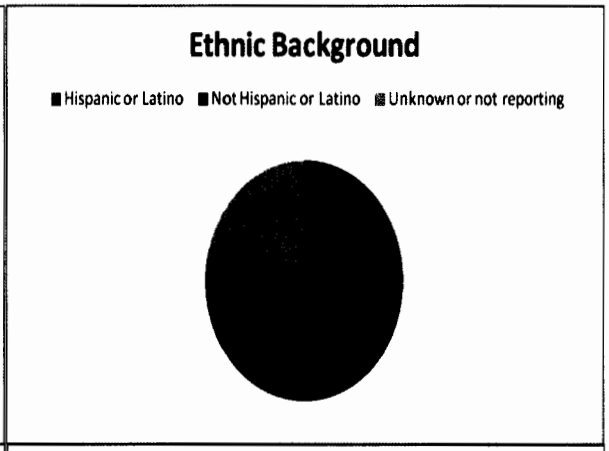
- Those trained IAFF instructors will conduct interviews of students, preferably face-to-face, ideally at least six months after students have completed IAFF training, to determine if and how they have applied what they learned.
- The interviewer will not be the instructor who taught that class.
- Every effort will be made to conduct the interview in a neutral, convenient place away from the students' workplace and supervisor.
- The interview will focus on behaviors that demonstrate students have applied key concepts (Kirkpatrick Level III), preferably with details from specific incidents.
- The end of the interview will also include some questions demonstrating recall of key information (Kirkpatrick Level II).
- The interviewer will record this information and provide it to IAFF headquarters in a standard format.
- Trends in the results will be analyzed and reported back to instructors.
- The interview process should generate case studies and anecdotes that can be woven into the curriculum, and used in reports to the funding agency.

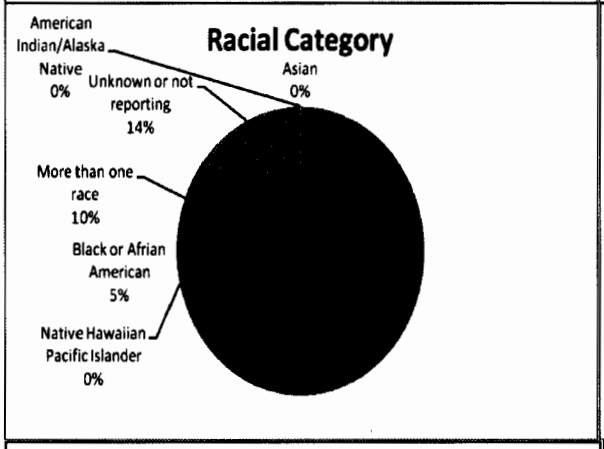
In 2012, the IAFF conducted Level III evaluations in New York and Arizona. A sample of the results follows:

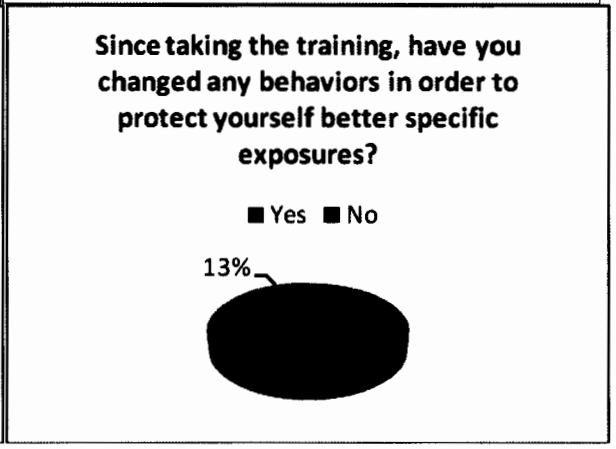
ARIZONA

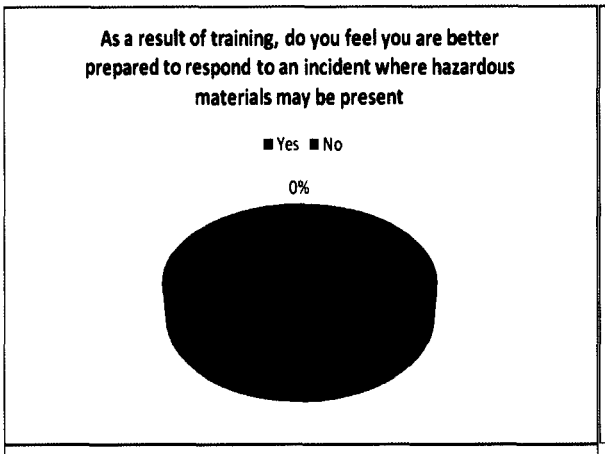
Male 96.4%
Female 3.6%

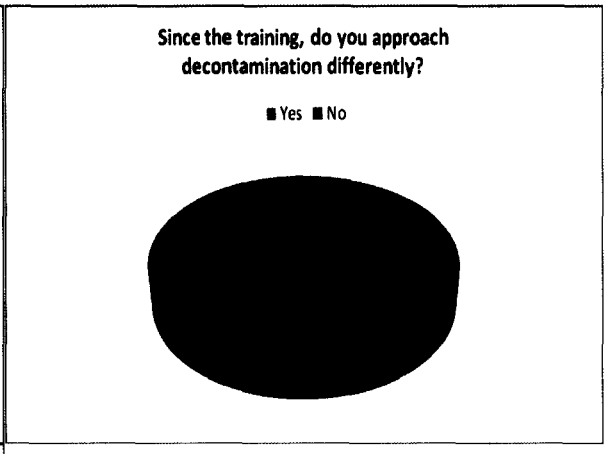


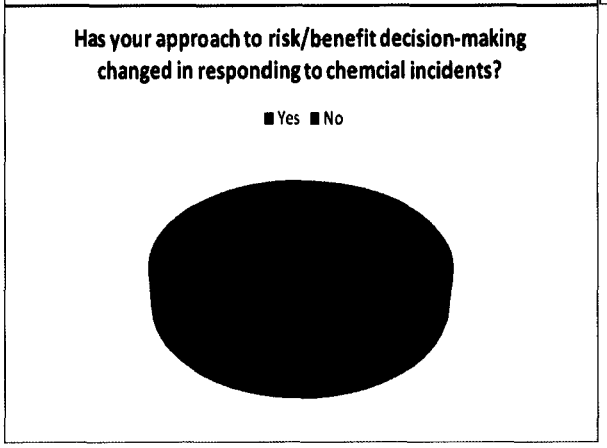






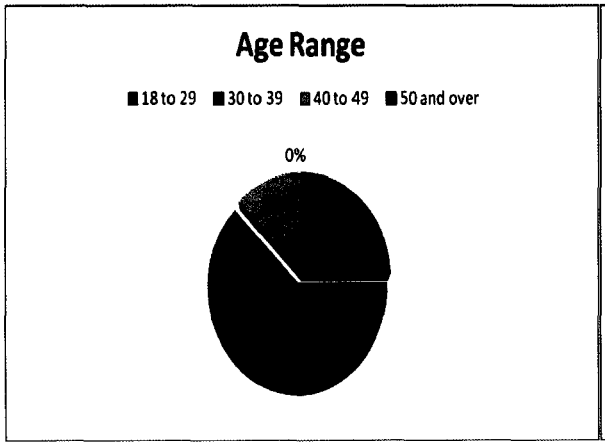


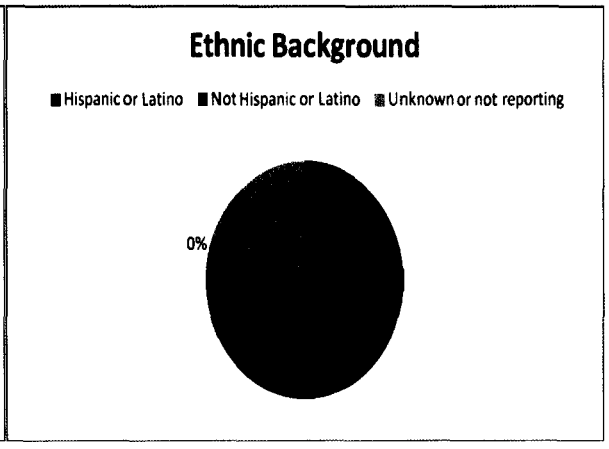


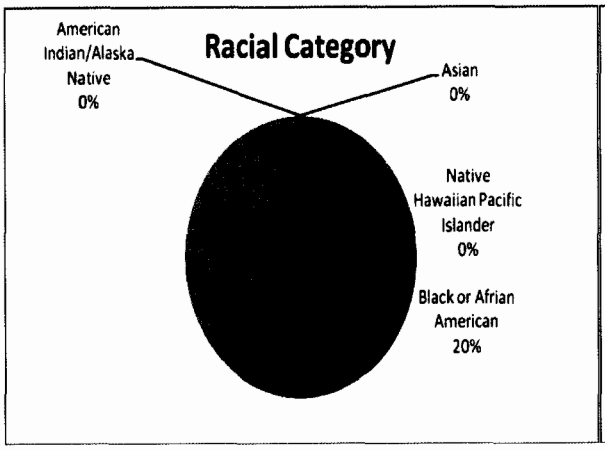


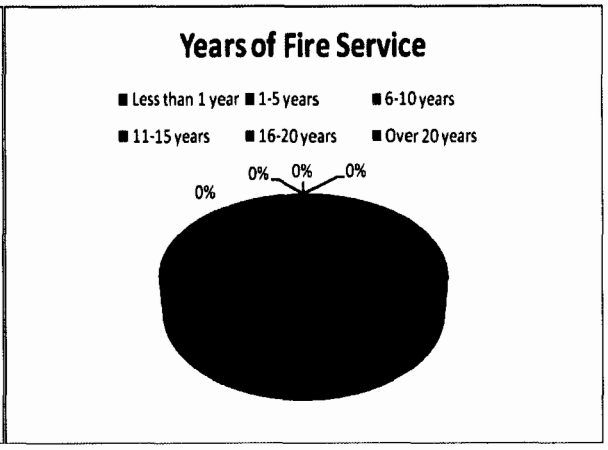
NEW YORK

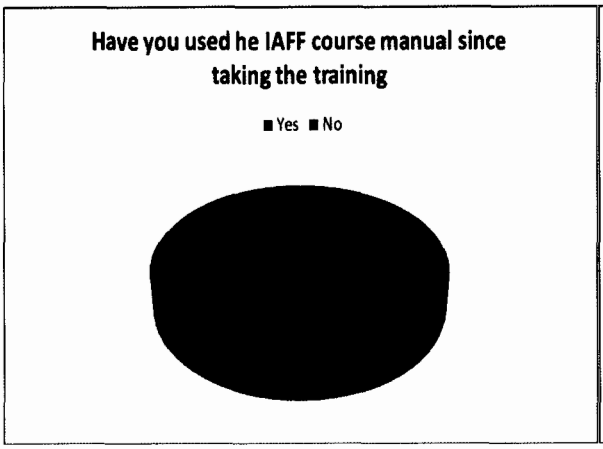
Gender
Male 8
Female 0

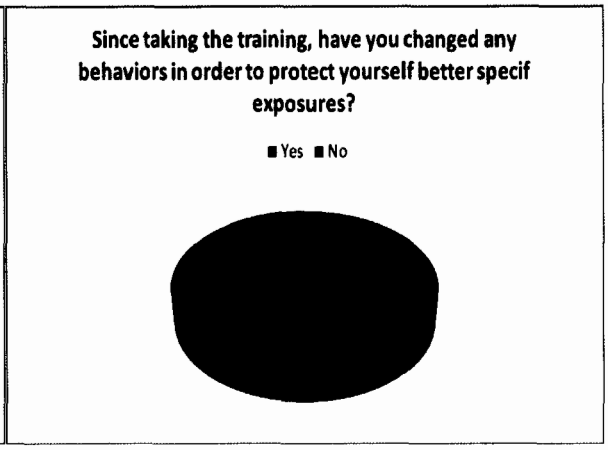


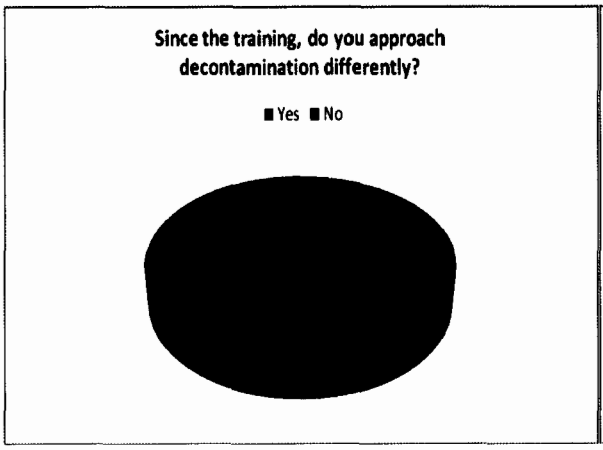


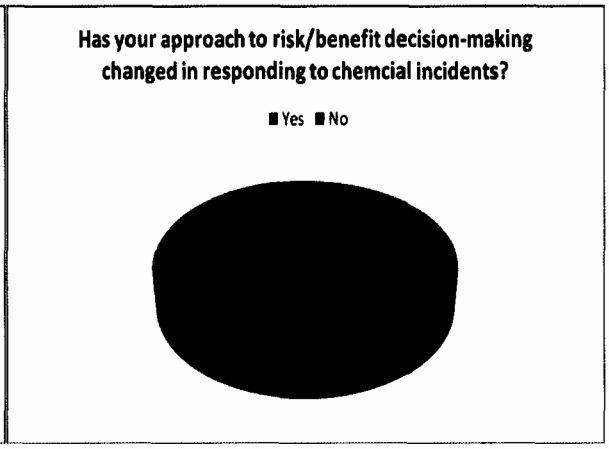












Mentor Observer Program

As previously mentioned, the IAFF developed a mentor observer program to evaluate the IAFF instructor cadre's training techniques and procedures. A core group of ten IAFF mentor observers act as trusted counselors who share their valued experience with new and current IAFF instructors. Their role is to observe fellow IAFF master instructors in a collegial manner,

share their observations in a supportive way and encourage the observed instructors to maintain what works, while modifying what can be improved. To date, a total of 15 mentor observer sessions have been conducted with NIOSH funding.

Advisory Board

The IAFF HazMat/WMD Advisory Board meets during the annual Instructor Development Conference. The Advisory Board consists of thirteen members in addition to General President of the IAFF. The members are appointed by the IAFF General President and represent fire/rescue service, labor, academia, public health and industry.

The Advisory Board provides oversight for the grants, advice to the program director and recommendations regarding program content and delivery. The Board reviews the overall training plan of the HazMat/WMD Training Department and examines training materials and proposed evaluation tools. They meet once a year and receive regular written and electronic correspondence regarding current and pending activities. Advisory Board members are encouraged to attend training sessions, conduct evaluations and assess the quality of training.

During this grant period (2008-2012), the Board has consisted of the following individuals:

2008 Advisory Board

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Steve Cassidy, President, Local 94 - Uniformed Fire Officer's Association of New York
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute of Occupational Safety and Health
- Judy Jarrell, M.A., Ed.D., University of Cincinnati, College of Medicine
- Steven M. Becker, Ph.D., The University of Alabama at Birmingham, School of Public Health
- Robert K. Carver, President, Florida Professional Fire Fighters
- Brian McBride, President Local 22 - Philadelphia Professional Fire Fighters (Appointed in 2008)

2009 Advisory Board

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Robert K. Carver, President, Florida Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Judy Jarrell, M.A., Ed.D., University of Cincinnati, College of Medicine
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Randy Wyse, President, Local 122 – Jacksonville Association of Fire Fighters (Appointed in 2009)
- Steve Cassidy, President, Local 94 - Uniformed Fire Officers Association of New York
- Brian McBride, President Local 22 - Philadelphia Professional Fire Fighters (Resigned 2009)

2010 Advisory Board

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Judy Jarrell, M.A., Ed. D., University of Cincinnati, College of Medicine
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Steve Cassidy, President, Local 94 - Uniformed Fire Officers Association of New York
- Randy Wyse, President, Local 122 – Jacksonville Association of Fire Fighters

2011 Advisory Board

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Jerry Chandler, Ph.D., National Institutes of Health
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Judy Jarrell, M.A., Ed. D., University of Cincinnati, College of Medicine
- Randy Wyse, President, Local 122 - Jacksonville, Florida
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Ernie Mitchell, Past President, International Association of Fire Chiefs (Resigned in 2011, Appointed as United States Fire Administrator)

2012 Advisory Board

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Jerry Chandler, Ph.D., National Institutes of Health
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Judy Jarrell, M.A., Ed. D., University of Cincinnati, College of Medicine
- Randy Wyse, President, Local 122 - Jacksonville, Florida
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Lou Palmermo, Sc.D, PE, DABET, LSO, RSP, Associate Inc. (Appointed 2012)

See Appendix H – Advisory Board Minutes (2008-2012).

Collaboration and Partnership

During the five-year granting period, the IAFF participated in several outside meetings of significance, with numerous agencies. Several of these meetings and partnerships are highlighted below:

2008

- National Fire Fighter Near-Miss Reporting System Stakeholders' Symposium – San Diego, CA
- Congressional Fire Services Institute on the Mall – Washington, DC

2009

- FEMA-EMI National Preparedness Training & Exercise Conference – Emmitsburg, MD
- Health Safety and Security Visiting Speaker Program – Washington, D.C.
- Hazard Substance Training/Hazard Substance Academic Training National for Occupational Safety and Health Meeting – Orange County, CA
- National Institute of Environmental Health Sciences Prep Meeting – Cincinnati, OH.
- International Association of Fire Chiefs HazMat Roundtable Strategic Planning – Fairfax, VA
- Department of Energy – Safety Training Advisory Committee (TAC) – Albuquerque, New Mexico

2010

- HazMat Emergency Response Workshop – Sacramento, CA
- Hammer Medical Surveillance and Steering Committee – Washington, DC
- DOE Safety and Security Reform Status – Washington, DC
- IAFC Roundtable Forum – Fairfax, VA
- HazMat Fusion Center Advisory Work Group – Denver, CO
- Urban Area Security Initiative (UASI) Conference – New Orleans, LA

In 2010, New Orleans experienced one of the worst oil spills in U.S. history. The IAFF worked collaboratively with the following government agencies and stakeholders to provide training in the oil-spill cleanup:

- National Institute of Environmental Health Sciences (NIEHS)
- British Petroleum (BP)
- Texas Engineering Extension Service (TEEX)
- Petroleum Education Council (PEC)
- U.S. Fish and Wildlife Service
- Occupational Safety and Health Administration (OSHA)

The IAFF prepared and trained workers in the oil cleanup, and to face the following training challenges:

- Language barriers (many receiving training were Hispanic and Vietnamese)
- Lack of 40-hour HAZWOPER certification (which all of the IAFF instructor have) as a training requirement

2011

- Department of Homeland Security Emergency Response – Chicago, IL
- Refinery Chemical Engineers Work Group Meeting – Philadelphia, PA
- Southeast Counter-Terrorism Emergency Response Conference – Charlotte, NC
- Mid-South Police and Fire Expo – Memphis, TN
- ProBoard Conference – San Diego, CA

2012

- NIEHS Awardee Meeting and National Trainers Exchange – Ft. Lauderdale, FL
- Firehouse Expo – Baltimore, MD
- International HazMat Response Teams Conference – Baltimore, MD

Certification and College Credit

Two very important outcomes of IAFF training are the certification and receipt of college credit. The IAFF receives many emails, telephone calls and inquiries at conferences as to whether or not the department's curricula are accredited or eligible for college credit recommendations. These requests come from individuals as well as representatives from IAFF locals and fire departments. During this granting period, the IAFF launched and completed a survey to determine the certification requirements of each state. It was found that 30 of the 50 states and 26 other agencies are accredited by the National Board on Fire Service Professional Qualifications (Pro Board) because IAFF courses are, in fact, more comprehensive than those endorsed by various states.

The IAFF has obtained recognition and reciprocity in many states, including Florida and Arizona, while in other states IAFF works in partnership with the certification authority, such as the Office of the State Fire Marshal in Illinois. Although the IAFF looks forward to creating partnerships for training certification/approval, the process can at times be lengthy and repetitive. As many states move toward accreditation, the IAFF is also moving toward acquiring accreditation for its training programs.

In addition to Pro Board certification inquiries, the IAFF receives many inquiries regarding college credit. IAFF training programs have been vetted for college credit through the National Labor College (NLC) and the American Council on Education (ACE) College Credit Recommendation Service (CREDIT).

Pro Board Application

Work continues toward the development of the policies and procedures required for application for accreditation through the National Board on Fire Service Professional Qualifications (Pro Board). The department has worked through the Program Administration section of the self-assessment document required by the Pro Board as part of the IAFF's application. The Program Administration section covers policies and procedures related to discrimination and equitability, incumbents, prerequisites, the IAFF's handling of the views and opinions of other organizations, appeals and retests.

Policies and procedures are being documented within the HazMat/WMD Certification Program Policy and Procedures guide. Additionally, all supporting documents such as the cover letters for certificates, eligibility to retake certification exams and requirements to retake a course, as well as disability accommodation request forms have been developed. Two additional sections of the self-assessment and policy and procedures documents remain to be drafted: test development and test administration.

Parallel to the development of policy and procedures, the department is acquiring the equipment and supplies that will be needed to support the IAFF's certification program. To date, scanners have been purchased and the operations and logistics engineer is working with the forms supplier to customize the test answer forms. The forms are being designed to work with all of the department's curricula—not just the programs that will be part of the certification program—as well as to gather the demographic and evaluation information required by IAFF grantors. Once the scoring system is in place, the test can be generated and piloted. The pilots will allow the IAFF to statistically establish the validity and reliability of the tests to be used in the certification program. During this process, the test scoring equipment, software and forms will also be tested, and the certification process can be refined and finalized prior to submission of the IAFF's application to the Pro Board.

ACE College Credit Recommendation Service (CREDIT)

During this grant cycle, the IAFF obtained credit recommendations from the American Council on Education (ACE) College Credit Recommendation Service (CREDIT) for the following curricula:

- Hazardous Materials Training for First Responders Operations
- Emergency Response to Terrorism: Operations (16-hour)
- Hazardous Materials Training for Confined Space Operations
- Emergency Response for Confined Space Rescue
- Emergency Response to Illicit Drug Labs
- Infectious Diseases
- HazMat Technician

During the last year of this cooperative agreement, ACE CREDIT changed its requirements for credit recommendations. The IAFF continues to seek credit recommendations under the new requirements.

Publications

Publications Printed with NIOSH Funding

Student manuals, instructor guides, PowerPoint slides and associated videos for the following training programs were developed for the purpose of implementing Objective 1:

- Hazardous Materials Training for First Responders Operations
- Emergency Response to Terrorism: Operations (16-hour)
- Hazardous Materials Training for Confined Space Operations
- Emergency Response to Illicit Drug Labs
- Infectious Diseases
- Training for Hazardous Materials Response: Radiation
- Chemical Process Industries

Marketing Materials Printed With NIOSH Funding

The following marketing materials were developed and printed for the purpose of implementing Objective 8:

- IAFF HazMat/WMD Training Curricula brochure
- IAFF Comprehensive Training for First Responders brochure
- IAFF Chemical Process Industries flyer

Plans

In 2012, the IAFF was awarded another five-year Competitive Agreement from NIOSH in response to its application for funding. The IAFF was approved to carry out eight objectives for the period from FY 2012 - 2018 as listed below.

Objective One: Conduct a minimum of 80 operations-level training events for the purpose of ensuring a safe and effective response to hazardous materials/weapons of mass destruction incidents by emergency response personnel

Objective Two: Maintain a pool of 80-100 qualified first responder master instructors who represent the diversity of the fire service and other emergency responders.

Objective Three: Conduct an annual working meeting to provide program policy and curricula updates to IAFF master instructors.

Objective Four: Ensure that the IAFF *First Responder Operations* program and other operations-level hazmat curricula continue to meet or exceed applicable professional standards, and incorporate lessons learned and best practices.

Objective Five: Continue customized HazMat training program delivery to meet the needs of the entire first responder community.

Objective Six: Incorporate a comprehensive health and safety program for emergency response personnel using an expandable online program to continue the learning process for pre and post training delivery.

Objective Seven: Continue to employ marketing and outreach efforts to meet the needs of emergency response personnel in underserved locations to underrepresented student populations.

Objective Eight: Using a range of program evaluation methods and analytical techniques, identify, describe and disseminate information regarding the positive impacts, both short and long-term, of IAFF training, as well as the effectiveness of the instructors conducting the training.

Future Major Tasks

- Ensure the IAFF FRO program continues to meet or exceed NFPA and OSHA standards. This includes completion of the revised FRO and train-the-trainer delivery to IAFF master instructors. The course release date is 2012-2013.
- Continue the Pro Board accreditation process of the FRO and Technician programs.
- Continue to recruit and enhance diversity through marketing and training.
- Conduct mentor observer sessions of IAFF master instructors.
- Continue to work on improving information efficiencies and implementation of the open source Learning Management System (LMS) with the IAFF system. The IAFF is currently working on reducing classroom time by incorporating the LMS for pre-test administration.
- Develop a formalized process for prioritization of needs and risk-based training.

APPENDIX A

FY 2008-2012 IAFF Training Report

IAFF Hazardous Materials / WMD Training Department

Training Report for NIOSH IAFF

Sessions ending between 10/1/2007 and 9/30/2008

Total of Classes: 274

CIN	Location	Program	Format	Start Date	End Date	# Trainees	Actual # Contact Hours	Status	TC
Training			**274 Classes**		**6,160 Students**		**121,600 Contact Hours**		
Direct Training			**41 Classes**		**654 Students**		**9,616 Contact Hours**		
8389-01	Salem, MA	FRO	DEPT	10/1/2007	10/9/2007	15	360	Complete	KL
8389-03	Salem, MA	FRO	DEPT	10/1/2007	10/9/2007	17	408	Complete	KL
8389-04	Salem, MA	FRO	DEPT	10/1/2007	10/9/2007	9	216	Complete	KL
7032-03	Fort Worth, TX	FRO	DEPT	10/2/2007	10/4/2007	25	600	Complete	CT
8388-01	Peabody, MA	Drug Labs	DEPT	10/8/2007	10/11/2007	13	104	Complete	KL
8388-02	Peabody, MA	Drug Labs	DEPT	10/8/2007	10/11/2007	13	104	Complete	KL
8388-03	Peabody, MA	Drug Labs	DEPT	10/8/2007	10/11/2007	11	88	Complete	KL
8388-04	Peabody, MA	Drug Labs	DEPT	10/8/2007	10/11/2007	11	88	Complete	KL
8388-05	Peabody, MA	Drug Labs	DEPT	10/16/2007	10/17/2007	11	88	Complete	KL
8388-06	Peabody, MA	Drug Labs	DEPT	10/16/2007	10/17/2007	11	88	Complete	KL
8389-02	Salem, MA	FRO	DEPT	10/16/2007	10/17/2007	16	384	Complete	KL
8388-07	Peabody, MA	Drug Labs	DEPT	10/18/2007	10/19/2007	11	88	Complete	KL
8388-08	Peabody, MA	Drug Labs	DEPT	10/18/2007	10/19/2007	10	0	Complete	KL
8407-01	Cumming, GA	Drug Labs	DEPT	10/20/2007	10/20/2007	9	72	Complete	KL
8405-01	Derry, NH	Drug Labs	DEPT	11/12/2007	11/12/2007	17	136	Complete	CT
8379-01	chelsea, MA	Drug Labs	DEPT	11/13/2007	11/13/2007	15	120	Complete	CT
8405-02	Derry, NH	Drug Labs	DEPT	11/13/2007	11/13/2007	18	144	Complete	CT
8379-02	chelsea, MA	Drug Labs	DEPT	11/14/2007	11/14/2007	20	160	Complete	CT
8405-03	Derry, NH	Drug Labs	DEPT	11/14/2007	11/14/2007	12	96	Complete	CT
8379-03	chelsea, MA	Drug Labs	DEPT	11/15/2007	11/15/2007	14	112	Complete	CT
8405-04	Derry, NH	Drug Labs	DEPT	11/15/2007	11/15/2007	17	136	Complete	CT
8379-04	chelsea, MA	Drug Labs	DEPT	11/16/2007	11/16/2007	11	88	Complete	CT
8574-01	Tucson, AZ	FRO	DEPT	11/19/2007	11/23/2007	18	432	Complete	KL
8379-05	chelsea, MA	ID	DEPT	12/3/2007	12/3/2007	16	128	Complete	CT
8379-06	chelsea, MA	ID	DEPT	2/4/2008	2/4/2008	16	128	Complete	CT
8379-07	chelsea, MA	ID	DEPT	2/25/2008	2/25/2008	14	112	Complete	CT
8379-08	chelsea, MA	ID	DEPT	3/13/2008	3/13/2008	16	128	Complete	CT
8465-01	Papillion, NE	FRO	DEPT	3/25/2008	3/27/2008	22	528	Complete	CT
8472-01	Gallatin, TN	CSO	DEPT	4/21/2008	4/23/2008	20	480	Complete	CT
8472-02	Gallatin, TN	CSO	DEPT	5/12/2008	5/14/2008	19	456	Complete	KL
7800-04	Hartford, CT	FRO	DEPT	5/13/2008	6/30/2008	20	480	Complete	CT
8472-03	Gallatin, TN	ERT:Ops	DEPT	5/19/2008	5/24/2008	42	1008	Complete	KL
8499-01	Warwick, RI	FRO	DEPT	7/14/2008	7/16/2008	20	480	Complete	KL
8499-02	Warwick, RI	CSO	DEPT	7/22/2008	7/23/2008	23	552	Complete	KL
8502-01	Deltona, FL	Drug Labs	DEPT	8/4/2008	8/4/2008	13	104	Complete	KL
8502-02	Deltona, FL	Drug Labs	DEPT	8/5/2008	8/5/2008	19	152	Complete	KL
8502-03	Deltona, FL	Drug Labs	DEPT	8/6/2008	8/6/2008	15	120	Complete	KL
8552-01	Fresno, CA	FRO	DEPT	8/18/2008	8/21/2008	13	312	Complete	KL
8503-01	Elyria, OH	Drug Labs	DEPT	9/24/2008	9/26/2008	16	128	Complete	KL

Total of Classes: 274

CIN	Location	Program	Format	Start Date	End Date	# Trainees	Actual # Contact Hours	Status	TC
8503-02	Elyria, OH	Drug Labs	DEPT	9/24/2008	9/26/2008	13	104	Complete	KL
8503-03	Elyria, OH	Drug Labs	DEPT	9/24/2008	9/26/2008	13	104	Complete	KL
First Line Supervisor Training Program			**5 Classes**			**87 Students**	**1,504 Contact Hours**		
8436-01	New York, NY	ERT:Ops	FLIPS	10/29/2007	10/30/2007	15	240	Complete	DM
8436-02	New York, NY	ERT:Ops	FLIPS	11/14/2007	11/15/2007	15	240	Complete	DM
8436-03	New York, NY	ERT:Ops	FLIPS	12/6/2007	12/7/2007	28	448	Complete	DM
8436-04	New York, NY	ERT:Ops	FLIPS	2/4/2008	2/5/2008	15	240	Complete	DM
8436-05	New York, NY	ERT:Ops	FLIPS	3/17/2008	3/19/2008	14	336	Complete	DM
IAFF			**21 Classes**			**389 Students**	**6,032 Contact Hours**		
8288-03	Concord, CA	Drug Labs	IAFF	10/15/2007	10/15/2007	17	136	Complete	CT
8428-01	Charleston, SC	FRO	IAFF	10/15/2007	10/17/2007	22	528	Complete	TH
8288-04	Concord, CA	ID	IAFF	10/16/2007	10/16/2007	17	136	Complete	CT
8288-05	Concord, CA	Drug Labs	IAFF	10/17/2007	10/17/2007	17	136	Complete	CT
8390-04	Grand Coulee, WA	Drug Labs	IAFF	10/17/2007	10/17/2007	15	120	Complete	DM
8288-06	Concord, CA	ID	IAFF	10/18/2007	10/18/2007	17	136	Complete	CT
8357-07	New York, NY	ERT:Ops	IAFF	11/29/2007	11/30/2007	11	176	Complete	DM
8288-07	Concord, CA	FRO	IAFF	12/5/2007	12/7/2007	10	240	Complete	CT
8288-08	Concord, CA	FRO	IAFF	12/11/2007	12/13/2007	25	600	Complete	CT
8331-14	Mahwah, NJ	ERT:Ops	IAFF	12/26/2007	1/5/2008	19	304	Complete	DM
8331-15	Mahwah, NJ	ERT:Ops	IAFF	12/27/2007	1/5/2008	23	368	Complete	DM
8357-08	New York, NY	ERT:Ops	IAFF	1/10/2008	1/11/2008	14	224	Complete	KL
8357-09	New York, NY	ERT:Ops	IAFF	1/31/2008	2/1/2008	12	192	Complete	DM
8331-16	Mahwah, NJ	ERT:Ops	IAFF	3/3/2008	4/14/2008	20	320	Complete	DM
8331-17	Mahwah, NJ	ERT:Ops	IAFF	4/15/2008	4/19/2008	23	368	Complete	DM
8331-18	Mahwah, NJ	ERT:Ops	IAFF	4/16/2008	4/19/2008	23	368	Complete	DM
8331-19	Mahwah, NJ	ERT:Ops	IAFF	4/30/2008	5/1/2008	13	208	Complete	DM
8331-20	Mahwah, NJ	ERT:Ops	IAFF	5/12/2008	5/13/2008	21	336	Complete	DM
8331-26	Mahwah, NJ	ERT:Ops	IAFF	5/13/2008	5/17/2008	24	576	Complete	DH
8331-27	Mahwah, NJ	ERT:Ops	IAFF	5/13/2008	5/17/2008	22	176	Complete	DH
8331-28	Mahwah, NJ	ERT:Ops	IAFF	5/13/2008	5/17/2008	24	384	Complete	DH
Indirect Training			**27 Classes**			**561 Students**	**10,016 Contact Hours**		
8441-01	Bozeman, MT	FRO	IND	9/25/2007	4/30/2008	22	528	Complete	CT
8291-01	Winterhaven, FL	FRO	IND	10/1/2007	10/31/2007	14	336	Complete	KL
7197-04	Hilo, HI	FRO	IND	10/8/2007	12/31/2007	13	312	Complete	CT
8400-02	des Moines, IA	FRO	IND	1/7/2008	1/9/2008	11	264	Complete	CT
8470-01	Forest Hill, MD	Drug Labs	IND	1/10/2008	2/29/2008	15	120	Complete	CT
8454-02	Tucson, AZ	CSO	IND	1/14/2008	4/30/2008	28	672	Complete	KL
8475-01	Miami, FL	FRO	IND	1/30/2008	2/1/2008	25	600	Complete	KL
8475-02	Miami, FL	FRO	IND	2/4/2008	2/6/2008	27	648	Complete	KL
8474-01	Hilo, HI	FRO	IND	2/11/2008	2/15/2008	18	432	Complete	CT

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8349-04	Boston, MA	FRO	IND	2/12/2008	2/14/2008	58	1392	Complete	CT
8443-05	Broward County, FL	FRO	IND	2/27/2008	2/29/2008	16	384	Complete	KL
8486-01	Hayward, CA	FRO	IND	3/3/2008	3/5/2008	23	552	Complete	KL
8315-04	Miami Dade, FL	ERT:Ops	IND	4/3/2008	4/4/2008	25	400	Complete	KL
8493-01	Payson, AZ	FRO	IND	4/11/2008	4/13/2008	12	288	Complete	CT
8493-02	Payson, AZ	FRO	IND	5/17/2008	5/19/2008	16	384	Complete	CT
8478-02	Honolulu, HI		IND	5/19/2008	5/25/2008	16	256	Complete	CT
8478-03	Honolulu, HI		IND	5/19/2008	5/25/2008	20	320	Complete	CT
8478-04	Honolulu, HI		IND	5/19/2008	5/25/2008	20	320	Complete	CT
8404-01	Auburn, ME	Drug Labs	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-02	Auburn, ME	Drug Labs	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-03	Auburn, ME	Drug Labs	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-04	Auburn, ME	Drug Labs	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-05	Auburn, ME	ID	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-06	Auburn, ME	ID	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-07	Auburn, ME	ID	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8404-08	Auburn, ME	ID	IND	6/1/2008	7/1/2008	20	160	Complete	CT
8492-01	Gilroy, CA	FRO	IND	6/1/2008	6/1/2008	22	528	Complete	CT
Recruit Training Initiative			**169 Classes**		**4,060 Students**		**87,888 Contact Hours**		
8406-01	Glendale, AZ	FRO	RTI	10/1/2007	10/3/2007	15	360	Complete	KL
8443-01	Broward County, FL	FRO	RTI	10/1/2007	10/3/2007	24	576	Complete	KL
8406-02	Glendale, AZ	CSO	RTI	10/4/2007	10/5/2007	15	240	Complete	KL
8437-01	Globe, AZ	FRO	RTI	10/5/2007	10/7/2007	20	480	Complete	KL
8409-01	New York, NY	FRO	RTI	10/9/2007	10/10/2007	23	552	Complete	KL
8409-02	New York, NY	FRO	RTI	10/9/2007	10/10/2007	23	552	Complete	KL
8409-03	New York, NY	FRO	RTI	10/11/2007	10/12/2007	25	600	Complete	KL
8409-04	New York, NY	FRO	RTI	10/11/2007	10/12/2007	23	552	Complete	KL
8109-04	San Antonio, TX	FRO	RTI	10/15/2007	10/17/2007	23	552	Complete	KL
8409-05	New York, NY	FRO	RTI	10/15/2007	10/16/2007	24	576	Complete	KL
8409-06	New York, NY	FRO	RTI	10/15/2007	10/16/2007	24	576	Complete	KL
8409-07	New York, NY	FRO	RTI	10/15/2007	10/16/2007	23	552	Complete	KL
8409-08	New York, NY	FRO	RTI	10/15/2007	10/16/2007	24	576	Complete	KL
8409-09	New York, NY	FRO	RTI	10/15/2007	10/16/2007	46	1104	Complete	KL
8437-03	Globe, AZ	CSO	RTI	10/19/2007	10/21/2007	20	320	Complete	KL
8425-01	Fairfax, VA	FRO	RTI	10/22/2007	10/25/2007	26	624	Complete	KL
8418-01	Phoenix, AZ	FRO	RTI	10/26/2007	10/28/2007	22	528	Complete	KL
8423-01	Phoenix, AZ	FRO	RTI	10/29/2007	11/2/2007	40	960	Complete	KL
8450-01	West Palm Beach	FRO	RTI	10/29/2007	10/31/2007	35	840	Complete	KL
8423-02	Phoenix, AZ	CSO	RTI	11/1/2007	11/2/2007	40	640	Complete	KL
8418-02	Phoenix, AZ	CSO	RTI	11/2/2007	11/4/2007	24	576	Complete	KL
8432-01	College Station, TX	FRO	RTI	11/6/2007	11/7/2007	15	360	Complete	KL

IAFF Hazardous Materials / WMD Training Department

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CIN	Location	Program	Format	Start Date	End Date	Actual # Trainees	Actual # Contact Hours	Status	TC
8448-01	Milwaukee, WI	FRO	RTI	11/14/2007	11/16/2007	22	528	Complete	KL
8454-01	Tucson, AZ	FRO	RTI	11/19/2007	11/23/2007	13	312	Complete	KL
8430-01	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	23	368	Complete	DM
8430-02	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	23	368	Complete	DM
8430-03	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	25	400	Complete	DM
8430-04	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	23	368	Complete	DM
8430-05	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	21	336	Complete	DM
8430-06	New York, NY	ERT:Ops	RTI	11/26/2007	11/28/2007	24	384	Complete	DM
8443-02	Broward County, FL	FRO	RTI	11/26/2007	11/28/2007	17	408	Complete	KL
8430-07	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	25	400	Complete	DM
8430-08	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	22	352	Complete	DM
8430-09	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	20	320	Complete	DM
8430-10	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	22	352	Complete	DM
8430-11	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	23	368	Complete	DM
8430-12	New York, NY	ERT:Ops	RTI	11/27/2007	11/29/2007	23	368	Complete	DM
8453-01	Houston, TX	FRO	RTI	11/27/2007	11/29/2007	20	480	Complete	KL
8455-01	Jacksonville, FL	FRO	RTI	11/27/2007	11/29/2007	18	432	Complete	KL
8232-13	Houston, TX	ERT:Ops	RTI	11/30/2007	11/30/2007	20	160	Complete	DM
8232-14	Houston, TX	ERT:Ops	RTI	11/30/2007	11/30/2007	17	136	Complete	DM
8455-02	Jacksonville, FL	ERT:Ops	RTI	11/30/2007	11/30/2007	18	144	Complete	KL
8458-01	Glendale, AZ	FRO	RTI	12/3/2007	12/7/2007	20	480	Complete	KL
8458-02	Glendale, AZ	CSO	RTI	12/3/2007	12/7/2007	20	480	Complete	KL
8460-01	Philadelphia, PA	FRO	RTI	12/10/2007	12/12/2007	16	384	Complete	KL
8429-01	San Jose, CA	FRO	RTI	12/17/2007	12/21/2007	30	720	Complete	KL
8453-02	Houston, TX	FRO	RTI	12/18/2007	12/20/2007	40	960	Complete	KL
8232-16	Houston, TX	ERT:Ops	RTI	12/21/2007	12/21/2007	23	368	Complete	DM
8417-01	Rockville, MD	FRO	RTI	1/2/2008	1/4/2008	17	408	Complete	KL
8417-02	Rockville, MD	FRO	RTI	1/2/2008	1/4/2008	23	552	Complete	KL
8417-03	Rockville, MD	CSO	RTI	1/7/2008	1/8/2008	24	576	Complete	KL
8417-04	Rockville, MD	CSO	RTI	1/7/2008	1/8/2008	23	552	Complete	KL
8417-05	Rockville, MD	ERT:Ops	RTI	1/9/2008	1/9/2008	23	552	Complete	KL
8417-06	Rockville, MD	ERT:Ops	RTI	1/10/2008	1/10/2008	23	552	Complete	KL
8459-01	Goodyear, AZ	FRO	RTI	1/14/2008	1/16/2008	19	456	Complete	KL
8477-01	Fairfax, VA	FRO	RTI	1/16/2008	2/1/2008	23	552	Complete	KL
8459-02	Goodyear, AZ	CSO	RTI	1/17/2008	1/18/2008	19	304	Complete	KL
8443-03	Broward County, FL	FRO	RTI	1/19/2008	1/26/2008	38	912	Complete	KL
8467-01	Dallas, TX	FRO	RTI	1/23/2008	1/25/2008	25	600	Complete	KL
8467-02	Dallas, TX	FRO	RTI	1/23/2008	1/25/2008	25	600	Complete	KL
8440-01	Las Vegas, NV	FRO	RTI	1/28/2008	1/29/2008	16	384	Complete	KL
8440-03	Las Vegas, NV	FRO	RTI	1/28/2008	1/29/2008	24	576	Complete	KL
8440-02	Las Vegas, NV	CSO	RTI	1/30/2008	1/31/2008	16	256	Complete	DM

Training Report for NIOSH IAFF

Sessions ending between 10/1/2007 and 9/30/2008

tal of Classes: 274

CIN	Location	Program	Format	Start Date	End Date	# Trainees	Actual # Contact Hours	Status	TC
8440-04	Las Vegas, NV	CSO	RTI	1/30/2008	1/31/2008	23	552	Complete	KL
8083-11	Baltimore, MD	ERT:Ops	RTI	2/5/2008	2/6/2008	23	368	Complete	KL
8315-01	Miami Dade, FL	ERT:Ops	RTI	2/18/2008	2/22/2008	36	864	Complete	KL
8463-01	San Antonio, TX	FRO	RTI	2/19/2008	2/21/2008	20	480	Complete	KL
8463-02	San Antonio, TX	FRO	RTI	2/19/2008	2/21/2008	20	480	Complete	KL
8476-01	Brookline, MA	FRO	RTI	2/20/2008	2/22/2008	21	504	Complete	KL
8463-03	San Antonio, TX	ERT:Ops	RTI	2/22/2008	2/22/2008	20	480	Complete	KL
8463-04	San Antonio, TX	ERT:Ops	RTI	2/22/2008	2/22/2008	20	480	Complete	KL
8453-03	Houston, TX	FRO	RTI	2/25/2008	2/27/2008	24	576	Complete	KL
8453-04	Houston, TX	FRO	RTI	2/25/2008	2/27/2008	24	576	Complete	KL
8443-04	Broward County, FL	FRO	RTI	2/27/2008	2/29/2008	33	792	Complete	KL
8453-05	Houston, TX	ERT:Ops	RTI	2/28/2008	2/28/2008	24	576	Complete	KL
8453-06	Houston, TX	ERT:Ops	RTI	2/28/2008	2/28/2008	24	576	Complete	KL
8419-01	Scottsdale, AZ	FRO	RTI	3/1/2008	9/28/2008	22	528	Complete	KL
8437-04	Globe, AZ	FRO	RTI	3/1/2008	9/30/2008	32	768	Complete	KL
8437-05	Globe, AZ	CSO	RTI	3/1/2008	9/30/2008	33	792	Complete	KL
8424-01	Phoenix, AZ	FRO	RTI	3/3/2008	3/5/2008	23	552	Complete	KL
8424-02	Phoenix, AZ	FRO	RTI	3/3/2008	3/5/2008	23	552	Complete	KL
8433-01	Olympia, WA	FRO	RTI	3/3/2008	8/30/2008	23	552	Complete	KL
8424-03	Phoenix, AZ	CSO	RTI	3/6/2008	3/7/2008	23	368	Complete	KL
8424-04	Phoenix, AZ	CSO	RTI	3/6/2008	3/7/2008	23	368	Complete	KL
8484-01	New York, NY	FRO	RTI	3/18/2008	3/20/2008	23	552	Complete	KL
8484-02	New York, NY	FRO	RTI	3/18/2008	3/20/2008	22	528	Complete	KL
8484-03	New York, NY	FRO	RTI	3/18/2008	3/20/2008	21	504	Complete	KL
8484-04	New York, NY	FRO	RTI	3/18/2008	3/20/2008	22	528	Complete	KL
8484-05	New York, NY	FRO	RTI	3/21/2008	3/24/2008	26	624	Complete	KL
8484-06	New York, NY	FRO	RTI	3/21/2008	3/24/2008	24	576	Complete	KL
8484-07	New York, NY	FRO	RTI	3/21/2008	3/24/2008	25	600	Complete	KL
8484-08	New York, NY	FRO	RTI	3/21/2008	3/24/2008	23	552	Complete	KL
8484-09	New York, NY	FRO	RTI	3/25/2008	3/27/2008	26	624	Complete	KL
8484-10	New York, NY	FRO	RTI	3/25/2008	3/27/2008	22	528	Complete	KL
8484-11	New York, NY	FRO	RTI	3/25/2008	3/27/2008	25	600	Complete	KL
8484-12	New York, NY	FRO	RTI	3/25/2008	3/27/2008	23	552	Complete	KL
8418-03	Phoenix, AZ	FRO	RTI	3/28/2008	3/29/2008	19	456	Complete	KL
8455-03	Jacksonville, FL	FRO	RTI	3/28/2008	4/2/2008	11	264	Complete	CT
8315-03	Miami Dade, FL	FRO	RTI	3/31/2008	4/2/2008	35	840	Complete	KL
8455-04	Jacksonville, FL	ERT:Ops	RTI	4/3/2008	4/4/2008	11	264	Complete	CT
8418-04	Phoenix, AZ	CSO	RTI	4/4/2008	4/5/2008	19	456	Complete	KL
8468-01	Gilbert, AZ	FRO	RTI	4/7/2008	4/11/2008	33	792	Complete	KL
8468-02	Gilbert, AZ	CSO	RTI	4/7/2008	4/11/2008	29	696	Complete	KL
8484-13	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	22	528	Complete	KL

Training Report for NIOSH IAFF

Sessions ending between 10/1/2007 and 9/30/2008

tal of Classes: 274

CIN	Location	Program	Format	Start Date	End Date	# Trainees	Actual # Contact Hours	Status	TC
8484-14	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	21	336	Complete	KL
8484-15	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	23	368	Complete	KL
8484-16	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	22	352	Complete	KL
8484-17	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	26	416	Complete	KL
8484-18	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	22	352	Complete	KL
8484-19	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	22	528	Complete	KL
8484-20	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	23	368	Complete	KL
8484-21	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	25	400	Complete	KL
8484-22	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	22	352	Complete	KL
8484-23	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	25	400	Complete	KL
8484-24	New York, NY	ERT:Ops	RTI	4/28/2008	5/2/2008	25	400	Complete	KL
8315-05	Miami Dade, FL	FRO	RTI	5/12/2008	5/14/2008	25	600	Complete	KL
8315-06	Miami Dade, FL	FRO	RTI	5/12/2008	5/14/2008	25	600	Complete	KL
8315-09	Miami Dade, FL	ERT:Ops	RTI	5/15/2008	5/16/2008	25	600	Complete	KL
8315-10	Miami Dade, FL	ERT:Ops	RTI	5/15/2008	5/16/2008	25	400	Complete	KL
8443-06	Broward County, FL	FRO	RTI	5/17/2008	5/24/2008	28	672	Complete	KL
8443-07	Broward County, FL	FRO	RTI	5/17/2008	5/24/2008	39	936	Complete	KL
8315-07	Miami Dade, FL	CSO	RTI	5/19/2008	5/21/2008	25	600	Complete	KL
8315-08	Miami Dade, FL	CSO	RTI	5/19/2008	5/21/2008	24	576	Complete	KL
8504-01	Phoenix, AZ	FRO	RTI	5/19/2008	5/21/2008	35	840	Complete	KL
8504-02	Phoenix, AZ	FRO	RTI	5/19/2008	5/21/2008	35	840	Complete	KL
8504-03	Phoenix, AZ	CSO	RTI	5/22/2008	5/23/2008	35	840	Complete	KL
8504-04	Phoenix, AZ	CSO	RTI	5/22/2008	5/23/2008	20	480	Complete	KL
8454-03	Tucson, AZ	CSO	RTI	5/27/2008	5/29/2008	40	960	Complete	KL
8443-08	Broward County, FL	FRO	RTI	6/7/2008	6/14/2008	23	552	Complete	KL
8443-09	Broward County, FL	FRO	RTI	6/9/2008	6/11/2008	28	672	Complete	KL
8463-05	San Antonio, TX	FRO	RTI	6/9/2008	6/11/2008	27	648	Complete	KL
8463-06	San Antonio, TX	FRO	RTI	6/9/2008	6/11/2008	18	432	Complete	KL
8467-03	Dallas, TX	FRO	RTI	6/9/2008	6/11/2008	25	600	Complete	KL
8463-07	San Antonio, TX	ERT:Ops	RTI	6/12/2008	6/12/2008	27	216	Complete	KL
8463-08	San Antonio, TX	ERT:Ops	RTI	6/12/2008	6/12/2008	18	144	Complete	KL
8455-05	Jacksonville, FL	FRO	RTI	7/11/2008	7/16/2008	24	576	Complete	KL
8425-02	Fairfax, VA	FRO	RTI	7/14/2008	7/16/2008	36	864	Complete	KL
8453-07	Houston, TX	FRO	RTI	7/14/2008	7/17/2008	28	672	Complete	KL
8453-08	Houston, TX	FRO	RTI	7/14/2008	7/17/2008	26	624	Complete	KL
8467-04	Dallas, TX	FRO	RTI	7/15/2008	7/17/2008	24	576	Complete	KL
8417-07	Rockville, MD	FRO	RTI	7/16/2008	7/18/2008	28	672	Complete	KL
8417-08	Rockville, MD	FRO	RTI	7/16/2008	7/18/2008	22	528	Complete	KL
8425-04	Fairfax, VA	FRO	RTI	7/17/2008	7/18/2008	36	0	Complete	KL
8455-06	Jacksonville, FL	ERT:Ops	RTI	7/17/2008	7/18/2008	24	384	Complete	KL
8417-09	Rockville, MD	CSO	RTI	7/21/2008	7/22/2008	26	0	Complete	KL

Training Report for NIOSH IAFF

Sessions ending between 10/1/2007 and 9/30/2008

tal of Classes: 274

CIN	Location	Program	Format	Start Date	End Date	# Trainees	Actual # Contact Hours	Status	TC
8417-10	Rockville, MD	CSO	RTI	7/21/2008	7/22/2008	15	360	Complete	KL
8417-11	Rockville, MD	ERT:Ops	RTI	7/23/2008	7/24/2008	26	416	Complete	KL
8417-12	Rockville, MD	ERT:Ops	RTI	7/23/2008	7/24/2008	23	368	Complete	KL
8520-01	New York, NY	FRO	RTI	8/5/2008	8/7/2008	25	600	Complete	KL
8520-02	New York, NY	FRO	RTI	8/5/2008	8/7/2008	24	576	Complete	KL
8520-03	New York, NY	FRO	RTI	8/5/2008	8/7/2008	27	648	Complete	KL
8520-04	New York, NY	FRO	RTI	8/8/2008	8/11/2008	25	600	Complete	KL
8520-05	New York, NY	FRO	RTI	8/8/2008	8/11/2008	25	600	Complete	KL
8520-06	New York, NY	FRO	RTI	8/8/2008	8/11/2008	25	600	Complete	KL
8520-07	New York, NY	FRO	RTI	8/11/2008	8/12/2008	25	600	Complete	KL
8520-08	New York, NY	FRO	RTI	8/11/2008	8/12/2008	24	576	Complete	KL
8520-09	New York, NY	FRO	RTI	8/11/2008	8/12/2008	26	624	Complete	KL
8520-10	New York, NY	FRO	RTI	8/12/2008	8/14/2008	24	576	Complete	KL
8520-11	New York, NY	FRO	RTI	8/12/2008	8/14/2008	23	552	Complete	KL
8520-12	New York, NY	FRO	RTI	8/12/2008	8/14/2008	25	600	Complete	KL
8544-01	Houston, TX	FRO	RTI	9/8/2008	9/10/2008	22	528	Complete	DH
8544-02	Houston, TX	FRO	RTI	9/8/2008	9/10/2008	21	504	Complete	DH
8418-05	Phoenix, AZ	FRO	RTI	9/19/2008	9/21/2008	13	312	Complete	KL
8418-06	Phoenix, AZ	FRO	RTI	9/19/2008	9/21/2008	15	360	Complete	KL
8526-01	San Jose, CA	FRO	RTI	9/22/2008	9/26/2008	29	696	Complete	KL
8526-02	San Jose, CA	CSO	RTI	9/22/2008	9/26/2008	29	696	Complete	KL
8418-07	Phoenix, AZ	CSO	RTI	9/26/2008	9/28/2008	13	312	Complete	KL
8418-08	Phoenix, AZ	CSO	RTI	9/26/2008	9/28/2008	14	336	Complete	KL
8504-05	Phoenix, AZ	FRO	RTI	9/26/2008	9/28/2008	30	720	Complete	KL
State-Wide Training			**11 Classes**			**409 Students**	**6,544 Contact Hours**		
8372-14	Tucson, AZ	ERT:Ops	SWT	10/22/2007	11/6/2007	35	560	Complete	TH
8372-16	Tucson, AZ	ERT:Ops	SWT	11/5/2007	11/14/2007	36	576	Complete	TH
8372-17	Tucson, AZ	ERT:Ops	SWT	11/7/2007	11/15/2007	33	528	Complete	TH
8372-18	Tucson, AZ	ERT:Ops	SWT	11/19/2007	12/4/2007	33	528	Complete	TH
8372-19	Tucson, AZ	ERT:Ops	SWT	11/20/2007	11/27/2007	35	560	Complete	TH
8372-20	Tucson, AZ	ERT:Ops	SWT	11/21/2007	12/6/2007	36	576	Complete	DM
8372-21	Tucson, AZ	ERT:Ops	SWT	11/26/2007	12/11/2007	38	608	Complete	TH
8372-22	Tucson, AZ	ERT:Ops	SWT	11/28/2007	12/13/2007	38	608	Complete	TH
8372-23	Tucson, AZ	ERT:Ops	SWT	11/29/2007	12/5/2007	34	544	Complete	TH
8372-24	Tucson, AZ	ERT:Ops	SWT	12/10/2007	12/17/2007	47	752	Complete	TH
8372-25	Tucson, AZ	ERT:Ops	SWT	12/12/2007	12/18/2007	44	704	Complete	DM
Total Training:			**274 Classes**			**6,160 Students**	**121,600 Contact Hours**		

APPENDIX B

IDC Program Agendas

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2008

Tuesday, November 11th, 2008 (Veteran's Day)		
8:00 am to 12:00 pm	New Instructor Orientation	**Colleton**
1:00 pm to 5:00 pm	DOT TtT Program Working Group	**Colleton**
Wednesday, November 12th, 2008		
7:00 am to 8:00 am	Registration	
7:00 am to 8:00 am	Breakfast	**Magnolia**
8:00 am to 9:00 am	General President Opening Remarks	**Willow**
9:00 am to 10:00 am	HazMat/WMD Department Update	**Willow**
10:00 am to 10:15 am	Break	**Magnolia**
10:15 am to 11:15 am	**Presentation:** FRO Update (Spalla, Royall, Hergenreter)	**Willow**
11:15 am to 12:00 pm	**Presentation:** ERT:Ops Update (Valerioti, Mussorfiti)	**Willow**
12:00 pm to 1:15 pm	Lunch	**Magnolia**
1:15 pm to 2:30 pm	**Presentation:** IRC Working Group	**Willow**
1:15 pm to 2:30 pm	**Presentation:** Overview of Containers (Bill Hand)	**2H Suite**
1:15 pm to 2:30 pm	**Presentation:** Technician Working Group	**Jenkins/King Charles**
1:15 pm to 2:30 pm	**Presentation:** CSO/CSR Working Group	**2L Suite**
2:30 pm to 2:45 pm	Break	**Magnolia**
2:45 pm to 3:45 pm	**Presentation:** DOT Update (Mark Razny, DOT)	**Willow**
3:45 pm to 4:00 pm	Instructor Award of Excellence / End of Day Wrap-up	**Willow**
4:00 pm to 6:00 pm	Instructor Resource Center Open	**2H Suite**

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2008

Thursday, November 13th, 2008		
7:00 am to 8:00 am	Breakfast	**Magnolia**
8:00 am to 8:30 am	**Welcome**	**Willow**
8:30 am to 9:30 am	**Presentation:** Training for the Next Generation (Chief Bobby Halton)	**Willow**
9:30 am to 10:30 am	**Presentation:** Rethinking PowerPoint (Bruce Lippy)	**Willow**
10:30 am to 10:45 am	Break	**Magnolia**
10:45 am to 12:00 pm	**Presentation:** Frontline Safety Update (Blohm, Del Re)	**Willow**
10:45 am to 12:00 pm	PEP Instructors (See Department Agenda)	**2J Suite**
10:45 am to 12:00 pm	PFT Instructors (See Department Agenda)	**2H Suite**
12:00 pm to 1:15 pm	Lunch	**Magnolia**
1:15 pm to 6:00 pm	PEP Instructors (See Department Agenda)	**2J Suite**
1:15 pm to 6:00 pm	PFT Instructors (See Department Agenda)	**2H Suite**
1:15 pm to 2:30 pm	**Presentation:** CAMEO (Keith Mundy, ICWUC)	**Willow**
1:15 pm to 2:30 pm	**Presentation:** DOT HazMat Focus Group (Bruce Lippy)	**Jenkins/King Charles**
1:15 pm to 2:30 pm	**Presentation:** Targeting Those Training Dollars (Jennifer Stewart)	**2L Suite**
2:30 pm to 2:45 pm	Break	**Magnolia**
2:45 pm to 3:45 pm	**Presentation:** Evaluation Report (Harold Stolovitch)	**Willow**
3:45 pm to 4:00 pm	End of Day Wrap-up / Q&A / Evaluations	**Willow**
6:00 pm to 8:00 pm	Evening Reception	**Riviera**

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2008

Friday, November 14th, 2008		
7:00 am to 8:00 am	Breakfast for PEP, PFT	Live Oak
8:00 am to 9:00 am	Breakfast for Advisory Board Members	Gadsden
8:00 am to 4:00 pm	Advisory Board Meeting	Hampton
8:00 am to 4:00 pm	PEP Instructors (See Department Agenda)	2J Suite
8:00 am to 4:00 pm	PFT Instructors (See Department Agenda)	2H Suite
12:00 pm to 1:00 pm	Lunch for PEP, PFT	Live Oak
12:00 pm to 1:00 pm	Lunch for Advisory Board Members	Gadsden
2:30 pm to 2:45 pm	Break	Live Oak

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2009

Tuesday, December 1, 2009		
7:00 am to 8:00 am	Registration	Trail Drivers Room 3rd Floor
7:00 am to 8:00 am	Breakfast	Robert Johnson Ballroom Lobby
8:00 am to 9:00 am	**Opening Session:** HazMat/WMD Department Update	Crystal Ballroom 2nd Floor
9:00 am to 10:15 am	**General Session Presentation:** IAFF Training and Instructor Support Presented by Jim Ridley & Harold Stolovitch	Crystal Ballroom 2nd Floor
10:15 am to 10:30 am	Break	Second Floor Hallway
10:30 am to 12:00 pm	**Breakout Group:** Structured Feedback Training Presented by Mentor Observers (Red Group)	Yellow Rose 2nd Floor
10:30 am to 12:00 pm	**Breakout Group:** Structured Feedback Training Presented by Mentor Observers (Yellow Group)	Bluebonnet 2nd Floor
10:30 am to 12:00 pm	**Breakout Group:** Structured Feedback Training Presented by Mentor Observers (Blue Group)	Magnolia 2nd Floor
10:30 am to 12:00 pm	**Breakout Group:** Structured Feedback Training Presented by Mentor Observers (Green Group)	Alamo Room 3rd Floor
12:00 pm to 1:15 pm	Lunch	Robert Johnson Ballroom Lobby
1:15 pm to 2:45 pm	**General Session Presentation:** Panel Discussion Presented by HazMat/WMD Training Department Staff	Crystal Ballroom 2nd Floor
2:45 pm to 3:00 pm	Break	Second Floor Hallway
3:00 pm to 3:30 pm	**General Session Presentation:** Canadian Training Update Instructor Award of Excellence Q&A	Crystal Ballroom 2nd Floor
3:30 pm to 4:30 pm	**Canadian HazMat/CBRN Training Program Meeting:** Canadian and U.S. Mentor Instructor to Attend	Yellow Rose 2nd Floor

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2009

Wednesday, December 2, 2009		
7:30 am to 8:30 am	Breakfast	Robert Johnson Ballroom Lobby
8:30 am to 8:45 am	**Welcome To San Antonio, Texas** Christopher Steele, President, IAFF Local 624	Crystal Ballroom 2nd Floor
8:45 am to 10:00 am	**Opening Remarks** **General President Harold A. Schaitberger**	Crystal Ballroom 2nd Floor
10:00 am to 10:30 am	Break	Second Floor Hallway
10:30 am to 12:00 pm	**General Session Presentation:** "If I Know So Much....." - Harold Stolovitch	Crystal Ballroom 2nd Floor
12:00 pm to 1:30 pm	**Lunch** FirePac (Richie Blohm)	Robert Johnson Ballroom Lobby
1:30 pm to 2:45 pm	**Breakout Group:** "How Adults Process Information and What Inhibits or Enhances that Process" - Judy Jarrell	Yellow Rose 2nd Floor
1:30 pm to 2:45 pm	**Breakout Group:** "Got the Concept" - Harold Stolovitch	Bluebonnet 2nd Floor
1:30 pm to 2:45 pm	**Breakout Group:** IAFF Representatives on Federal Peer Review Panels	Magnolia 2nd Floor
1:30 pm to 2:45 pm	**Breakout Group:** Overview of PEP, PFT, HazMat/WMD Programs	Alamo Room 3rd Floor
2:45 pm to 3:00 pm	Break	Second Floor Hallway
3:00 pm to 4:15 pm	**Breakout Group:** "How Adults Process Information and What Inhibits or Enhances that Process" - Judy Jarrell	Yellow Rose 2nd Floor
3:00 pm to 4:15 pm	**Breakout Group:** "Got the Concept" - Harold Stolovitch	Bluebonnet 2nd Floor
3:00 pm to 4:15 pm	**Breakout Group:** IAFF Representatives on Federal Peer Review Panels	Magnolia 2nd Floor
3:00 pm to 4:15 pm	**Breakout Group:** Overview of PEP, PFT, *HazMat/WMD Programs*	Alamo Room 3rd Floor
4:15 pm to 4:30 pm	**General Session Presentation:** End of Day Wrap-up and Q&A	Crystal Ballroom 2nd Floor
6:00 pm to 8:00 pm	Evening Reception	Gunter Terrace 2nd Floor

International Association of Fire Fighters

AGENDA

Instructor Development Conference 2009

Thursday, December 3, 2009		
7:00 am to 8:00 am	Breakfast for Advisory Board Members, PEP, PFT, TtT	Crystal Ballroom 2nd Floor
8:00 am to 4:00 pm	Advisory Board Meeting	Ludwigs 2nd Floor
8:00 am to 5:00 pm	HazMat/WMD TtT (See Department Agenda)	Yellow Rose 2nd Floor
8:00 am to 5:00 pm	PEP Instructors (See Department Agenda)	Bluebonnet 2nd Floor
8:00 am to 5:00 pm	PFT Instructors (See Department Agenda)	Magnolia 2nd Floor
12:00 pm to 1:00 pm	Lunch for Advisory Board Members, PEP, PFT, TtT	Crystal Ballroom 2nd Floor
2:30 pm to 2:45 pm	Break	Second Floor Hallway

Friday, December 4, 2009		
7:00 am to 8:00 am	Breakfast for PEP, PFT, TtT	Crystal Ballroom 2nd Floor
8:00 am to 5:00 pm	HazMat/WMD TtT (See Department Agenda)	Yellow Rose 2nd Floor
8:00 am to 5:00 pm	HazMat/WMD TtT (See Department Agenda)	Baker Room 3rd Floor
8:00 am to 5:00 pm	HazMat/WMD TtT (See Department Agenda)	Alamo Room 3rd Floor
8:00 am to 5:00 pm	PEP Instructors (See Department Agenda)	Bluebonnet 2nd Floor
8:00 am to 5:00 pm	PFT Instructors (See Department Agenda)	Magnolia 2nd Floor
12:00 pm to 1:00 pm	Lunch for PEP, PFT, TtT	Crystal Ballroom 2nd Floor
2:30 pm to 2:45 pm	Break	Second Floor Hallway

International Association of Fire Fighters

Instructor Development Conference 2010
HazMat/WMD Training and HazMat/CBRNE Training Departments

7:00 a.m. - 8:30 a.m.	**Breakfast**	Regency 4-6
7:30 a.m. - 8:30 a.m.	**Registration**	Oak Tree
8:30 a.m. - 8:45 a.m.	**Welcome** Patrick Morrison, Assistant to the General President	Regency Main
8:45 a.m. - 9:15 a.m.	**Opening Remarks** **Harold A. Schaitberger, IAFF General President**	Regency Main
9:15 a.m. - 10:00 a.m.	**Keynote Address:** *How to Give A Butt Kicking Presentation,* Dr. Kimberly Alyn, CEO, Fire Presentations	Regency Main
10:00 a.m. - 10:15 a.m.	**Break**	Regency Foyer
10:15 a.m. - 10:45 a.m.	**HazMat/WMD Overview** James Ridley, Director, HazMat/WMD Training Dept.	Regency Main
10:45 a.m. - 11:15 a.m.	**Partnership Education Program Overview** Kevin Rader, Director, Education and Human Relations Dept.	Regency Main
11:15 a.m. – 11:50 p.m.	**Health and Safety Overview** James Brinkley, Director, Health and Safety Dept.	Regency Main
11:50 a.m. – 12:00 p.m.	**Communications and Media Overview** Jane Blume, Director, Communication and Media	Regency Main
12:00 p.m. - 1:30 p.m.	**Lunch**	Regency 4-6
1:30 p.m. - 3:00 p.m.	**Breakout:** Chemical Process Industries Overview	Cypress 1 & 2
1:30 p.m. - 3:00 p.m.	**Breakout:** Pesticides Working Group	Cypress 3
1:30 p.m. - 3:00 p.m.	**Breakout:** Canadian HazMat/CBRNE Updates	Big Sur 2
3:00 p.m. - 3:15 p.m.	**Break**	Regency Foyer
3:15 p.m. - 4:45 p.m.	**Breakout:** Chemical Process Industries Overview	Cypress 1 & 2
3:15 p.m. - 4:45 p.m.	**Breakout:** Pesticides Working Group	Cypress 3
3:15 p.m. - 4:45 p.m.	**Breakout:** Canadian HazMat/CBRNE Updates	Big Sur 2
4:45 p.m. - 5:00 p.m.	**End of Day Wrap-Up**	Regency Main
6:00 p.m. - 8:00 p.m.	**Reception**	Monterey Grand Ballroom

International Association of Fire Fighters

Instructor Development Conference 2010
HazMat/WMD Training and HazMat/CBRNE Training Departments

7:00 a.m. - 8:30 a.m.	Breakfast	Regency 4-6
8:30 a.m. - 9:30 a.m.	**Keynote Address:** *Trainers Work Way Too Hard, Get Em Involved*, Donna Forgy, President, ProSkills, Inc.	Regency Main
9:30 a.m. - 9:50 a.m.	HazMat/WMD Training Department Update Thomas Hill, Deputy Director	Regency Main
9:50 a.m. - 10:20 a.m.	HazMat/WMD/CBRNE Training Coordinators Update	Regency Main
10:20 a.m. - 10:35 a.m.	**Break**	Regency Foyer
10:35 a.m. - 11:00 a.m.	Department Curricula Development and Finance Updates	Regency Main
11:00 a.m. - 12:00 p.m.	**Presentation:** Pro Board: Frederick Piechota Jr. Kevin O'Connell	Regency Main
12:00 p.m. - 1:30 p.m.	**Lunch**	Regency 4-6
1:30 p.m. - 3:00 p.m.	**Breakout:** Pro Board – U.S. and Canadian First Responder Operations	Cypress 1 & 2
1:30 p.m. - 3:00 p.m.	**Breakout:** Technician Working Group	Big Sur 2
1:30 p.m. - 3:00 p.m.	**Breakout:** Confined Space Working Group	Cypress 3
3:00 p.m. - 3:15 p.m.	**Break**	Big Sur Foyer
3:15 p.m. - 4:30 p.m.	**Breakout:** Pro Board – U.S. and Canadian First Responder Operations	Cypress 1 & 2
3:15 p.m. - 4:30 p.m.	**Breakout:** Technician Working Group	Big Sur 2
3:15 p.m. - 4:30 p.m.	**Breakout:** Confined Space Working Group	Cypress 3
4:30 p.m. - 5:00 p.m.	**End of Day Wrap-up/IDC Evaluations**	Regency 4-6

International Association of Fire Fighters

Instructor Development Conference 2010
HazMat/WMD Training Department

7:00 a.m. - 8:00 a.m.	**Breakfast**	Regency 4-6
8:00 a.m. - 10:00 a.m.	**HazMat/WMD Level III Evaluations** Bruce Lippy, Ph.D., CIH, CSP, The Lippy Group, LLC	Cypress I
10:00 a.m. - 10:15 a.m.	**Break**	Big Sur Foyer
10:15 a.m. - 12:00 p.m.	**HazMat/WMD Level III Evaluations** Bruce Lippy, Ph.D., CIH, CSP, The Lippy Group, LLC	Cypress I
12:00 p.m. - 1:30 p.m.	**Lunch**	Regency 4-6

International Association of Fire Fighters
Instructor Development Conference 2011
HazMat/WMD and CBRNE Training Departments

Tuesday, November 29, 2011		
7:00 a.m. – 8:30 a.m.	**Breakfast**	Salons F-G
7:30 a.m. – 8:30 a.m.	**Registration**	Banquet Foyer D-G
8:30 a.m. – 8:45 a.m.	**Welcome** Patrick Morrison, Assistant to the General President Rich Duffy, Assistant to the General President	Salons A-E
8:45 a.m. – 9:15 a.m.	**Opening Remarks** **Harold A. Schaitberger, IAFF General President**	Salons A-E
9:15 a.m. – 10:30 a.m.	**Keynote Address:** The Exceptional Presenter Tim Koegel, The Presentation Academy, LLC Introduction by: Patrick Morrison, AGP	Salons A-E
10:30 a.m. – 10:45 a.m.	**Break**	Banquet Foyer D-G
10:45 a.m. – 11:05 a.m.	**CBRNE/HazMat/WMD Overview** Scott Marks, Assistant to the General President James Ridley, Director, HazMat/WMD Training Dept	Salons A-E
11:05 a.m. – 11:25 a.m.	**LMS Update** Sandy Henderson & Hongxia Ma, Instructional Designers Introductions by: Kevin Rader, Director, Education & Human Relations	Salons A-E
11:25 a.m. – 11:45 a.m.	**Health and Safety Overview** James Brinkley, Director, Health & Safety Dept	Salons A-E
11:45 a.m. – 12:00 p.m.	**Concur Overview** Presenters: Carmen Gloukhoff, Director, Database Admin and Dave Bernard, Director, Network Admin & IT Support Introduction by: James Ridley, Director, HazMat/WMD	Salons A-E
12:00 p.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 5:30 p.m.	**Advisory Board Meeting**	Executive Conference Room
1:30 p.m. – 3:00 p.m.	**Breakout:** IAFF Concur Training	Mangrove
1:30 p.m. – 3:00 p.m.	**Breakout:** IAFF Concur Training	Mandalay
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:45 p.m.	**Breakout:** IAFF Concur Training	Mangrove
3:15 p.m. – 4:45 p.m.	**Breakout:** IAFF Concur Training	Mandalay
6:00 p.m. – 8:00 p.m.	**Reception**	Flamingo/Sandpiper Deck

International Association of Fire Fighters
Instructor Development Conference 2011
HazMat/WMD and CBRNE Training Departments

Wednesday, November 30, 2011		
7:00 a.m. – 8:30 a.m.	Breakfast	Salons F-G
8:30 a.m. – 10:00 a.m.	**Keynote Address:** Curricula Matters Presenter: Lisa deBos, IAFF Instructional Designer Post Secondary Educational Opportunities Presenter: Stephanie Serven, Higher Education Program Coordinator Introductions by: Kevin Rader, Director, Education & Human Relations	Salons A-E
10:00 a.m. – 10:15 a.m.	**Break**	Banquet Foyer D-G
10:15 a.m. – 12:00 p.m.	HazMat/WMD Training Department Updates Presenter: Jim Ridley, Director, HazMat/WMD HazMat/WMD/CBRNE Training, Technology & Curricula Development Coordinators Update	Salons A-E
12:00 p.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 3:00 p.m.	**Breakout:** Radiation Safety Pilot	Mangrove
1:30 p.m. – 3:00 p.m.	**Breakout:** Learning Management System Development	Executive Conference Room
1:30 p.m. – 3:00 p.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
1:30 p.m. – 3:00 p.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:30 p.m.	**Breakout:** Radiation Safety Pilot	Mangrove
3:15 p.m. – 4:30 p.m.	**Breakout:** Learning Management System Development	Executive Conference Room
3:15 p.m. – 4:30 p.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
3:15 p.m. – 4:30 p.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
4:30 p.m. – 5:00 p.m.	**End of Day Wrap-up**	Salons A-E

International Association of Fire Fighters
Instructor Development Conference 2011
HazMat/WMD and CBRNE Training Departments

Thursday, December 1, 2011		
7:00 a.m. – 8:30 a.m.	**Breakfast**	Salons F-G
8:30 a.m. – 9:30 a.m.	**Keynote Address:** Assistance to Firefighters Grants Update Presenter: Cathie Patterson, Assistance to Firefighters Grant (FEMA) Introduction by: Richard Duffy, AGP	Salons A-E
9:30 a.m. – 10:30 a.m.	**Breakout:** Radiation Safety Pilot	Mangrove
9:30 a.m. – 10:30 a.m.	**Breakout:** Learning Management System Development	Executive Conference Room
9:30 a.m. – 10:30 a.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
9:30 a.m. – 10:30 a.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
10:30 a.m. – 10:45 a.m.	**Break**	Banquet Foyer D-G
10:45 a.m. – 12:15 p.m.	**Breakout:** Radiation Safety Pilot	Mangrove
10:45 a.m. – 12:15 p.m.	**Breakout:** Learning Management System Development	Executive Conference Room
10:45 a.m. – 12:15 p.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
10:45 a.m. – 12:15 p.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
12:15 p.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 3:00 p.m.	**Breakout:** Radiation Safety Pilot	Mangrove
1:30 p.m. – 3:00 p.m.	**Breakout:** Learning Management System Development	Executive Conference Room
1:30 p.m. – 3:00 p.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
1:30 p.m. – 3:00 p.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:30 p.m.	**Breakout:** Radiation Safety Pilot	Mangrove
3:15 p.m. – 4:30 p.m.	**Breakout:** Learning Management System Development	Executive Conference Room
3:15 p.m. – 4:30 p.m.	**Breakout:** Pro Broad Test Development/First Responder Operations Development	Mandalay
3:15 p.m. – 4:30 p.m.	**Breakout:** New ERT:Ops Train-the-Trainer	Citrus
4:30- p.m. – 5:00 p.m.	**End of Conference Wrap-Up**	Salons A-E

International Association of Fire Fighters
Instructor Development Conference 2012
HazMat/WMD and CBRNE Training Departments

Tuesday, November 27, 2012		
7:00 a.m. – 8:30 a.m.	**Breakfast**	Salons F-G
7:30 a.m. – 9:00 a.m.	**Registration**	Banquet Foyer D-G
9:00 a.m. – 9:05 a.m.	**Welcome** Patrick Morrison, Assistant to the General President Rich Duffy, Assistant to the General President	Salons A-E
9:05 a.m. – 9:30 a.m.	**Opening Remarks** **Harold A. Schaitberger, IAFF General President** Introduction by: Patrick Morrison, Assistant to the General President	Salons A-E
9:30 a.m. – 10:30 a.m.	**HazMat/WMD Overview** James Ridley, Director, HazMat/WMD Training Dept. **Partnership Education Program Overview** Patrick Morrison, Education and Human Relations Dept. **Health and Safety Overview** James Brinkley, Director, Health and Safety Dept.	Salons A-E
10:30 a.m. – 10:45 a.m.	**Break**	Banquet Foyer D-G
10:45 a.m. – 11:45 a.m.	**Peer Review Update** Rich Duffy, Assistant to the General President, Health and Safety **AFG/SAFER Overview** Cathie Patterson, Assistance to Firefighters Grant (FEMA)	Salons A-E
11:45 a.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 5:30 p.m.	**Advisory Board Meeting**	Executive Conference Room/Mandalay
1:30 p.m. – 3:00 p.m.	**Breakout: ERT: Ops-Customized (C) 8-hr refresher Train-the-Trainer** Facilitators: Ignacio Ayala and Dan Fonseca Facilitators: Anthony Wichman and Steve Storment	Salon A Salon B
1:30 p.m. – 3:00 p.m.	**Breakout: Canadian Curricula Development** Facilitators: Bruce White and Vilma Pérez-Atwood	Citrus
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:45 p.m.	**Breakout: New ERT: Ops-C (8hr) Train-the-Trainer** (Continued)	Salon A Salon B
3:15 p.m. – 4:45 p.m.	**Breakout: Canadian Curricula Development** (Continued)	Citrus
6:00 p.m. – 8:00 p.m.	**Reception**	Flamingo/Sandpiper Deck

International Association of Fire Fighters
Instructor Development Conference 2012
HazMat/WMD and CBRNE Training Departments

Tuesday, November 27, 2012		
7:00 a.m. – 8:30 a.m.	**Breakfast**	Salons F-G
7:30 a.m. – 9:00 a.m.	**Registration**	Banquet Foyer D-G
9:00 a.m. – 9:05 a.m.	**Welcome** Patrick Morrison, Assistant to the General President Rich Duffy, Assistant to the General President	Salons A-E
9:05 a.m. – 9:30 a.m.	**Opening Remarks** **Harold A. Schaitberger, IAFF General President** Introduction by: Patrick Morrison, Assistant to the General President	Salons A-E
9:30 a.m. – 10:30 a.m.	**HazMat/WMD Overview** James Ridley, Director, HazMat/WMD Training Dept. **Partnership Education Program Overview** Patrick Morrison, Education and Human Relations Dept. **Health and Safety Overview** James Brinkley, Director, Health and Safety Dept.	Salons A-E
10:30 a.m. – 10:45 a.m.	**Break**	Banquet Foyer D-G
10:45 a.m. – 11:45 a.m.	**Peer Review Update** Rich Duffy, Assistant to the General President, Health and Safety **AFG/SAFER Overview** Cathie Patterson, Assistance to Firefighters Grant (FEMA)	Salons A-E
11:45 a.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 5:30 p.m.	**Advisory Board Meeting**	Executive Conference Room/Mandalay
1:30 p.m. – 3:00 p.m.	**Breakout: ERT: Ops-Customized (C) 8-hr refresher Train-the-Trainer** Facilitators: Ignacio Ayala and Dan Fonseca Facilitators: Anthony Wichman and Steve Storment	Salon A Salon B
1:30 p.m. – 3:00 p.m.	**Breakout: Canadian Curricula Development** Facilitators: Bruce White and Vilma Pérez-Atwood	Citrus
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:45 p.m.	**Breakout: New ERT: Ops-C (8hr) Train-the-Trainer** (Continued)	Salon A Salon B
3:15 p.m. – 4:45 p.m.	**Breakout: Canadian Curricula Development** (Continued)	Citrus
6:00 p.m. – 8:00 p.m.	**Reception**	Flamingo/Sandpiper Deck

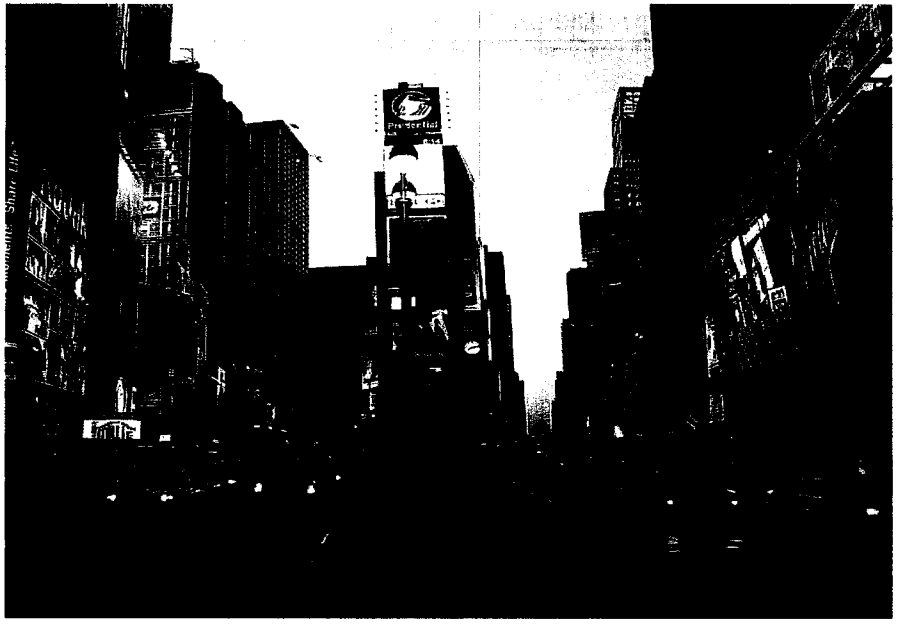
International Association of Fire Fighters
Instructor Development Conference 2012
HazMat/WMD and CBRNE Training Departments

Wednesday, November 28, 2012		
7:00 a.m. – 8:30 a.m.	**Breakfast**	Salons F-G
8:30 a.m. – 10:15 a.m.	**CBRNE/HazMat /WMD Update** Scott Marks, Assistant to the General President, Canadian Operations James Ridley, Director, HazMat/WMD Training Department HazMat/WMD/CBRNE Training, Logistics, Finance and Curricula Development Coordinators' Updates	Salons D-E
10:15 a.m. – 10:30 a.m.	**Break**	Banquet Foyer D-G
10:30 a.m. – 12:00 p.m.	Pro-Board Certification Program Overview and Proctor Training	Salons D-E
12:00 p.m. – 1:30 p.m.	**Lunch**	Salons F-G
1:30 p.m. – 3:00 p.m.	**Breakout:** First Responder Operations Development Facilitators: Lane Spalla, Conn Hayden and Bruce White	Salon A
1:30 p.m. – 3:00 p.m.	**Breakout:** ERT: Ops 16-Hour Train-the-Trainer Facilitators: Richard Blohm and Al Valerioti	Mangrove
1:30 p.m. – 3:00 p.m.	**Breakout:** Confined Space Operations/ Confined Space Rescue Development Facilitators: Jeff Young and Sean Hernandez	Citrus
1:30 p.m. – 3:00 p.m.	**Breakout:** HazMat Technician Development Facilitators: Steve Hergenreter and Carlos Rodriguez	Salon B
3:00 p.m. – 3:15 p.m.	**Break**	Banquet Foyer D-G
3:15 p.m. – 4:45 p.m.	**Breakout:** First Responder Operations Development (Continued)	Salon A
3:15 p.m. – 4:45 p.m.	**Breakout:** ERT: Ops 16-Hour Train-the-Trainer (Continued)	Mangrove
3:15 p.m. – 4:45 p.m.	**Breakout:** Confined Space Operations/ Confined Space Rescue Development (Continued)	Citrus
3:15 p.m. – 4:45 p.m.	**Breakout:** HazMat Technician Development (Continued)	Salon B

APPENDIX C

IAFF Articles

FIREGUARD



FDNY Operations
at
Times Square Car Bomb Scare
May 1, 2010

Surrounding Properties

- Southwest Corner
  - 1515 Broadway
    - Viacom media headquarters
    - 1 building
    - 53 floors
    - Parent company of "South Park," whose creators have recently received threats
- Northwest Corner
  - 1531 Broadway
    - Marriot Marquis Hotel
    - 2 Buildings
    - 58 Floors

Action Taken Within 2 Minutes

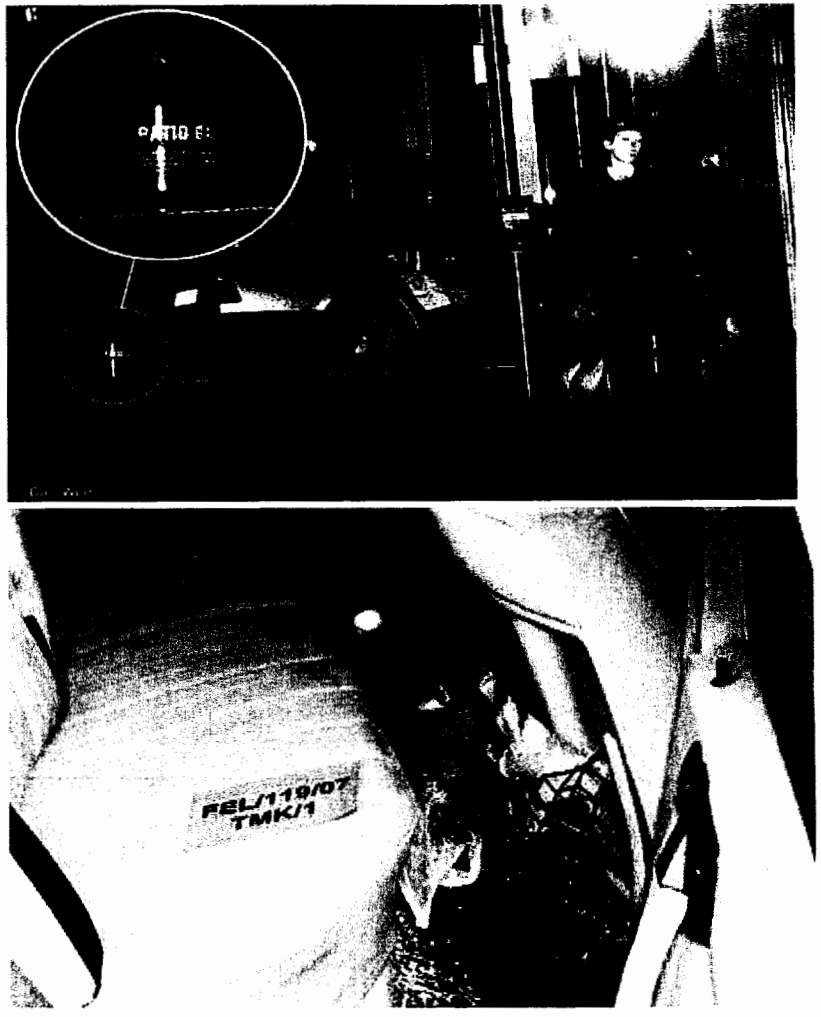
- Upon Arrival
  - Units waved in and directed to vehicle by police
  - Engine positioned to back stretch 1 ¾" line
  - Truck used the thermal-imaging camera and Ultra-Radiac
- Situational awareness (size-up)
  - Observed
    - Haphazardly parked vehicle
    - No visible fire
      - White smoke emanating from rear of car
    - Popping sounds
    - Odor of fireworks
    - Dark tinted windows
  - Searched and Comprehended key facts
    - L-4 stated "It did not look right"
    - Informed that the driver ran away
    - L-4 asked the police to "run the plate"
      - Police conferred with FD that the plates were "not registered"
  - Projected
    - Anticipated that the car could be a bomb

Device

- Improvised Incendiary Device (IID)
- 1993 Nissan Pathfinder-
  - 2 five-gallon plastic gas containers
  - 3 20-lb propane gas cylinders
  - M-88 fireworks
  - Metal gun case containing fertilizer
  - 2 Clocks as Timing Devices
- Bomb initiated, but failed to detonate

Similar Event

- Device and plot resembled London Haymarket Square 2007 plot
  - Car Bomb-Mercedes Benz
  - Improvised Incendiary device
  - Propane gas cylinders
  - Gasoline containers in car
  - Differences
    - 2nd car bomb towed away
    - believed to target first responders



Counterterrorism Policy and Analysis

Authors:
B.C. John Esposito
Lt. Timothy Carroll

Information as of 5/4/2010

FDNY Center for Terrorism and Disaster Preparedness
411 Shore Rd. Ft. Totten
Bayside NY 11359

Making the Grade

Dear President Schaitberger:

I am writing to express my sincere gratitude to you and the IAFF Scholarship Fund Trustees for making the National Labor College Scholarship available. I was thrilled to learn of my selection for this honor and I am deeply appreciative of your support.

I submitted my research paper on "Decreasing Firefighter Fatality: A Study in the Use of SCBA" and completed my bachelor's degree in labor health and safety. My professor said it's an "excellent paper; this is solid and important work."

The financial assistance you provided helped to pay my educational expenses, and allowed me to concentrate on my studies. I promise you I will continue to work hard and that I will use my degree to benefit the members of the IAFF.

Thank you again for your generosity and support.

Sincerely,
Tony Mussorfiti
Uniformed Fire Officers Association Local 854
Fire Department of New York

Valuable HazMat Training

Dear President Schaitberger:

I am writing to express my profound appreciation for approving delivery of the IAFF hazardous materials training program at Pinewood Fire Department in Munds Park, Arizona, by Fire Chief John Welsch and his staff.

We were able to send four newly hired personnel to attend this three-day program. Even after a week has passed, I'm still hearing positive comments from all of our attendees, a testament to the instructors.

Thank you again for the extremely important and beneficial program.

Sincerely,

Jim Fisher, Fire Chief
Flagstaff Ranch Fire District

Corrections

"Last Alarm," July-August 2009:
Carlos M. Alfaro was a member of Montgomery County, Maryland Local 1664 (not California).

Email your letters to pr@iaff.org OR mail them to:
Letters to the Editor c/o International Fire Fighter 1750 New York Ave NW Washington DC 20006

Canadian IAFF Locals Raise Funds for Charity

Langley City Raises $3,500 for BCPFFA Burn Camp

Langley City, BC Local 3253 held its annual Tri-it Triathlon fundraiser, raising $3,500 for the British Columbia Professional Fire Fighters Association (BCPFFA) Burn Camp.

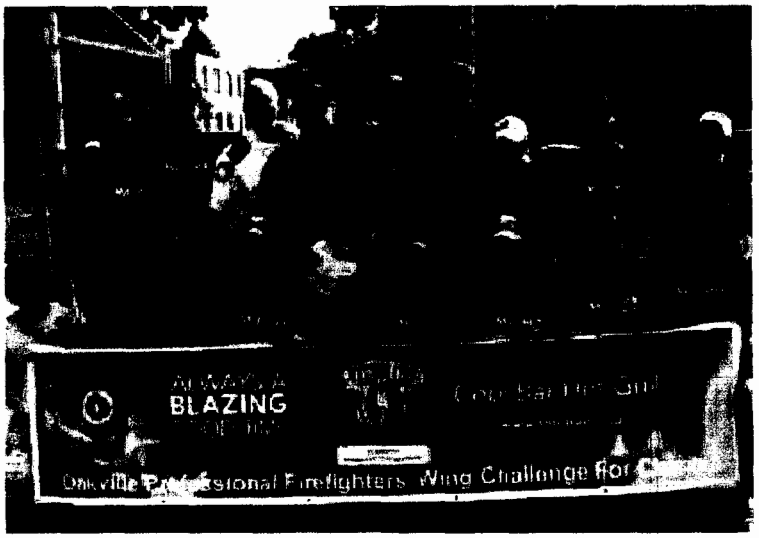
From left are participants Chris Miley, Captain Stuart Christianson, Mike Veitch, Rob Rabby, Captain Barry Vignal, Captain Brent Morgan, Andy Berg, Scott Kennedy, Tony Crawford, Brent Perry (on the Harley) and Dave Murphy (in front). Other members not pictured are Rob Gunn, Rob Leigh and Dave Skidmore. ■

Oakville Fire Fighters Win Tourney, Raise Funds

Oakville, ON Local 1582 hosted a "chicken wing eating competition" fundraiser July 12 at The FireHall Bar in Oakville, Ontario. A mini boot drive and donations from patrons helped raise $3,500, which were used as the entry fee to Oakville Mayor Rob Burton's Invitational Baseball tournament July 16.

The charity tournament raised $107,000 to help build the $4.5 million Dream Centre for Kerr Street Ministries (KSM), an 18,000-square-foot facility designed to serve as the hub for all of KSM's programs and services offered to those in need in Oakville's Kerr community.

Oakville Local 1582 members took first place in the tournament with a come-from-behind win in their final at bat. Mayor Burton wore his Ontario Professional Fire Fighters Association (OPFFA) rally cap while cheering on his fire fighters. ■



British Columbia Fire Fighters Hold Burn Fund Run 2009

The second annual Burn Fund Run in support of the British Columbia Professional Fire Fighters Association (BCFFA) Burn Fund took place April 5 at the Abbotsford Running Room and again June 14 at the White Rock/Surrey, Burnaby and Victoria Broadmead Running Room stores.

Fire vehicles, children, dogs and people walking, running and doing other various forms of exercise made for a fun event, which raised $14,005.75 to benefit the British Columbia Burn Fund building. More than $20,000 has been raised since the event began two years ago. ■

APPENDIX E

Instructor Structured Feed Back Form

IAFF Instructor Structured Feedback Form

Instructor's Name: _____ **Course:** _____

Observer's Name: _____ **Date:** _____ **Time:** _____ **to** _____

Item	Rating Very Effective(5) → Very Ineffective(1)	Evidence/Comments	Recommendations for Improvement
Before Training			
1. Organizes learning environment effectively			
2. Finds out about participants prior to session			
3. Positions and tests equipment			
4. Prepares and sequences participant materials for distribution			
5. Prepares self in terms of content, materials and instructional methods			

IAFF Instructor Structured Feedback Form

Item	Rating Very Effective(5) → Very Ineffective(1)	Evidence/Comments	Recommendations for Improvement
12. Manages instructional time effectively			
13. Uses instructional aids and equipment effectively			
14. Summarizes and concludes effectively			
15. Takes all precautions necessary for the safety and well-being of participants			
16. Supports co-instructor			
Attributes			
17. Creates and maintains a positive learning climate			
18. Speaks clearly and correctly			
19. Uses voice dynamics effectively			

IAFF Instructor Structured Feedback Form

Item	Rating Very Effective(5) → Very Ineffective(1)	Evidence/Comments	Recommendations for Improvement
Following Instruction			
28. Restores order to learning environment			
29. Removes equipment and materials no longer required			
30. Follows up instruction with individual participants, as needed or requested			
31. Corrects participant assignments and tests punctually and correctly			
32. Completes reports and paperwork punctually and correctly			

APPENDIX F

Kudos Letters

International Association of Fire Fighters

AFFILIATED WITH AFL-CIO CLC

Local F-161
Date: 1/16/08

President Harold Schaitberger
International Association of Fire Fighters
1750 New York Ave, N.W.
Washington, D.C. 20006

Dear President Schaitberger,

On behalf of the professional firefighter's at The National Institute of Standards and Technology Fire Department in Gaithersburg, MD., I would like to take this opportunity to say thank you to you and your staff for an outstanding Confined Space Entry and Rescue class that was offered to us in October 2007. The three instructors, Joe Mansa, Lane Spalla, and Mark Delima were very knowledgeable and informative. Each were outstanding in their respected fields of knowledge. Joe, Lane, and Mark were are willing to go that "extra mile" to be sure everyone picked up on what was being taught. Each student in the class took away priceless knowledge from these gentleman. The International should be proud to have these instructors on staff.

Also, I would like to thank Elizabeth Harman and Chris Turner for their roles in planning and organizing the class. The training went on without a hitch. This was a high quality training class and all the above mentioned should be recognized for their efforts.

Respectfully Submitted,

George R. Clary, Jr.
President
IAFF Local F-161

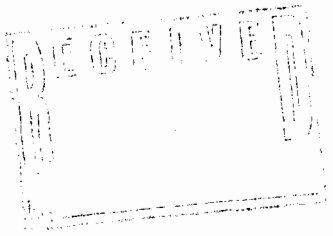
TRAVERSE CITY FIRE FIGHTERS UNION
Local No. 646

Affiliated with
A. F. L. - C. I. O.
Through
INTERNATIONAL
ASSOCIATION
OF FIRE FIGHTERS

Fire Station 1 • 500 West Front St.
Traverse City, Michigan 49684
(616) 946-0230

Member of
MICHIGAN STATE
FIRE FIGHTERS
ASSOCIATION

Harold Schaitberger
General President
IAFF
1750 New York Avenue, NW
Washington, DC 20006



Dear President Schaitberger,

I wanted to thank you for the excellent training we received this past week from the IAFF. Dave Selliers and Bob Suarez presented two excellent train the trainer programs to our department. The Infectious Disease and Response to Clandestine Drug Lab courses will help keep our firefighters safe and improve our professionalism when responding to incidents involving either of these topics. Thank you for pursuing these training possibilities. We look forward to receiving additional courses in the future.

Sincerely,

Mike Onthank

Mike Onthank
President
Traverse City Firefighters, Local 646

BROOKLINE FIRE DEPARTMENT

TRAINING DIVISION

Deputy Chief
Colin O'Connell

Captain
Mark J. Jefferson

Lieutenant
Steven T. Gropman

350 Washington Street
Brookline, Massachusetts
02447-0557
Ph (617) 730-2286
Fax (617) 232-1347

March 5. 2008

To: President Harold A. Shaitberger
General President
International Association of Firefighters AFL-CIO-CLC
1750 New York Avenue N.W.
Washington. D.C. 20006

Dear Preident Shaitberger.

On behalf of the Brookline Fire Department Training Division. we would like to take this opportunity to thank you and your staff for the help given to us during our recent recruit class. This class is comprised of recruits from Braintree. Brookline. Needham. Norwood. and Westwood. All of the departments have expressed to us their deep appreciation for the assistance and guidance that we received from Chris Turner. Paul Carey. and Neil Mullane of your Haz Mat Office.

The assistance. professionalism. and expertise of Chris Turner. Paul Carey. and Neil Mullane should be commended. as the training they assisted us with would not have been done without them. Training in Hazardous Materials First Responder Operations Level is essential for all new recruits. your staff helped our recruits gain confidence and knowledge in emergency response skills they will be using for a lifetime. This knowledge and confidence learned by the recruits will help make each an asset to their communities. Simply put thank you!

Respectfully.

Deputy Chief Colin D. O'Connell

From: Harman, Elizabeth
Sent: Tuesday, February 03, 2009 12:06 PM
To: Bob Martin Del Campo
Cc: Lockhart Kim; Hill Thomas; Dowleyne Jacqueline; Blume, Jane
Subject:RE: HazMat Fro.

Captain Del Campo,

Thank you for taking the time to send your words of praise. We take great pride in our training programs - but they wouldn't be anything without the expertise of our great instructor cadre.

Regards,

Elizabeth M. Harman
Director, HazMat/WMD Training Department International Association of Fire Fighters 1750 New York Avenue, N.W.
Washington D.C. 20006
202-824-1560

-----Original Message-----
From: Bob Martin Del Campo [mailto:bob.martindelcampo@hollister.ca.gov]
Sent: Saturday, January 31, 2009 3:45 PM
To: Harman, Elizabeth
Cc: Lockhart Kim
Subject: HazMat Fro.

Dear Elizabeth.
We have concluded our departmental HazMat Fro Training, and I have comment. As the Training Officer for our department I look for delivery, content, and expertise in subject matter. I have to say that with out a doubt this was the best course of instruction that has been conducted for our department. Sam Campbell, Ron Doss, Colleen Mulholand, and Sean Hernandez are exceptional Technicians, Advisors, and most importantly Instructors. The personalities of the instructors made the class. They could have made an English Composition Class interesting. Elizabeth and Kim Thank you for your efforts in providing the Hollister City Fire Department with training that will truly save the lives of Firefighters.

Respectfully
Bob Martin Del Campo
Captain/Training Officer
Hollister Fire Department
Sta.1, (831) 636-4325

From: Harman, Elizabeth
Sent: Thursday, February 19, 2009 8:28 AM
To: Dowleyne Jacqueline; Blume, Jane
Subject:Fw: HAZ-MAT FRO CLASS

Fyi.
Elizabeth M. Harman, Director
HazMat/WMD Training Department

----- Original Message -----
From: Charlie Bedolla <charlie.bedolla@hollister.ca.gov>
To: Harman, Elizabeth
Sent: Thu Feb 19 00:25:14 2009
Subject: HAZ-MAT FRO CLASS

Dear Elizabeth,

The Hollister Fire Department and our IAFF Local 3395 would like to express our gratitude to the IAFF for providing the HAZ-MAT FRO Class to us.

This class was delivered in a very professional and fun atmosphere. IAFF should be proud and fortunate to have such top quality instructors teaching this class. The teaching methods of these instructors made it easy to learn all of the material. I can honestly say that I definitely learned way more than what I expected. I am glad that I made the effort to attend. We now have brought a lot more tools and knowledge to the calls that we run. Safety is our number one priority and we want everyone to be safe and live long enjoyable lives. The instructors truly showed that they are passionate about what they are teaching and honestly care about each and every student.

I would just like to conclude by highly recommending this class to every department. I am looking forward to possibly having some more of these classes brought to the Hollister Fire Department.

Thank You,

Carlos Bedolla
President, IAFF LOCAL 3395
Fire Captain
Hollister Fire Department
110 Fifth Street
Hollister, CA. 95023
831-801-5438 (cell)
831-636-4325 (work)

From: Harman, Elizabeth
Sent: Monday, August 17, 2009 3:45 PM
To: Blume, Jane
Cc: Dowleyne Jacqueline
Subject: FW: Pinewood FD Haz-Mat Course - THANK YOUS

fyi

Elizabeth M. Harman
Director, HazMat/WMD Training Department

From: Lockhart Kim
Sent: Monday, August 17, 2009 3:38 PM
To: John Welsch
Cc: Hill Thomas; Harman, Elizabeth
Subject: FW: Pinewood FD Haz-Mat Course - THANK YOUS

John,

The POC was every happy with the training he received (see below), thanks for the good job.

Kim Lockhart

From: James Fisher [mailto:jfisher@flagstaffranch.com]
Sent: Wednesday, August 12, 2009 2:40 PM
To: Lockhart Kim
Subject: Pinewood FD Haz-Mat Course - THANK YOUS

Good morning Kim,

Jim Fisher here, from Flagstaff RANCH Fire District just SW of the City of Flagstaff, in northern Arizona.

I writing to express my profound appreciation for approving delivery of the IAFF Haz-Mat Program recently held at Pinewood Fire Dept. in Munds Park, Arizona by Fire Chief John Welsch and his staff.

We were able to send four (4) newly hired personnel to attend this 3 day program and even after a week has passed I'm still getting positive comments from all our attendees, a testament to the instructors.

Please document and provide appropriate recognition to Chief Welsch and his staff for their provision of extremely important and beneficial response educational learning using the IAFF's excellent program.

PS: Please say hi to Rich Duffy for me (Local 587), we've know each other since the 1980's.

Sincerely, Jim Fisher, Fire Chief
Flagstaff Ranch Fire District (Office) 928-226-3302

EAST ROANE COUNTY VOLUNTEER FIRE DEPARTMENT

853 New Midway Rd Kingston, TN 37763

Phone: 865-376-4170 Fax: 865-376-1059

Chief David Maupin
East Roane County Volunteer Fire Dept.
853 New Midway Road
Kingston, TN 37763
August 30, 2010

Jim Ridley
Director Of HazMat/WMD Training Department
International Association of Fire Fighters
1750 New York Avenue
Washington, DC 20006-5395

Dear Jim:

Please accept my compliments for the supportive role you played in getting the Confined Space Operations training class approved and coordinated to fit the very unique schedule we needed for the volunteers of East Roane County.

The instructors Chuck and Mike handled the training time frame perfectly and were very helpful and knowledgeable.

Thank you for giving your time to help make this training happen. This class that you help provide will pay off in a big way.

Sincerely,

David Maupin
Fire Chief
East Roane County Volunteer Fire Dept.

SEP 07 2010

Subject: HazMat Incident
Date: Fri, 15 Apr 2011 13:27:15 -0500
From: kspurlock@Pattonvillefd.com
To: mwoolbright@iaff.org; mark.fuller@iaffdistrict2.org

Mark Woolbright
2nd District Vice President,

On April 14th 2011 St. Louis County was presented with the challenge of handling a serious hazardous material incident. While we never look forward to dealing with any HAZMAT event, the situation presented proved to be beneficial for our staff in many ways. We were very lucky to have your IAFF instructors (Frank Berjog and Tony Franz) in town, as their expertise and advanced training in Hazardous Materials aided us in the handling of a dangerous situation. The way in which these men assisted in managing the incident proved to us once again just how beneficial it is for our firefighters to train with instructors as qualified and knowledgeable as yours. It is easy to compliment their classroom skills and controlled-situation training, but live events, such as the one we faced, truly prove how valuable it is for our firefighters to learn from and train alongside these IAFF instructors. I am sure the skill set they bring and pass on to our firefighters will allows us to be able to accomplish high-hazard incidents in the days and years to come. We appreciate their time and effort, and as always we thank you for providing these invaluable resources to us.

Sincerely,
Battalion Chief Training Officer K.J. Spurlock

Error! Filename not specified.
From the Desk of
B/C KJ Spurlock Training Officer
314-393-7062
kspurlock@pattonvillefd.com

"GO HOME AT THE END OF EACH DAY, KNOWING YOU DID THE RIGHT THING."

Lockhart Kim

From: Andrew Yee [andrew.b.yee@gmail.com]
Sent: Tuesday, November 20, 2012 11:43 PM
To: Lockhart Kim; J.Ridley@IAFF.org
Subject: SFFD- IAFF Hazmat Class

Follow Up Flag: Follow up
Flag Status: Flagged

Jim and Kim,

I am a recruit with the San Francisco Fire Department and recently had a 3 day Hazmat FRO class that was instructed by Sam Campbell, Cruz Tapia, Conn, and Bobby Shelton. On behalf of the 114th Academy, I would like to thank you for giving us the opportunity to learn from these experienced firefighters. The class was very informative and more importantly, enjoyable. Sam Campbell was especially engaging to the class with group exercises/ presentations. It would really be great to see these gentlemen continue to teach and share their hazmat experience to future recruit classes and other fire classes throughout the country.

Sincerely,
Andrew Yee

Lockhart Kim

From: Don Noble [Dnoble22@comcast.net]
Sent: Tuesday, November 27, 2012 11:27 PM
To: Lockhart Kim
Cc: Ridley, Jim
Subject: haz mat class for sffd recruit class 114

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hello,

This is recruit Don Noble of the San Francisco Fire Department. I am sending this email just to inform you that the instruction i received was excellent. Instructors Sam, Cruz, Bobby, and Conn were amazing. They kept me interested and involved in a subject i was never really excited about. It has also sparked my interest to dive deeper into haz mat and become a specialist in the future so i can stay safe throughout my career and work on the rescue. I would like to thank you again for providing this instruction, the great instructors who all had different learning styles and provided many experiences from their careers. I am excited about my opportunities to gain more knowledge through the IAFF.

sincerely,

Don Noble

APPENDIX G

2008 Level III Evaluation Report

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS HAZARDOUS MATERIALS FIRST RESPONDER OPERATIONS PROGRAM EVALUATION 2008

Presented to:
The International Association of Fire Fighters

Presented by:
Harold D. Stolovitch, PhD, CPT
Steven J. Condly, PhD
September 23, 2008

HAROLD D. STOLOVITCH & ASSOCIATES
LEARNING & PERFORMANCE SOLUTIONS

TABLE OF CONTENTS

INTRODUCTION

The International Association of Fire Fighters (IAFF) conducts course evaluations in order to determine the effectiveness of instruction, verify the perceptions of trainees, and identify what aspects of its training require improvement. This report presents the results of evaluations performed on four representative groups of trainees in 2008: 32 incumbent fire fighters from Gallatin, TN and 62 from Malden, MA; 111 recruits from Fairfax, VA and 240 from Philadelphia, PA. The report also presents analyses and comparisons based on data gathered from the 2008 groups and from similar 2006 trainee groups: incumbent fire fighters from El Paso, TX and recruits from Montgomery County, MD.

The Hazardous Materials Response course itself consists of four units. These are:

- Unit 1: Common Alarms
- Unit 2: Health and Safety
- Unit 3: Recognition and Identification
- Unit 4: The Planned Response

This report is divided into four major sections. The first presents evaluation findings derived from the 2008 group of trainees with respect to their Hazardous Materials Response training; the second compares the trainees among the four 2008 states; a third evaluation compares recruits (VA, PA, MD) with incumbents (TN, MA, TX); the fourth compares the new or 2008 trainees (VA, PA, TN, MA) with the old or 2006 trainees (MD, TX). Each major section is further divided into several sub-sections containing tables, graphs, and explanations/commentary regarding trainee performance on "Tests", their "Confidence" levels, "Actions" carried out as a result of the training, and trainee "Course Evaluations." The report closes with a Summary, Conclusions, and Recommendations section.

VA, PA, TN, MA—AS A WHOLE

TESTS

Immediately prior to instruction, the trainees took a 50-item test and then took the same test immediately following instruction. Table 1 presents the results. Approximately one year later, trainees took a follow-up test to determine retention over time.

Table 1. FRO Test Results (N = 442)

Items	Pre-Course	Post-Course
Mean %	52.62	88.83
sd[1]	9.78	7.99
Minimum	26	66
Maximum	98	100
Range	72	34

The Pre-Course mean test score indicates that trainees understood roughly half the material that was the content of the course. The Post-Course mean test score rose dramatically (by 36.21 points), to nearly 90%, indicating that instruction had a strong positive effect on the immediate learning of the material. The standard deviation in the Post-Course results denotes greater consistency of performance compared to the Pre-Course

Table 2. Knowledge Retention

Items	Post-Course	Follow Up	Cohen's d[2]	Effect Size
N	442	210		
Mean %	88.83	75.66	1.4757	Very large
sd	7.99	10.63		
Minimum	66	48		
Maximum	100	94		
Range	34	46		

As might be anticipated, the Follow Up test scores of the 47.5% of trainees who took the test were significantly lower than the Post-Course test scores, but the trainees still managed to

[1] "sd" is short for "standard deviation," a commonly used statistic that indicates the degree or amount of spread of scores around the mean. The larger the sd, the more widely distributed the scores are.
[2] Cohen's d is a modern statistic that quantifies the size and importance of the difference in means between two groups. By convention, a Cohen's d statistic that falls below 0.2000 indicates that the group difference is insignificant or meaningless; 0.2000 to 0.4999 indicates a small difference; 0.5000 to 0.7999 indicates a medium difference; and 0.8000 or greater indicates a large difference. To assist the reader, these appellations appear in the "Effect Size" column.

remember three-quarters of the material they were taught in the course. Additionally, although not shown in Table 2, the Follow Up mean test score (75.66) was significantly higher than the Pre-Course mean score (52.62; Cohen's d = 2.2900 = very large effect size), indicating that there was, in fact, a positive and substantially durable effect of instruction on the trainees.

Tests Summary

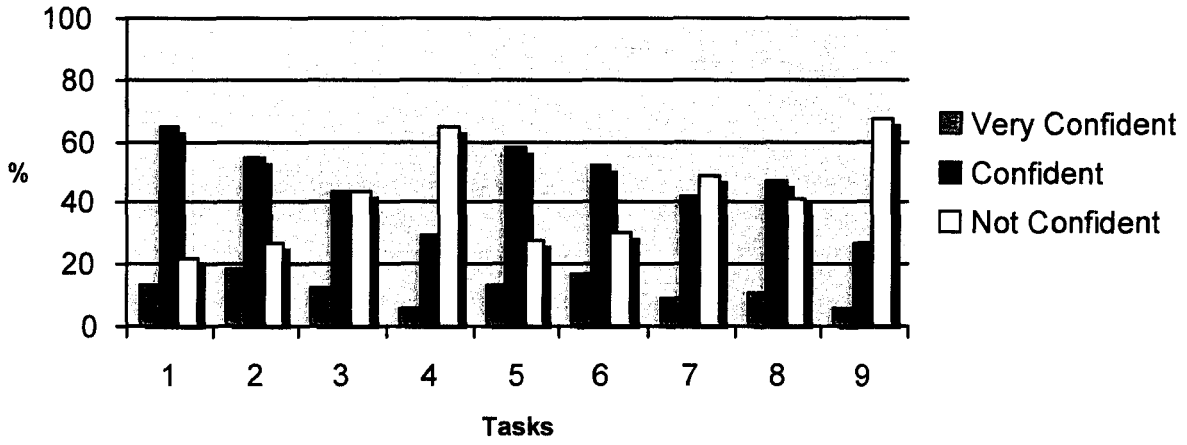
There were strong but unsurprising findings. Test score evidence suggests the content of the course is, before the class, not well understood by the trainees (although some trainees already possessed significant prior knowledge as indicated by their high Pre-Course scores), and that instruction has both a very strong immediate and strong distal effect on learning.

CONFIDENCE

Table 3. (Survey Items 22-30). Pre-Course Task Confidence Ratings

Task	Item #	Item	Confidence	Frequency	Percent
1	22	Recognize hazmat clues in alarms	Very Confident	52	13.3
			Confident	251	64.4
			Not Confident	86	22.1
			(Missing)	1	0.3
2	23	ID hazmat in cargo	Very Confident	72	18.5
			Confident	213	54.6
			Not Confident	104	26.7
			(Missing)	1	0.3
3	24	Understand toxic material health risk exposure	Very Confident	48	12.3
			Confident	169	43.3
			Not Confident	172	44.1
			(Missing)	1	0.3
4	25	Understand medical surveillance need	Very Confident	24	6.2
			Confident	114	29.2
			Not Confident	251	64.4
			(Missing)	1	0.3
5	26	Differentiate exposure and contamination	Very Confident	54	13.8
			Confident	227	58.2
			Not Confident	108	27.7
			(Missing)	1	0.3
6	27	Know limits of chemical hazard gear	Very Confident	67	17.2
			Confident	204	52.3
			Not Confident	117	30.0
			(Missing)	2	0.5
7	28	Use hazmat guides	Very Confident	37	9.5
			Confident	163	41.8
			Not Confident	189	48.5
			(Missing)	1	0.3
8	29	Control chemical hazard releases	Very Confident	43	11.0
			Confident	184	47.2
			Not Confident	162	41.5
			(Missing)	1	0.3
9	30	Gauge chemical exposure risks	Very Confident	22	5.6
			Confident	104	26.7
			Not Confident	263	67.4
			(Missing)	1	0.3

Graph 1. (Survey Items 22-30). Pre-Course Task Confidence Ratings



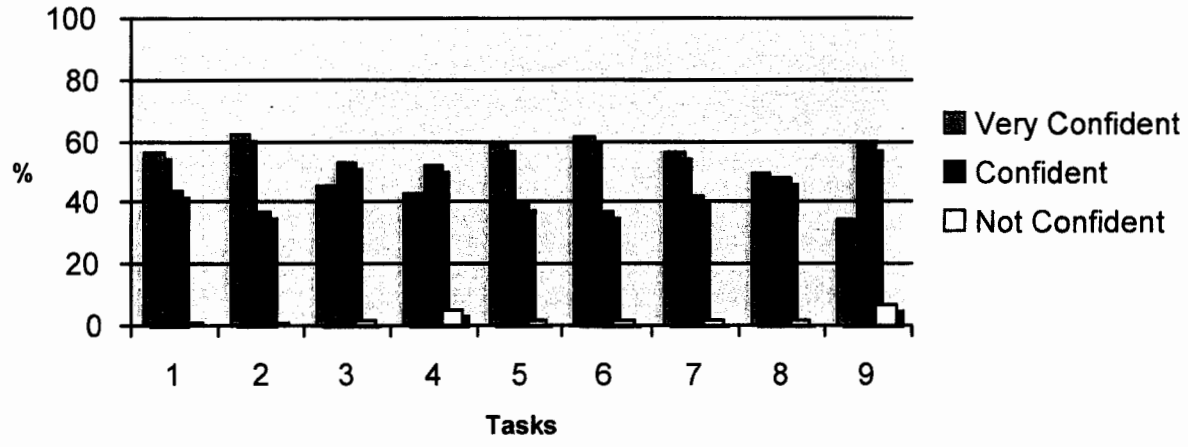
For Tasks 4 (Understand medical surveillance need) and 9 (Gauge chemical exposure risks) there was a markedly low level of confidence. Tasks 3 (Understand toxic material health risk exposure), 7 (Use hazmat guides), and 8 (Control chemical hazard releases) were evenly divided between Confident and Not Confident. This finding should influence the design of course instruction in that instructors might pay particular attention to those tasks on which trainees admit they have little confidence to perform.

Table 4. (Survey Items 31-39). Post-Course Task Confidence Ratings

Task	Item #	Item	Confidence	Frequency	Percent
1	31	Recognize hazmat clues in alarms	Very Confident	215	55.1
			Confident	166	42.6
			Not Confident	2	0.5
			(Missing)	7	1.8
2	32	ID hazmat in cargo	Very Confident	239	61.3
			Confident	140	35.9
			Not Confident	4	1.0
			(Missing)	7	1.8
3	33	Understand toxic material health risk exposure	Very Confident	175	44.9
			Confident	202	51.8
			Not Confident	6	1.5
			(Missing)	7	1.8
4	34	Understand medical surveillance need	Very Confident	165	42.3
			Confident	198	50.8
			Not Confident	20	5.1
			(Missing)	7	1.8

5	35	Differentiate exposure and contamination	Very Confident	223	57.2
			Confident	150	38.5
			Not Confident	8	2.1
			(Missing)	9	2.3
6	36	Know limits of chemical hazard gear	Very Confident	235	60.3
			Confident	140	35.9
			Not Confident	8	2.1
			(Missing)	7	1.8
7	37	Use hazmat guides	Very Confident	215	55.1
			Confident	162	41.5
			Not Confident	6	1.5
			(Missing)	7	1.8
8	38	Control chemical hazard releases	Very Confident	191	49.0
			Confident	185	47.4
			Not Confident	7	1.8
			(Missing)	7	1.8
9	39	Gauge chemical exposure risks	Very Confident	132	33.8
			Confident	225	57.7
			Not Confident	26	6.7
			(Missing)	7	1.8

Graph 2. (Survey Items 31-39). Post-Course Task Confidence Ratings



For Tasks 4 (Understand medical surveillance need) and 9 (Gauge chemical exposure risks) there was a lingering lack of confidence. Also, for these two tasks, as well as for Task 3 (Understand toxic material health risk exposure), Confident had a higher percentage of responses than did Very Confident. The prior suggestion mentioned above regarding implications for instruction still holds.

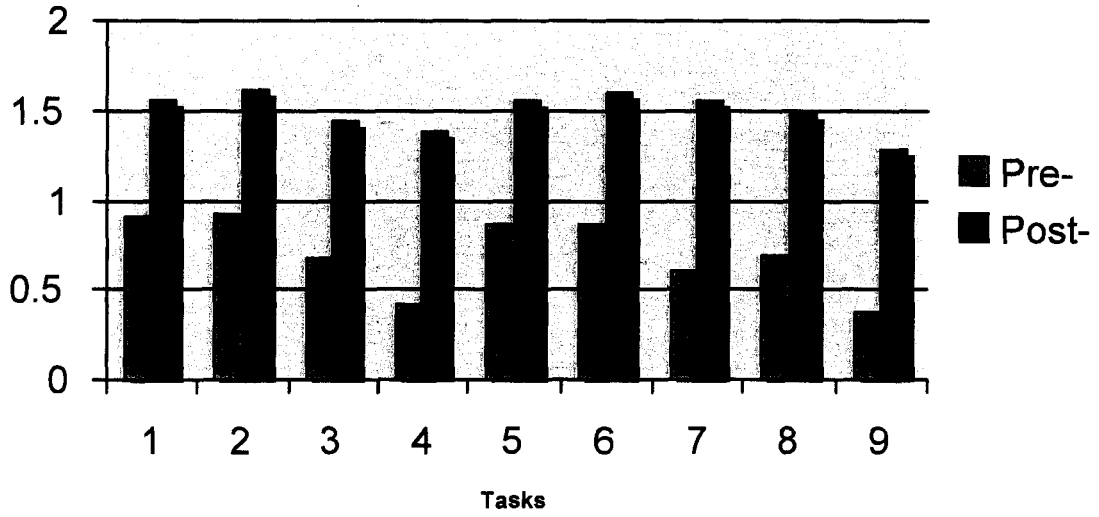
Table 5. Comparisons of Pre- and Post-Course Task Confidence Ratings

Task	Item #	Task	N	Mean	sd	*d*	Effect Size
1	22	Recognize hazmat clues in alarms	389	0.91	.590	1.1800	Very large
	31		383	1.56	.508		
2	23	ID hazmat in cargo	389	0.92	.668	1.1607	Very large
	32		383	1.61	.509		
3	24	Understand toxic material health risk exposure	389	0.68	.682	1.2449	Very large
	33		383	1.44	.528		
4	25	Understand medical surveillance need	389	0.42	.606	1.6129	Very large
	34		383	1.38	.584		
5	26	Differentiate exposure & contamination	389	0.86	.631	1.1938	Very large
	35		381	1.56	.537		
6	27	Know limits of chemical hazard gear	388	0.87	.677	1.1808	Very large
	36		383	1.59	.533		
7	28	Use hazmat guides	389	0.61	.655	1.5776	Very large
	37		383	1.55	.529		
8	29	Control chemical hazard releases	389	0.69	.659	1.3142	Very large
	38		383	1.48	.536		
9	30	Gauge chemical exposure risks	389	0.38	.591	1.5370	Very large
	39		383	1.28	.580		

Note: Confidence ratings were converted into the following: Very Confident = 2; Confident = 1; Not Confident = 0.

Note: For each task, the first line refers to the Pre-Course rating; the second line for the same task refers to the Post-Course rating.

Graph 3. Means of Pre- and Post-Course Task Confidence Ratings



Both Table 5 and Graph 3 demonstrate that there were strong boosts in trainee task confidence. To the degree that confidence on prospective tasks has a positive effect on actual performance (and there is abundant research evidence that this is most often the case), course instruction in this regard is both helpful and effective. There is a caution, however. Training which results in knowledge gain may engender a false sense of confidence to perform. This stems from a belief that knowing equals actual ability to do. Self-assessed confidence ratings may not be a valid indicator of performance capability. (See, for example, Eakin, D.K. (2005). Illusion of knowing: metamemory and memory under conditions of retroactive interference. *Journal of Memory and Language*, *52*(4), 526-534.)

Table 6. Effect Size (Cohen's *d*) of Differences Among Post-Course Task Confidence Ratings

Task	1	2	3	4	5	6	7	8
1	---							
2	.0983	---						
3	.2316	.3278	---					
4	.3289	.4199	.1078	---				
5	.0000	.0956	.2253	.3208	---			
6	.0576	.0384	.2827	.3756	.0561	---		
7	.0193	.1156	.2081	.3051	.0188	.0753	---	
8	.1532	.2487	.0752	.1784	.1491	.2058	.1315	---
9	**.5136**	**.6048**	.2885	.1718	**.5009**	**.5566**	.4864	.3581

Note: Effect size statistics of .5000 or larger are in bold.

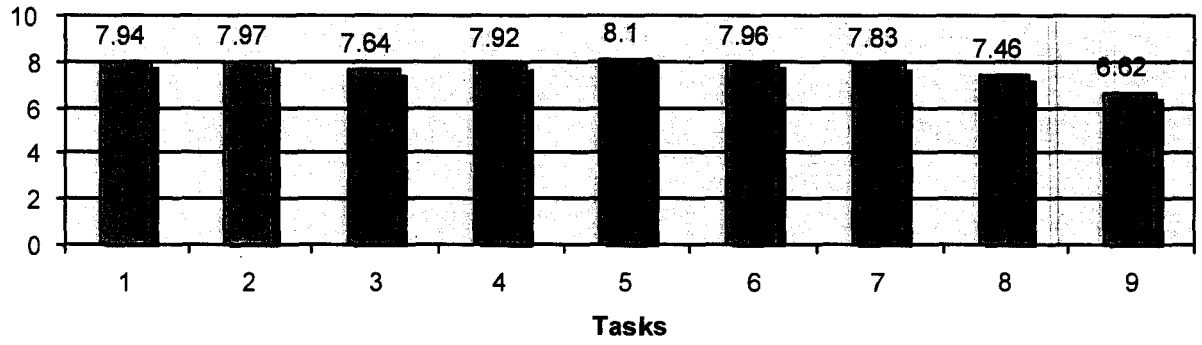
Post-Course Confidence on Task 9 (Gauging chemical exposure risks) was significantly lower than that of most other task confidence ratings. It is advised that course developers and instructors pay particular attention to the amount and quality of instruction regarding this task. Further investigation is warranted.

Table 7. Task Confidence Ratings on Follow Up Interview Survey (*n* = 205)

Item	Description	Mean	sd	*Mean*
Task 1	Recognize hazmat clues in alarms	3.06	1.799	*7.94*
Task 2	ID hazmat in cargo	3.03	1.987	*7.97*
Task 3	Understand toxic material heat risk exposure	3.36	2.060	*7.64*
Task 4	Understand medical surveillance need	3.08	2.311	*7.92*
Task 5	Differentiate exposure & contamination	2.90	2.120	*8.10*
Task 6	Know limits of chemical hazard gear	3.04	2.152	*7.96*
Task 7	Use hazmat guides	3.17	1.926	*7.83*
Task 8	Control chemical hazard releases	3.54	1.957	*7.46*
Task 9	Gauge chemical exposure risks	4.38	2.176	*6.62*

Note: Here, 1 = Extreme Confidence; 10 = Total Lack of Confidence.

Graph 4. Task Confidence Ratings on Follow Up Interview Survey (*n* = 205)



The task ratings found in Table 7 were calculated using a different scale than those from Tables 3-5. In this case, a 10-point scale was used according to the following: 1 = Extreme Confidence and 10 = Total Lack of Confidence. In order to make the accompanying graph more intelligible, the trainees' ratings were reverse-scored (10 now equals Extreme Confidence and 1 = Total Lack of Confidence). These revised ratings are found in the italicized column and represented in Graph 4. Task 9 would still seem to be significantly lower than that for the other tasks. For example, the Cohen's *d* between Tasks 9 and 5 (the two tasks with the greatest difference in confidence ratings) is .6890 (Medium-to-Large) while the difference between Tasks 9 and 8 (the tasks with the smallest difference in confidence ratings) realizes a Cohen's *d* of .4059 (Small-to-Medium). This indicates that the relatively lower confidence for this task is not merely temporary but is of a more durable nature.

Confidence Summary

The findings were again strong but unsurprising. On the whole, task confidence was low before instruction, high after instruction, and remained high in the follow up survey. Assuming the rise in confidence is not inflated (i.e., that it is merely over-confidence), this is evidence that, as far as the trainees are concerned, the course has a direct and positive effect on their ability to do their jobs.

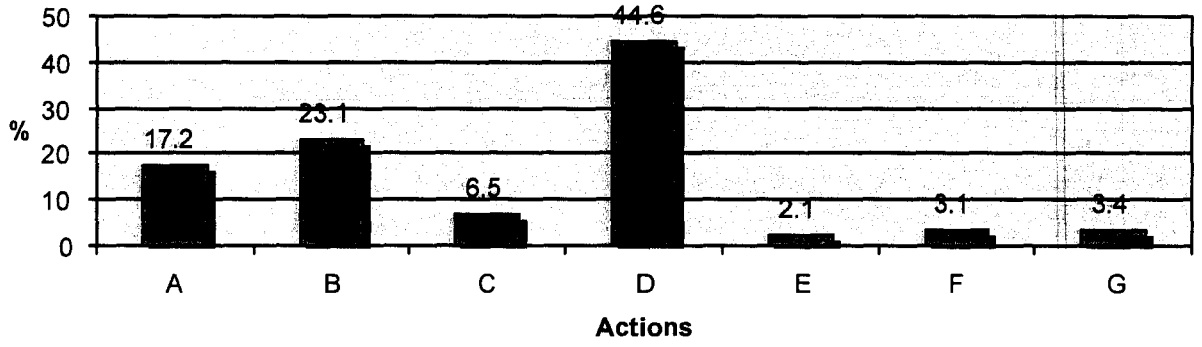
ACTIONS

The actions described and enumerated in Tables 8-10 below refer to the most important actions the trainees *intend* to take following training.

Table 8. (Survey Item 40). New or Different Action (Unit 1-Understanding HazMat)

Letter	Item	Frequency	Percent
A	Review chemical & physical properties	66	17.2
B	Routinely discuss most common hazmats	88	23.1
C	Analyze a hazmat incident	25	6.5
D	Walk through first due area	171	44.6
E	Review HAZWOPER	8	2.1
F	Keep records of responses	12	3.1
G	Does not apply	13	3.4
	Total	*383*	*100.0*

Graph 5. (Survey Item 40). New or Different Action (Unit 1-Understanding HazMat)

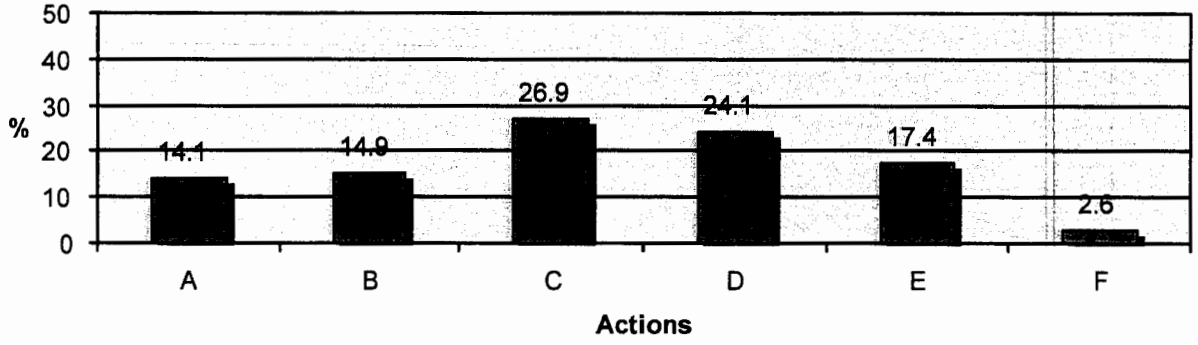


Of the seven choices available (including Does not apply), nearly half of trainees indicated they intended to walk through their first due area. Only 15% of trainees selected Actions C, E, F, and G combined.

Table 9. (Survey Item 41). New or Different Action (Unit 2-Recognizing HazMat)

Letter	Item	Frequency	Percent
A	Avoid contaminations	54	14.1
B	Review exposure reporting procedures	57	14.9
C	Report signs of exposure	103	26.9
D	Keep records of responses	92	24.1
E	Decontaminate clothing/equipment	67	17.4
F	Does not apply	10	2.6
	Total	*383*	*100.0*

Graph 6. (Survey Item 41). New or Different Action (Unit 2-Recognizing HazMat)

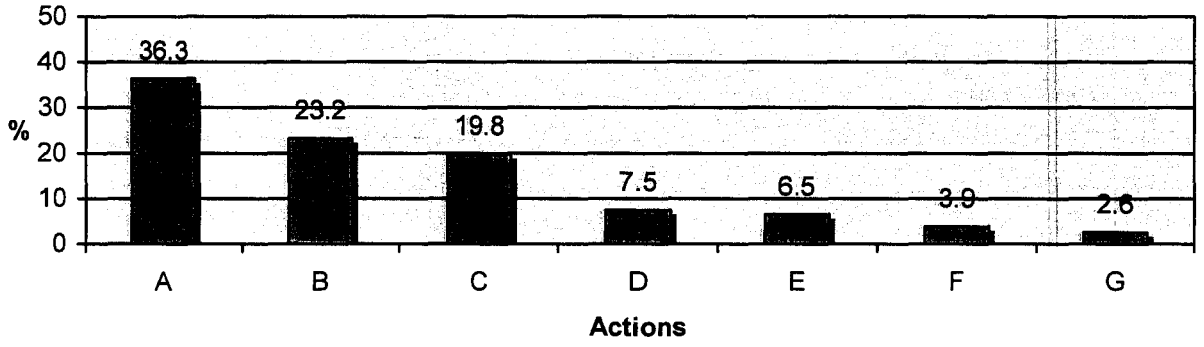


Of the six choices available (including Does not apply), there seems to be no stand out action which new trainees believed was most important for them to take. Perhaps this reflects the differing knowledge levels individuals had prior to the course.

Table 10. (Survey Item 42). New or Different Action (Unit 3-Responding to HazMat)

Letter	Item	Frequency	Percent
A	Refer to hazmat info sources	139	36.3
B	Conduct pre-incident plans	89	23.2
C	Analyze potential hazmat incident	76	19.8
D	Plan a hazmat response	29	7.5
E	Implement the plan	25	6.5
F	Establish proper decontamination procedures	15	3.9
G	Does not apply	10	2.6
	Total	*383*	*100.0*

Graph 7. (Survey Item 42). New or Different Action (Unit 3-Responding to HazMat)



Of the seven choices available (including Does not apply), more than half decided upon either referring to hazardous materials information sources to learn about chemicals *or* to planning for or analyzing a potential hazmat incident. 80% of trainees selected A, B, or C.

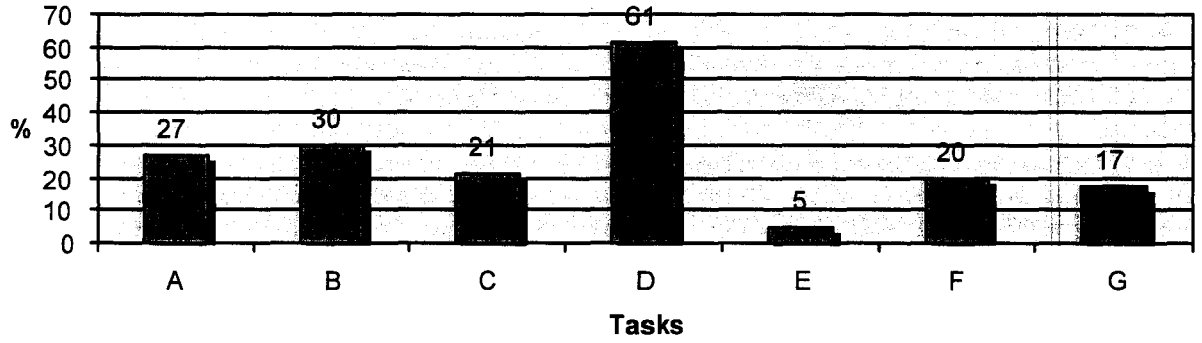
The actions described and enumerated in Table 11-13 below all refer to the most important actions the trainees *took* following training. The columns are different because for Student Evaluation Items 16-18, trainees were asked to circle everything which applied (whereas for Survey Items 40-42 trainees could only select one answer per item).

Table 11. (Student Evaluation Item 16). New or Different Action (Unit 1-Understanding HazMat)

Letter	Item	Percent
A	Review chemical & physical properties	27
B	Routinely discuss most common hazmats	30
C	Analyze a hazmat incident	21
D	Walk through first due area	61
E	Review HAZWOPER	05
F	Keep records of responses	20
G	Does not apply	17

n = 205

Graph 8. (Student Evaluation Item 16). New or Different Action (Unit 1-Understanding HazMat)



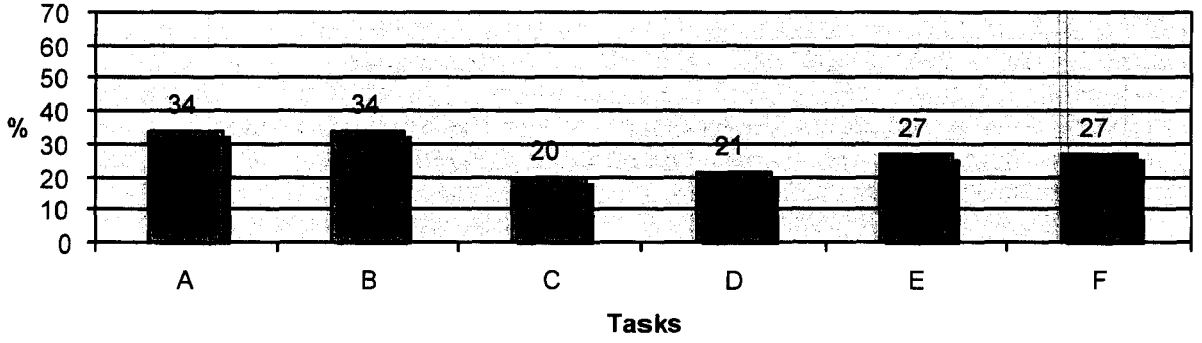
A majority selected "Walk through first due area," while at least a quarter selected "Review chemical & physical properties" and "Routinely discuss most common hazmats." The fact that only 5% selected "Review HAZWOPER" suggests the need for an investigation to determine why so few selected it.

Table 12. (Student Evaluation Item 17). New or Different Action (Unit 2-Recognizing HazMat)

Letter	Item	Percent
A	Avoid contaminations	34
B	Review exposure reporting procedures	34
C	Report signs of exposure	20
D	Keep records of responses	21
E	Decontaminate clothing/equipment	27
F	Does not apply	27

n = 205

Graph 9. (Student Evaluation Item 17). New or Different Action (Unit 2-Recognizing HazMat)



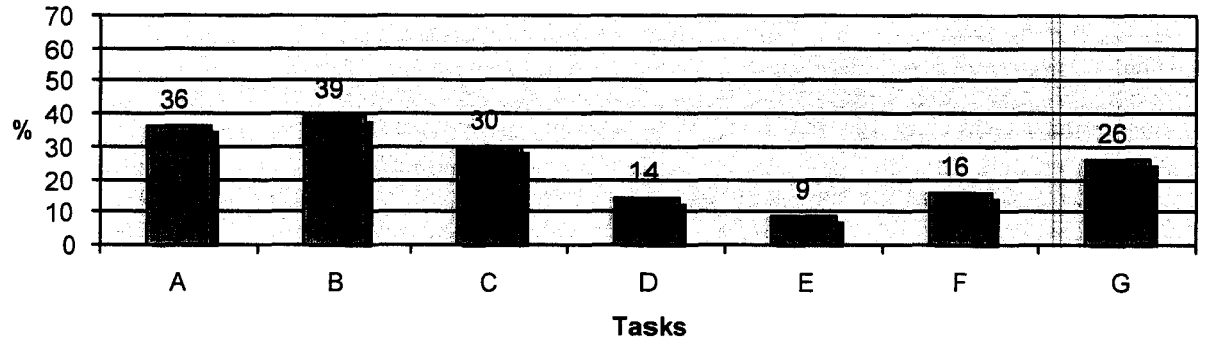
Activities C and D seem to be the minority activities on the list. Pluralities of trainees selected contamination and exposure-related activities (A & B).

Table 13. (Student Evaluation Item 18). New or Different Action (Unit 3-Responding to HazMat)

Letter	Item	Percent
A	Refer to hazmat info sources	36
B	Conduct pre-incident plans	39
C	Analyze potential hazmat incident	30
D	Plan a hazmat response	14
E	Implement the plan	09
F	Establish proper decontamination procedures	16
G	Does not apply	26

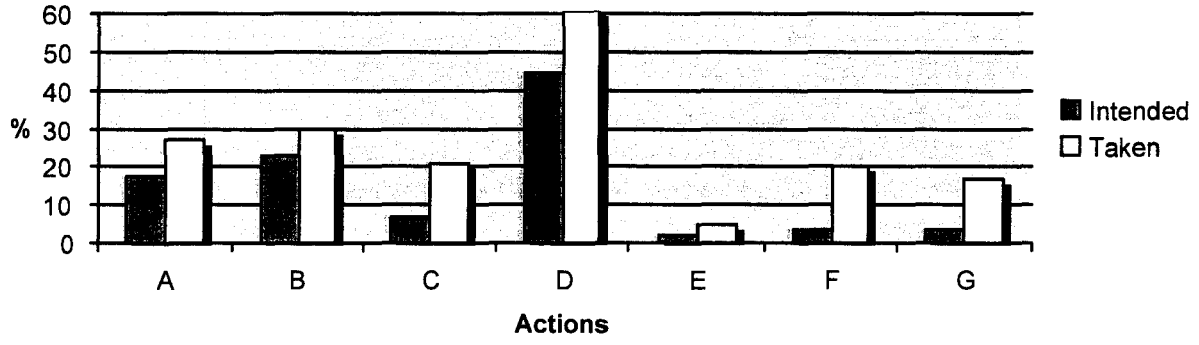
n = 203

Graph 10. (Student Evaluation Item 18). New or Different Action (Unit 3-Responding to HazMat)



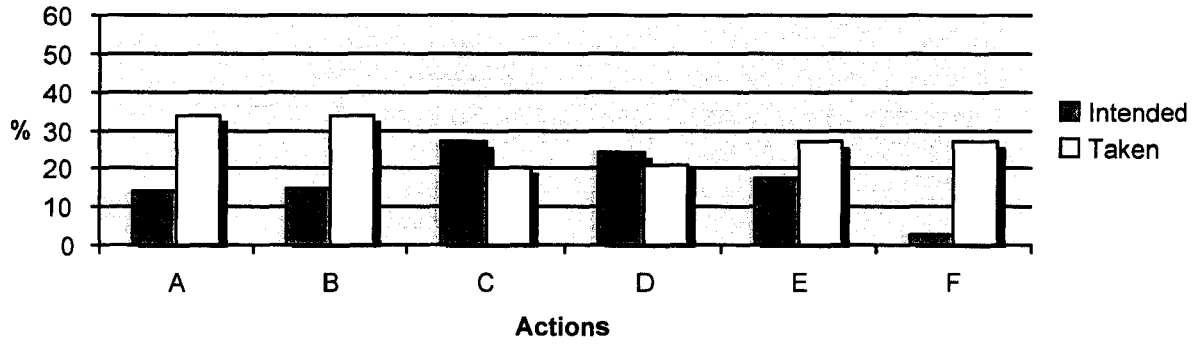
Distinctly small numbers for planning and procedure implementation (D-F) while pluralities for planning and information sourcing (A & B). It is perhaps more difficult to do the former than the latter and also probably less likely to occur.

Graph 11. (Survey Item 40/Evaluation Item 16). Comparing Intended with Taken New or Different Actions (Unit 1-Understanding HazMat)



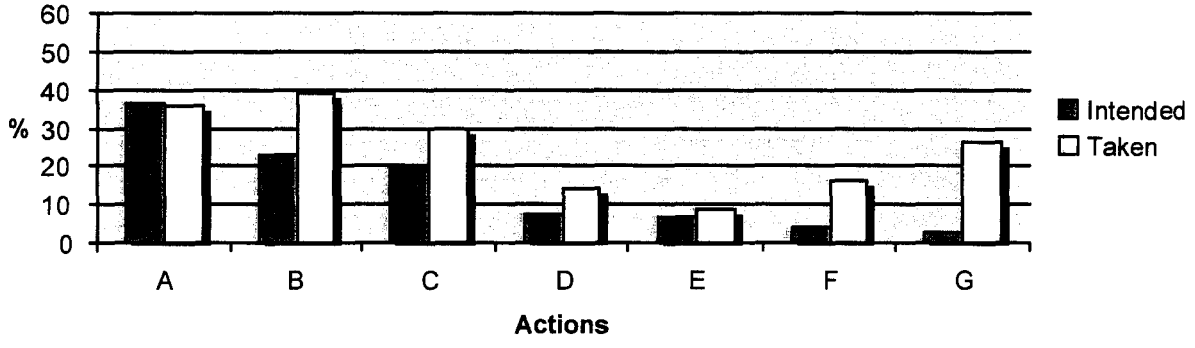
Although there are differences between *intended* and *taken* actions, the general size and distribution of bars on the graph indicate that, on the whole, trainees did what they said they would do. Of course, since *taken* actions was not limited to only one choice on the survey, the percentages for all these tasks are higher than are those for *intended* tasks.

Graph 12. (Survey Item 41/Evaluation Item 17). Comparing Intended With Taken New or Different Actions (Unit 2-Recognizing HazMat)



In Unit 2, there is a greater degree of disagreement between *intended* and *taken* actions. In particular, Actions A (Avoid contact contaminations) and B (Review exposure reporting procedures) had a far greater percentage of trainees indicate that they *took* these actions as opposed to those who said they *intended* to take the actions. An odd result was Action F (Does not apply). More than a quarter of trainees said that none of the other Unit 2 actions applied. It is unclear if this reflects a misunderstanding on the part of trainees or if there are actions that should have been listed but were not.

Graph 13. (Survey Item 42/Evaluation Item 18). Comparing Intended with Taken New or Different Actions (Unit 3-Responding to HazMat)



As expected, more actions were *taken* than *intended*, especially Actions B (Conduct pre-incident plans), C (Analyze a potential hazmat incident), and F (Establish proper decon procedures). Oddly, 10 times as many trainees selected Action G (Does not apply) for an action *taken* as opposed to an action *intended*.

Actions Summary

Comparing *intended* with *taken* actions is difficult because in the case of the former, trainees could select only one action, whereas in the case of the latter, they could select as many actions as they had actually taken. Thus, while *intended* actions summed to 100%, *taken* actions could go as high as 600% (assuming every single trainee selected every single action per unit, excluding "Does not apply"). However, certain observations can be made. On the whole, trainees took action, frequently more action than they initially intended to take. This is evidence that the course has a positive effect on job performance. An investigation needs to be made to determine why so many trainees selected "Does not apply" in all three units (especially Units 2 and 3).

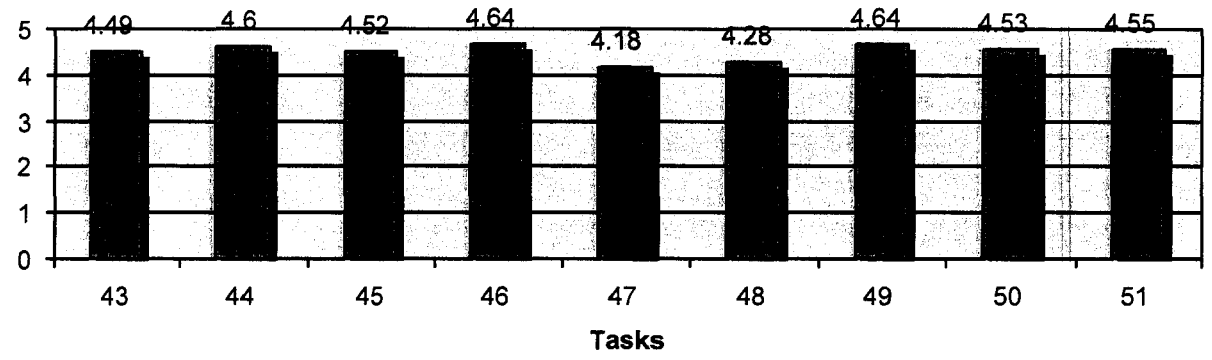
COURSE EVALUATIONS

All trainees, not just those participating in the follow up interviews, completed course evaluations. In order to make statistical comparisons possible, the five categories of ratings (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) were assigned numbers 5 through 1, respectively.

Table 14. (Survey Items 43-51). General Reactions to Course

Item #	Item	N	Mean	sd
43	Course sections well organized	383	4.49	.592
44	Media enhanced the program	383	4.60	.566
45	Many opportunities to participate	383	4.52	.604
46	Training will help do job more safely	383	4.64	.522
47	Adequate time to cover each topic	383	4.18	.920
48	Course content was clear	383	4.28	.659
49	Quality of instruction was good	381	4.64	.528
50	Quality of course was good	382	4.53	.573
51	Will utilize knowledge gained	383	4.55	.567

Graph 14. (Survey Items 43-51). General Reactions to Course



While all ratings are high, the 4.18 and 4.28 ratings for Items 47 and 48, respectively, are significantly lower than ratings for the highest items (Cohen's $d \approx .5500$; Medium). It would seem that the lowest level of satisfaction was with the allotment of time devoted to individual topics. These lower ratings are positive, but their lower rankings invite investigation to determine which topics were perceived to necessitate more time for coverage and if course content might be presented in a clearer manner or time allotments within the course be redistributed with more time given to higher priority tasks.

Table 15. (Survey Items 52-58). Reactions/Recommendations: Quality of Presentation

Item #	Item	N	Mean	sd
52	Understand hazmats	384	4.47	.586
53	Health and safety	382	4.53	.568
54	Medical surveillance	381	4.30	.718
55	Recognition & identification	381	4.51	.583
56	Physical properties	381	4.36	.687
57	Scene management	382	4.35	.646
58	Pre-Incident planning	382	4.39	.642

Graph 15. (Survey Items 52-58). Reactions/Recommendations: Quality of Presentation

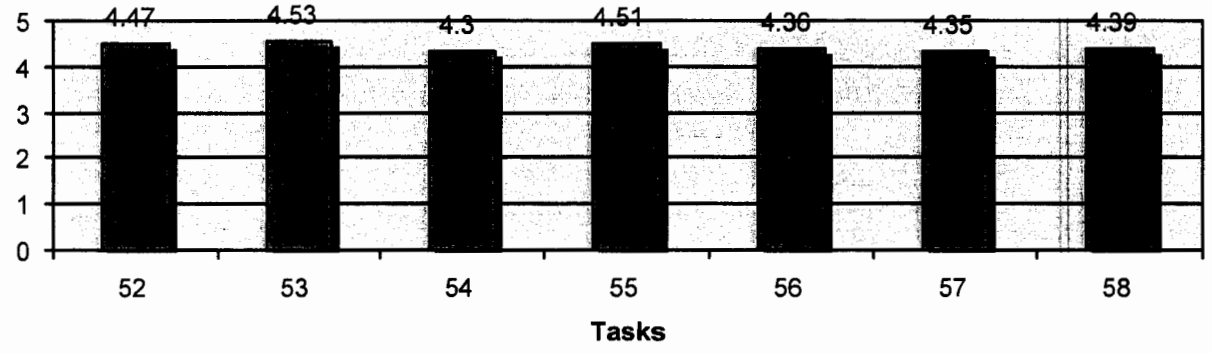


Table 16. (Survey Items 59-65). Reactions/Recommendations: Information Covered

Item #	Item	N	Mean	sd
59	Understand hazmats	384	4.52	.604
60	Health and safety	382	4.52	.583
61	Medical surveillance	382	4.31	.710
62	Recognition & identification	382	4.54	.559
63	Physical properties	381	4.43	.644
64	Scene management	381	4.40	.632
65	Pre-Incident planning	382	4.43	.648

Graph 16. (Survey Items 59-65). Reactions/Recommendations: Information Covered

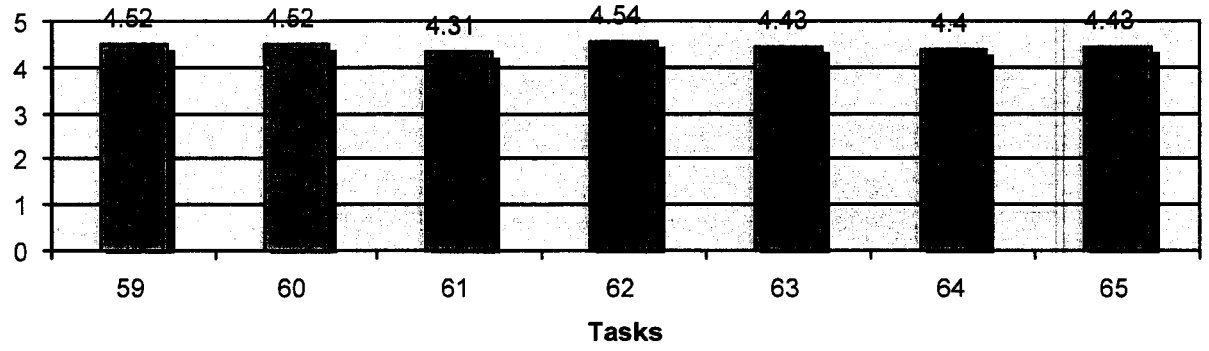
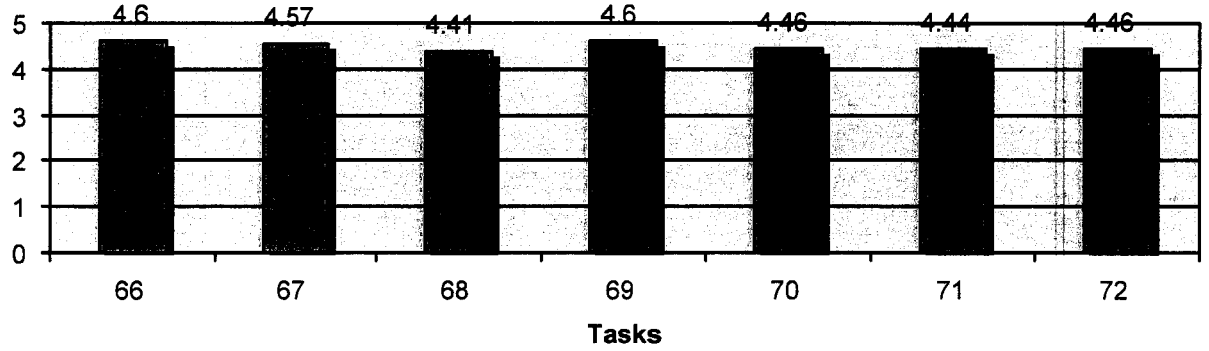


Table 17. (Survey Items 66-72). Reactions/Recommendations: Usefulness in Doing Your Job

Item #	Item	N	Mean	sd
66	Understand hazmats	383	4.60	.556
67	Health and safety	381	4.57	.550
68	Medical surveillance	380	4.41	.705
69	Recognition & identification	380	4.60	.557
70	Physical properties	380	4.46	.634
71	Scene management	381	4.44	.632
72	Pre-Incident planning	381	4.46	.650

Graph 17. (Survey Items 66-72). Reactions/Recommendations: Usefulness in Doing Your Job



Tables 15-17 and Graphs 15-17 provide clear evidence that trainees perceived the course to be well presented, informative, and useful/helpful for job performance. Differences in ratings between items within the three tables were, at most, of a small-to-medium size, and the majority were indistinguishable from each other.

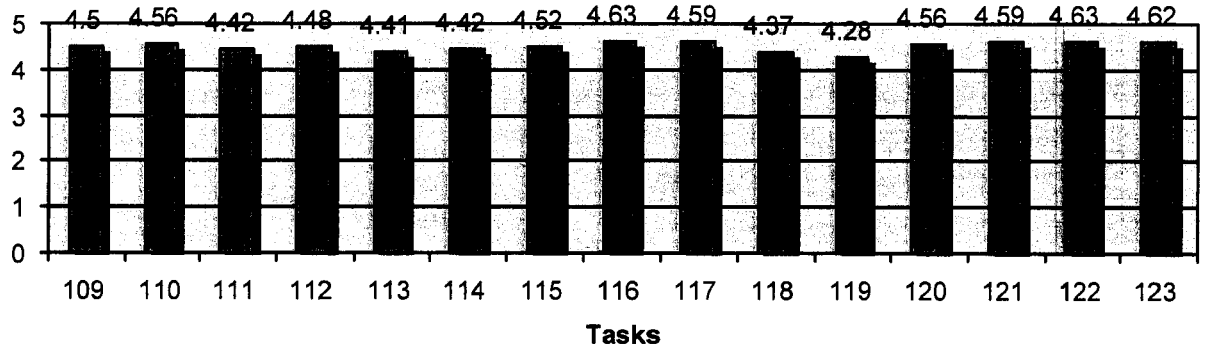
Tables 18-28 are located in Appendix A. These provide details for the summary evaluation results found in Tables 29 and 30 below.

Table 29. (Survey Items 109-123). Course Evaluation

Item #	Item	N	Mean	sd
109	Smooth information presentation flow	371	4.50	.603
110	Content matched course objectives	370	4.56	.573
111	Content matched my objectives	370	4.42	.671
112	Workshop appropriate for my level of experience	370	4.48	.634
113	Workshop was interesting	369	4.41	.670
114	Information was well paced	370	4.42	.761
115	Appropriate mix of training methods	370	4.52	.655
116	Visual aids used appropriately	370	4.63	.552
117	Instructions easy to follow	370	4.59	.593
118	Appropriate time for each topic	370	4.37	.796
119	Appropriate course length	370	4.28	.896
120	Covered skills emergency responders need	370	4.56	.644
121	Instructors modeled what was taught	369	4.59	.588
122	Course will help me respond more effectively	369	4.63	.527
123	I will use course skills on the job	369	4.62	.525

Note: 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = Strongly Disagree

Graph 18. (Survey Items 109-123). Course Evaluation



Item 119, though still relatively high (4.28), was significantly lower than the highest-rated items 116 and 122 (Cohen's $d \approx .4700$; nearly Medium). Item 119's large standard deviation indicates that there was greater variability with this item's responses. Apparently, some trainees disagreed with the notion that the course length was appropriate, although the majority felt that it was. This might warrant some investigation, particularly regarding which parts of the course trainees feel might require more time.

Table 30. (Survey Item 124). Overall Course Evaluation

N	Mean	sd
367	4.64	.554

Note: 5 = Very Good; 4 = Good; 3 = Average; 2 = Poor; 1 = Very Poor

Evaluation Summary

On the whole, trainees were satisfied and impressed with the course. The average score for the course fell between "Good" and "Very Good" and actually leaned closer to "Very Good." Tables 14 through 30 all indicate very high levels of satisfaction with all aspects of the course (instruction, instructor, curriculum, pacing, etc.).

VA, PA, TN, MA—COMPARISONS WITH EACH OTHER

TESTS

The trainees took a 50-item test immediately before instruction and took the same test immediately following instruction. What follows is a presentation and discussion of the results by each state.

Table 31. Pre-Course Test Results and Descriptive Statistics

					95% Confidence Interval			
Site	**N**	**Mean**	**sd**	**Std. Error**	**Lower**	**Upper**	**Min**	**Max**
VA	111	52.88	8.853	.840	51.22	54.55	34	70
PA	240	51.42	9.187	.593	50.26	52.59	30	80
TN	28	56.00	12.661	2.393	51.09	60.91	26	74
MA	62	54.55	10.024	1.273	52.00	57.09	36	78
Total	*441*	*52.52*	*9.552*	*.455*	*51.63*	*53.42*	*26*	*80*

Graph 19. Pre-Course Test Results

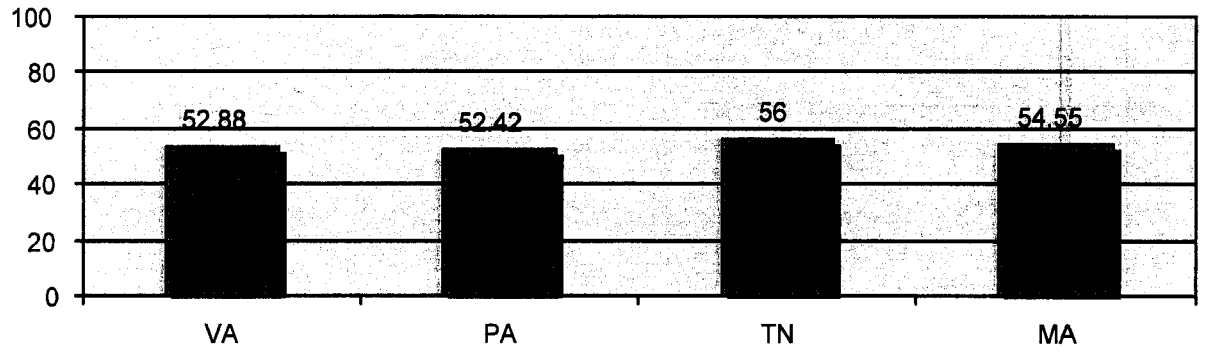


Table 32. Levene's Test of Homogeneity of Variances for Pre-Course Test Results

Levene Statistic	**df1**	**df2**	**Sig.**[3]
1.684	3	437	.170

[3] "Significance" refers to the probability that a particular statistic would occur by chance. Conventionally, probabilities less than .05 (i.e., odds greater than 20:1) are considered rare enough to be classified "Significant."

Table 33. ANOVA for Pre-Course Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	896.563	3	298.854	3.327	.020
Within Groups	39251.482	437	89.820		
Total	*40148.045*	*440*			

As expected, the means were all in the "F" range, signifying the trainees' general lack of understanding of the course content prior to the start of the course. When statistically comparing groups, normally it is important that the groups not differ much in size. In order to determine whether group size differences adversely affect statistical calculation, a Levene's Test is run (Table 32). The "Sig." column gives the probability that a significant difference in variance exists among the groups compared (see Footnote 3). Levene's test indicates that it is safe to compare the groups even though they differ in size.

Table 33 gives the results of the Analysis of Variance (ANOVA). As with Table 32, here too the "Sig." column is what is important. A statistic of .05 or less would indicate that there is very likely a significant difference, somewhere between at least two of the groups, in terms of the test scores; this is the case here. However, the ANOVA does not indicate where the significant group differences might be. To make that determination, *post-hoc* tests are performed.

Table 34. *Post-hoc* Analysis (Gabriel Test) on Pre-Course Test Results

(I) Site	(J) Site	Mean Difference (I-J)	Std. Error	Sig.
VA	PA	1.458	1.088	.679
	TN	-3.117	2.004	.475
	MA	-1.666	1.503	.839
PA	VA	-1.458	1.088	.679
	TN	-4.575	1.893	.043
	MA	-3.123	1.350	.089
TN	VA	3.117	2.004	.475
	PA	4.575	1.893	.043
	MA	1.452	2.158	.983
MA	VA	1.666	1.503	.839
	PA	3.123	1.350	.089
	TN	-1.452	2.158	.983

TN (56.00) differed significantly from PA (51.42); these were the only two sites to differ significantly from each other. This significant difference is either a function of the size of the difference in test scores, population sizes, or both. In any case, caution is warranted when making any further comparisons between TN and PA because they might not represent similar populations of fire fighters.

Table 35. Effect Size (Cohen's *d*) of Differences between Groups on Pre-Course Test Scores

	VA	PA	TN
VA	--		
PA	.1607	--	
TN	.3209	**.4772**	--
MA	.1798	.3343	.1330

Table 35 indicates that there was a nearly medium-sized difference between TN and PA; the effect was Small-to-Medium between TN and VA and between PA and MA.

Table 36. Post-Course Test Results and Descriptive Statistics

					95% Confidence Interval			
Site	**N**	**Mean**	**sd**	**Std. Error**	**Lower**	**Upper**	**Min**	**Max**
VA	110	86.82	7.256	.692	85.45	88.19	66	100
PA	238	89.14	8.444	.547	88.06	90.22	66	100
TN	32	94.75	4.303	.761	93.20	96.30	78	100
MA	62	88.13	7.421	.942	86.24	90.01	72	100
Total	*442*	*88.83*	*7.995*	*.380*	*88.08*	*89.58*	*66*	*100*

Graph 20. Post-Course Test Results

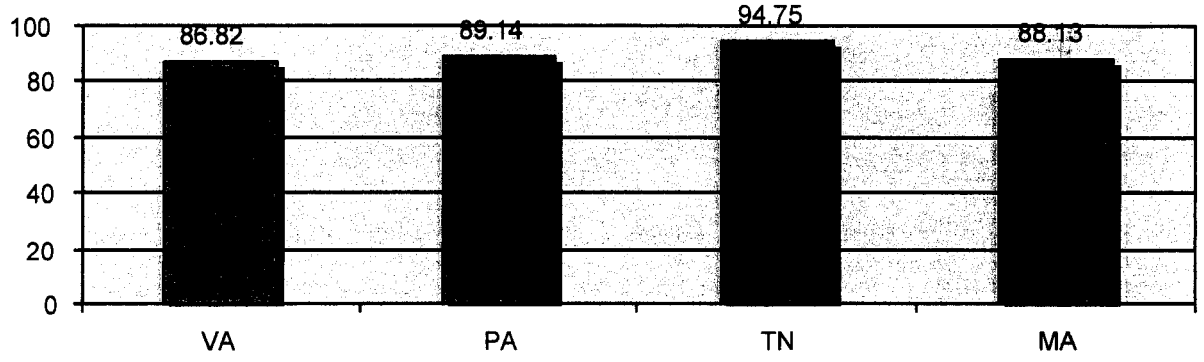


Table 37. Levene's Test of Homogeneity of Variances for Post-Course Test Results

Levene Statistic	df1	df2	Sig.
8.437	3	438	.000

Table 38. ANOVA for Post-Course Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1620.458	3	540.153	8.905	.000
Within Groups	26568.474	438	60.659		
Total	*28188.932*	*441*			

Table 39. Robust Tests of Equality of Means for Post-Course Test Results

Test	Statistic	df1	df2	Sig.
Welch	21.489	3	127.972	.000
Brown-Forsythe	11.831	3	287.852	.000

Also as expected, the Post-Course means were all very high (high B's and one A). Levene's Test (Table 37) yielded a significant result, indicating that the groups did not have equal variances (essentially that means that the distributions of scores for the groups were not the same). This has implications for the kind of *post-hoc* analysis to be performed.

Table 38 gives the results of the Analysis of Variance (ANOVA). As with Table 37, here too the "Sig." column yields a significant result, indicating that at least two of the groups differ significantly from each other on their mean test scores. However, because of the significant result found by the Levene's Test (Table 37), Table 39 provides more accurate estimations of the true significance of the ANOVA. Both the Welch and the Brown-Forsythe give significant results. (It might appear that the Significance results are identical, but while the statistical analysis program calculates results out to eight decimal places, only the first three decimal places are reported.)

Table 40. *Post-hoc* Analysis (Games-Howell Procedure) on Post-Course Test Results

(I) Site	(J) Site	Mean Difference (I-J)	Std. Error	Sig.
VA	PA	-2.325	.882	.044
	TN	-7.932	1.028	.000
	MA	-1.311	1.169	.677
PA	VA	2.325	.882	.044
	TN	-5.607	.937	.000
	MA	1.014	1.090	.789
TN	VA	7.932	1.028	.000
	PA	5.607	.937	.000
	MA	6.621	1.211	.000
MA	VA	1.311	1.169	.677
	PA	-1.014	1.090	.789
	TN	-6.621	1.211	.000

In order to realize meaningful results, a Games-Howell procedure had to be used in the *post-hoc* analysis. Games-Howell allows for comparisons between groups that do not share equal sizes and variances. TN (94.75) differed significantly from all states. It is unclear whether this is purely a function of the superior test results or if it also reflects the small size of the TN group. This significant difference is either a function of the size of the difference in test scores, population sizes, or both. In any case, caution is warranted when making any further comparisons between TN and PA because they might not represent similar populations of fire fighters. Additionally, although PA (89.14) and VA (86.82) only differed by fewer than three points, the score difference was significant.

In order to determine the magnitude of the superiority of TN test scores to those of the other states, effect size statistics were calculated (Table 41).

Table 41. Effect Size (Cohen's *d*) of Differences between Groups on Post-Course Test Scores

	VA	PA	TN
VA	--		
PA	.2868	--	
TN	**1.1809**	**.6948**	--
MA	.1791	.1225	**1.0124**

TN's test scores were much higher than those of the other three states; differences were Very Large (VA), Large (MA), and Medium-to-Large (PA). There was only a small difference between PA and VA, favoring the former.

Table 42. Test Score Gains from Pre- to Post-Course

Site	Post-	Pre-	Gain
VA	86.82	52.88	33.94
PA	89.14	51.42	37.12
TN	94.75	56.00	38.75
MA	88.13	54.55	33.58

Graph 21. Test Score Gains

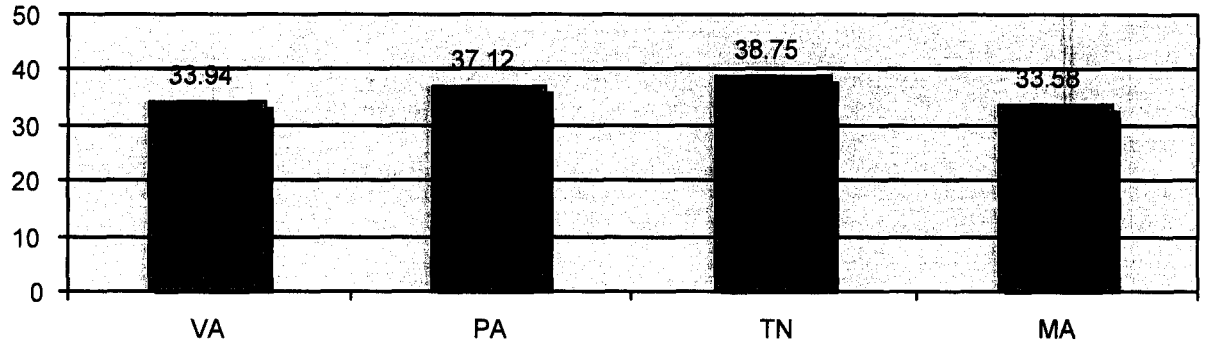


Table 43. Effect Size (Cohen's *d*) of Differences between Groups on Test Score Gains

	VA	PA	TN
VA	--		
PA	.3705	--	
TN	**.6126**	.1887	--
MA	.0434	.4024	**.6293**

Medium-to-Large sized gains distinguished TN from both MA and VA, but not from PA. It is interesting to note that MA and VA had larger group sizes than TN, but PA's was the largest of all four, thus suggesting that there were substantive, rather than artifactual, differences in test score gains. In other words, there were quite possibly real differences in learning gains between TN and MA & VA. PA differed from MA and VA on only a Small-to-Medium level.

Table 44. Follow Up Test Results and Descriptive Statistics

					95% Confidence Interval			
Site	**N**	**Mean**	**sd**	**Std. Error**	**Lower**	**Upper**	**Min**	**Max**
VA	53	69.85	8.104	1.113	67.62	72.08	48	86
PA	47	68.04	7.313	1.067	65.90	70.19	50	84
TN	24	72.17	10.745	2.193	67.63	76.70	52	86
MA	86	84.37	6.640	.716	82.95	85.80	68	94
Total	*210*	*75.66*	*10.630*	*.734*	*74.21*	*77.10*	*48*	*94*

Graph 22. Follow Up Test Results

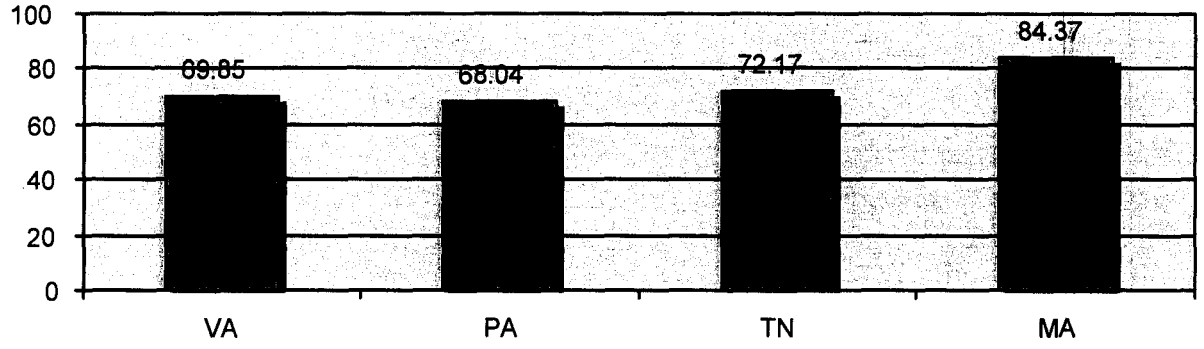


Table 45. Levene's Test of Homogeneity of Variances for Follow Up Test Results

Levene Statistic	**df1**	**df2**	**Sig.**
4.270	3	206	.006

Table 46. ANOVA for Follow Up Test Results

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	11337.181	3	3779.060	63.404	.000
Within Groups	12278.134	206	59.603		
Total	*23615.314*	*209*			

Table 47. Robust Tests of Equality of Means for Follow Up Test Results

Test	Statistic	df1	df2	Sig.
Welch	72.911	3	74.966	.000
Brown-Forsythe	51.793	3	87.693	.000

Follow up means (Table 42) all were lower than the earlier Post-Course test means, indicating the memory for the information degraded over time. Levene's Test (Table 45) yielded a significant result, indicating that the groups did not have equal variances (essentially, the distributions of scores for the groups were not the same). This has implications for the kind of *post-hoc* analysis to be performed.

Table 46 gives the results of the Analysis of Variance (ANOVA). As with Table 45, here too the "Sig." column yields a significant result, indicating that at least two of the groups differ significantly from each other on their mean test scores. However, because of the significant result found by the Levene's Test (Table 45), Table 47 provides more accurate estimations of the true significance of the ANOVA. Both the Welch and the Brown-Forsythe give significant results. (It might appear that the significance results are identical, but while the statistical analysis program calculates results out to eight decimal places, only the first three decimal places are reported.)

Table 48. *Post-hoc* Analysis (Games-Howell Procedure) on Follow Up Test Results

(I) Site	(J) Site	Mean Difference (I-J)	Std. Error	Sig.
VA	PA	1.807	1.542	.646
	TN	-2.318	2.460	.782
	MA	-14.523	1.324	.000
PA	VA	-1.807	1.542	.646
	TN	-4.124	2.439	.344
	MA	-16.330	1.285	.000
TN	VA	2.318	2.460	.782
	PA	4.124	2.439	.344
	MA	-12.205	2.307	.000
MA	VA	14.523	1.324	.000
	PA	16.330	1.285	.000
	TN	12.205	2.307	.000

In order to realize meaningful results, a Games-Howell procedure had to be used in the *post-hoc* analysis. Games-Howell allows for comparisons between groups that do not share equal

sizes and variances. MA (84.37) differed significantly from all states; no other states differed significantly from each other. It is unclear why this might be the case.

In order to determine the magnitude of the superiority of MA test scores to those of the other states, effect size statistics were calculated (Table 49).

Table 49. Effect Size (Cohen's *d*) of Differences between Groups on Follow Up Test Scores

	VA	PA	TN
VA	--		
PA	.2338	--	
TN	.2579	.4797	--
MA	**2.0081**	**2.3722**	**1.5844**

Clearly, the Follow Up test scores of MA were superior to those of the other states. Even though it did not show on Table 46, the superiority of TN's score to PA's was of a nearly Medium size. It is unclear why there should be such superiority for MA's scores.

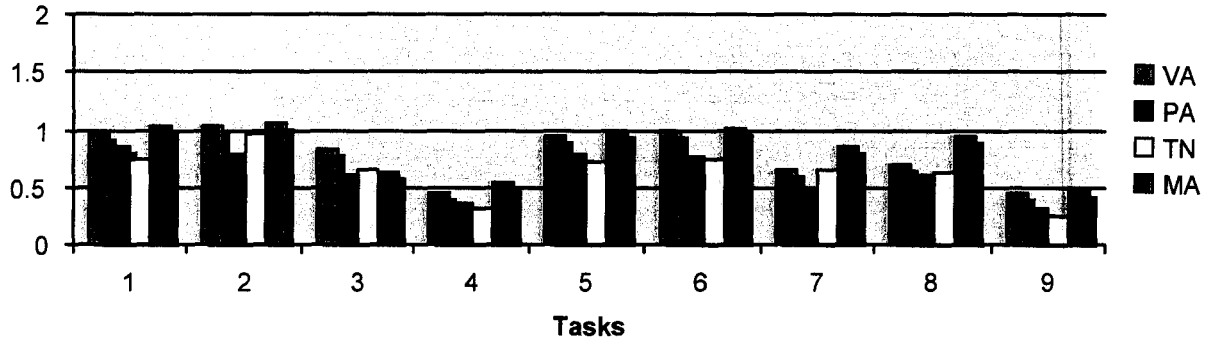
Tests Summary

The groups are not comparable. TN had superior Pre-Course, Post-Course, and Learning Gain scores; MA was hugely superior in terms of its Follow Up scores. There is nothing in the dataset to indicate why such differences might exist or to suggest how the groups might differ qualitatively from each other.

CONFIDENCE

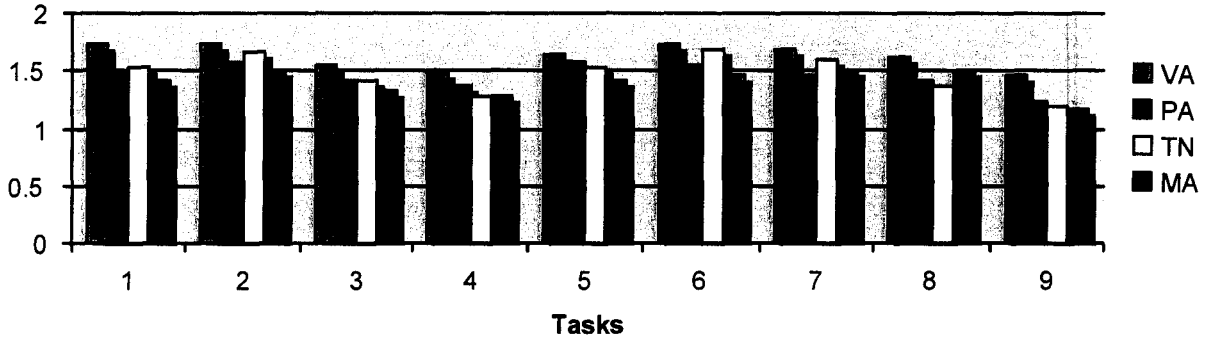
For both the Pre-Course and the Post-Course task confidence ratings listed and described below, the following numerical rating scale was used: Very Confidence = 2; Confident = 1; Not Confident = 0.

Graph 23. (Items 22-30) Pre-Course Confidence for Tasks 1-9



For each of the nine tasks, Pre-Course task confidence rarely broke 1.00, indicating a general lack of confidence on the part of trainees. This is to be expected. Of particular note is the rather obvious lower ratings for Tasks 4 and 9. Also, TN and PA appear, more often than not, to rate their Pre-Course task confidence lower than VA and MA.

Graph 24. (Items 31-39) Post-Course Confidence for Tasks 1-9



Confidence levels for Tasks 4 and 9 are still somewhat lower than those for the other tasks, however most of the groups hover at about 1.5, a figure exactly between Very Confident and Confident. Also, VA has the highest confidence ratings for all nine tasks.

Confidence Summary

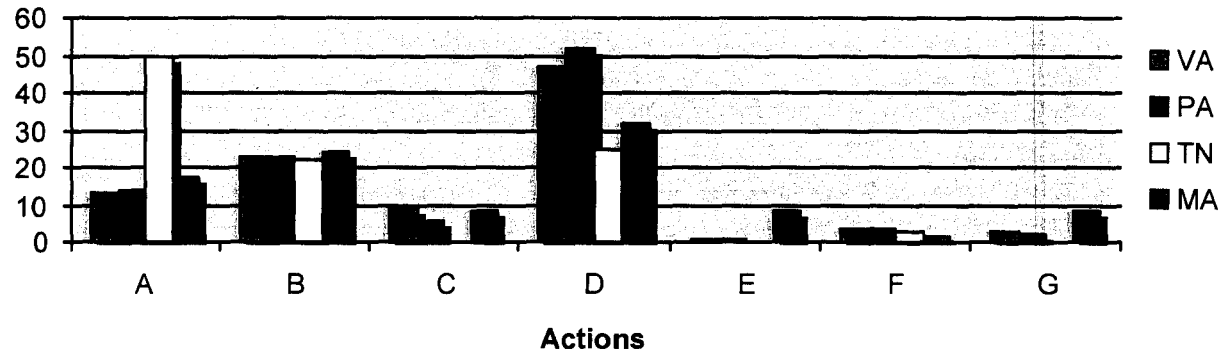
From Pre- to Post-Course, confidence levels rose. While the four groups did not differ greatly from each other, VA had the overall lowest Pre-Course ratings and the highest Post-Course ratings; it is unclear why this should be the case.

ACTIONS

Table 50. (Survey Item 40). New or Different Action (Unit 1-Understanding HazMat)

Letter	Item	Frequency	Percent
A	*Review chemical & physical properties*	*66*	*17.2*
	VA	14	13.0
	PA	24	13.9
	TN	16	50.0
	MA	12	17.1
B	*Routinely discuss most common hazmats*	*88*	*23.1*
	VA	25	23.1
	PA	39	22.5
	TN	7	21.9
	MA	17	24.3
C	*Analyze a hazmat incident*	*25*	*6.5*
	VA	10	9.3
	PA	9	5.2
	TN	0	0.0
	MA	6	8.6
D	*Walk through first due area*	*171*	*44.6*
	VA	51	47.2
	PA	90	52.0
	TN	8	25.0
	MA	22	31.4
E	*Review HAZWOPER*	*8*	*2.1*
	VA	1	0.9
	PA	1	0.6
	TN	0	0.0
	MA	6	8.6
F	*Keep records of responses*	*12*	*3.1*
	VA	4	3.7
	PA	6	3.5
	TN	1	3.1
	MA	1	1.4
G	*Does not apply*	*13*	*3.4*
	VA	3	2.8
	PA	4	2.3
	TN	0	0.0
	MA	6	8.6

Graph 25. (Survey Item 40). New or Different Action (Unit 1-Understanding HazMat)



As evidenced by Table 50 and Graph 26, TN trainees were far more likely to select Action A (Review chemical & physical properties) compared to the other three groups. The only other Action that exhibited a significantly different percentage of responses was Action D (Walk through first due area); in this case, VA and PA trainees were more likely to take this action compared to TN and MA trainees.

Table 51. (Survey Item 41). New or Different Action (Unit 2-Recognizing HazMat)

Letter	Item	Frequency	Percent
A	*Avoid contaminations*	*54*	*14.1*
	VA	14	13.0
	PA	24	13.9
	TN	6	18.8
	MA	10	14.2
B	*Review exposure reporting procedures*	*57*	*14.9*
	VA	13	12.0
	PA	30	17.3
	TN	3	9.4
	MA	11	15.7
C	*Report signs of exposure*	*103*	*26.9*
	VA	26	24.1
	PA	46	26.6
	TN	11	34.4
	MA	20	28.6
D	*Keep records of responses*	*92*	*24.1*
	VA	32	29.6
	PA	37	21.4
	TN	4	12.5
	MA	19	27.1
E	*Decontaminate clothing/equipment*	*67*	*17.4*

	VA	21	19.4
	PA	33	19.1
	TN	8	25.0
	MA	5	7.1
F	*Does not apply*	*10*	*2.6*
	VA	2	1.9
	PA	3	1.7
	TN	0	0.0
	MA	5	7.1

Graph 26. (Survey Item 41). New or Different Action (Unit 2-Recognizing HazMat)

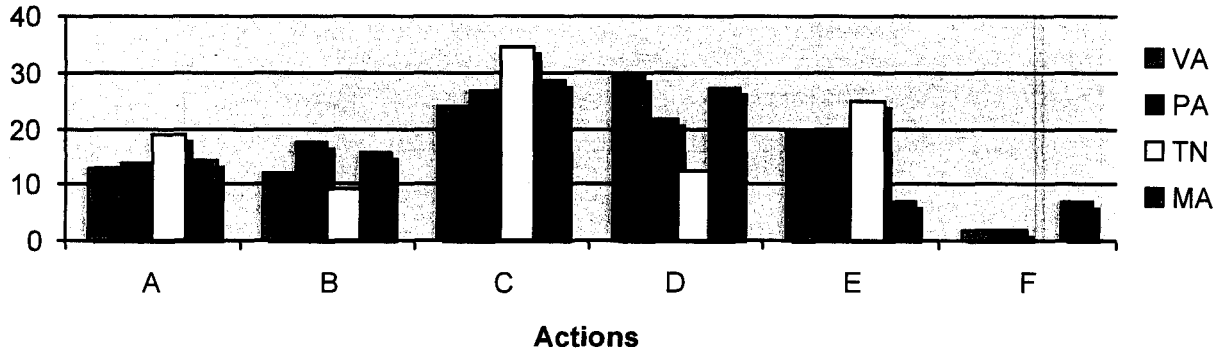
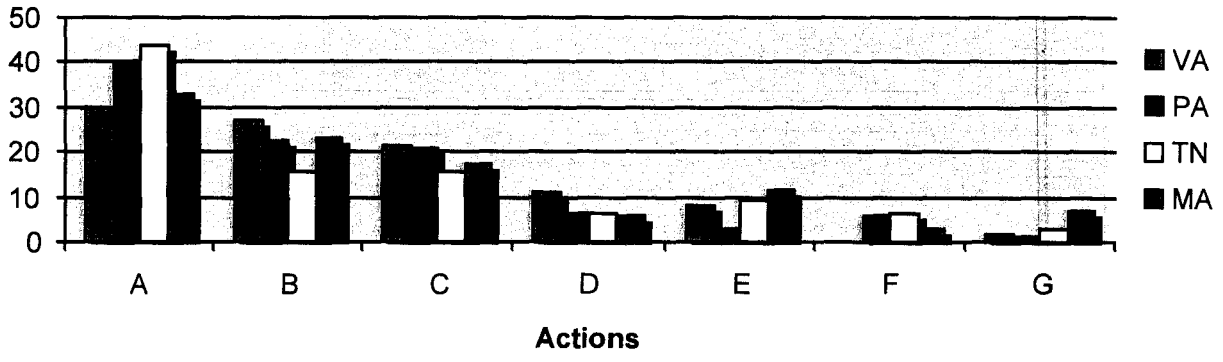


Table 52. (Survey Item 42). New or Different Action (Unit 3-Responding to HazMat)

Letter	Item	Frequency	Percent
A	*Refer to hazmat info sources*	*139*	*36.3*
	VA	32	29.6
	PA	70	40.5
	TN	14	43.8
	MA	23	32.9
B	*Conduct pre-incident plans*	*89*	*23.2*
	VA	29	26.9
	PA	39	22.5
	TN	5	15.6
	MA	16	22.9
C	*Analyze potential hazmat incident*	*76*	*19.8*
	VA	23	21.3
	PA	36	20.8
	TN	5	15.6
	MA	12	17.1
D	*Plan a hazmat response*	*29*	*7.5*
	VA	12	11.1
	PA	11	6.4

	TN	2	6.2
	MA	4	5.7
E	*Implement the plan*	*25*	*6.5*
	VA	9	8.3
	PA	5	2.9
	TN	3	9.4
	MA	8	11.4
F	*Establish proper decon procedures*	*15*	*3.9*
	VA	1	0.9
	PA	10	5.8
	TN	2	6.2
	MA	2	2.9
G	*Does not apply*	*10*	*2.6*
	VA	2	1.9
	PA	2	1.2
	TN	1	3.1
	MA	5	7.1

Graph 27. (Survey Item 42). New or Different Action (Unit 3-Responding to HazMat)



All four groups followed the same basic pattern: Actions declined in popularity as one progressed from A to G. There appears to be no strong group differences within Actions with the possible exception of TN and VA in Action A (Refer to hazmat info sources).

Actions Summary

Bar graphs illustrate percentage differences of the four groups in terms of their members choosing certain actions, but the percentages themselves must be taken carefully. The groups differ markedly in size, so that, for small TN, only a few individuals choosing or not choosing an action can make a large percentage difference. This caveat notwithstanding, the groups were fairly uniform in their selection of actions. The major exception was in Unit 1: TN was far more likely than the others to select Action A while VA and PA were far more likely than the others to select Action D (Plan a hazmat response).

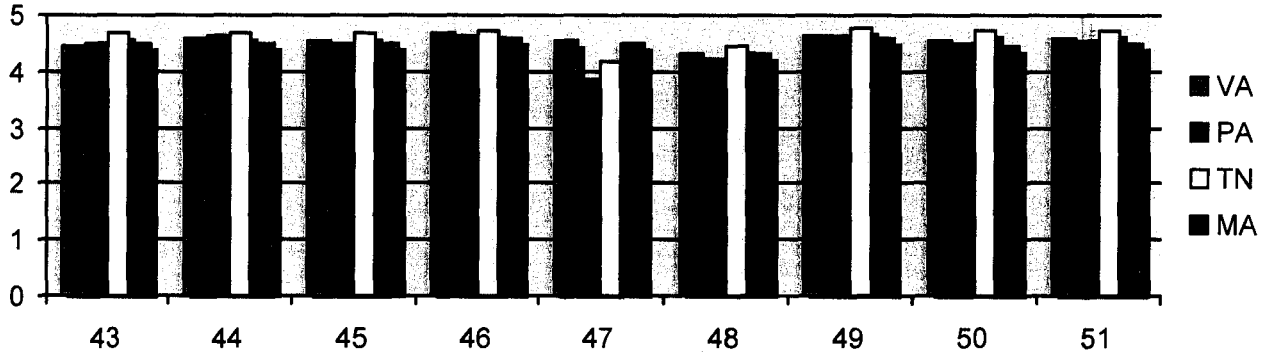
COURSE EVALUATIONS

Table 53. (Survey Items 43-51). General Reactions to Course

Item #	Item	N	Mean	sd
43	*Course sections well organized*	*383*	*4.49*	*.592*
	VA	108	4.43	.686
	PA	173	4.49	.567
	TN	32	4.69	.471
	MA	70	4.49	.531
44	*Media enhanced the program*	*383*	*4.60*	*.566*
	VA	108	4.58	.613
	PA	173	4.64	.529
	TN	32	4.66	.545
	MA	70	4.49	.583
45	*Many opportunities to participate*	*383*	*4.52*	*.604*
	VA	108	4.53	.648
	PA	173	4.51	.597
	TN	32	4.66	.483
	MA	70	4.50	.608
46	*Training will help do job more safely*	*383*	*4.64*	*.522*
	VA	108	4.69	.463
	PA	173	4.62	.544
	TN	32	4.72	.457
	MA	70	4.59	.577
47	*Adequate time to cover each topic*	*383*	*4.18*	*.920*
	VA	108	4.53	.662
	PA	173	3.84	1.016
	TN	32	4.19	.998
	MA	70	4.50	.631
48	*Course content was clear*	*383*	*4.28*	*.659*
	VA	108	4.31	.679
	PA	173	4.22	.681
	TN	32	4.44	.564
	MA	70	4.33	.607
49	*Quality of instruction was good*	*381*	*4.64*	*.528*
	VA	108	4.64	.571
	PA	173	4.63	.508
	TN	31	4.77	.497
	MA	69	4.61	.521
50	*Quality of course was good*	*382*	*4.53*	*.573*

	VA	108	4.56	.584
	PA	173	4.49	.587
	TN	31	4.71	.529
	MA	70	4.47	.531
51	*Will utilize knowledge gained*	*383*	*4.55*	*.567*
	VA	108	4.59	.512
	PA	173	4.52	.606
	TN	32	4.72	.457
	MA	70	4.49	.583

Graph 28. (Survey Items 43-51). General Reactions to Course



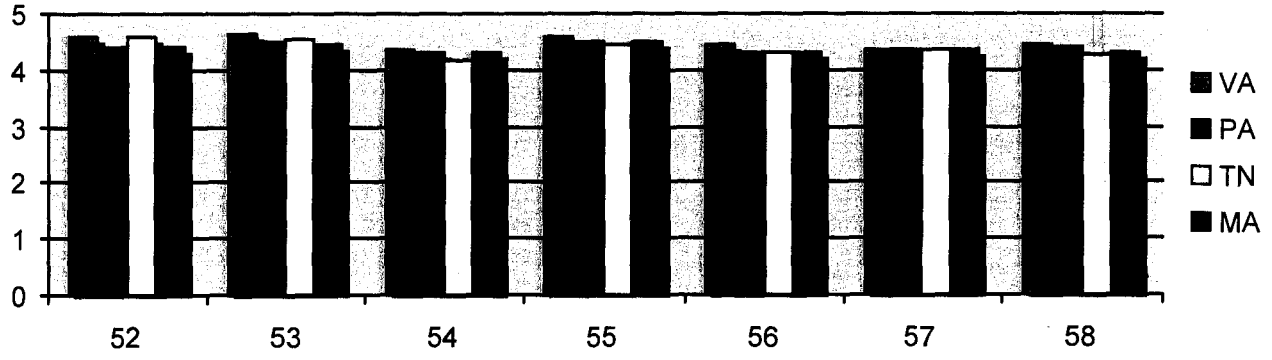
TN seems to have very slightly higher ratings for general reactions to the course than the other three groups, but there do not appear to be any significant differences among the groups on their ratings for any of the items except for Item 47 (Adequate time to cover each topic). Here, PA trainees rated the time to cover each topic as significantly less adequate. It is possible that there was a disruptive event particular to the PA training.

Table 54. (Survey Items 52-58). Quality of the Presentation

Item #	Item	N	Mean	sd
52	*Understanding hazmats*	*384*	*4.49*	*.592*
	VA	108	4.57	.567
	PA	173	4.39	.616
	TN	32	4.59	.499
	MA	71	4.42	.552
53	*Health and safety*	*382*	*4.53*	*.568*
	VA	108	4.63	.540
	PA	173	4.49	.577
	TN	32	4.56	.504
	MA	69	4.46	.608
54	*Medical surveillance*	*381*	*4.30*	*.718*
	VA	108	4.36	.767

	PA	173	4.29	.705
	TN	31	4.16	.688
	MA	69	4.29	.688
55	*Recognition and identification*	*381*	*4.51*	*.583*
	VA	108	4.59	.581
	PA	173	4.49	.587
	TN	31	4.44	.564
	MA	69	4.49	.585
56	*Physical properties*	*381*	*4.36*	*.687*
	VA	108	4.45	.647
	PA	173	4.33	.716
	TN	31	4.32	.702
	MA	69	4.29	.666
57	*Scene Management*	*381*	*4.35*	*.646*
	VA	108	4.36	.633
	PA	173	4.34	.677
	TN	32	4.34	.602
	MA	69	4.36	.618
58	*Pre-incident planning*	*381*	*4.39*	*.642*
	VA	108	4.45	.570
	PA	173	4.40	.680
	TN	32	4.28	.772
	MA	69	4.33	.586

Graph 29. (Survey Items 52-58). Quality of the Presentation

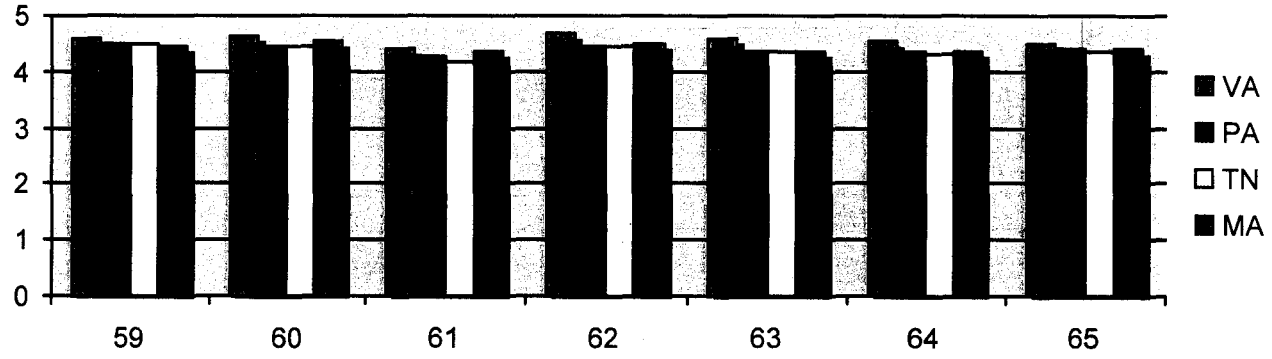


While VA tends to rate only slightly higher, there is no evidence of significant differences among the four groups on any of their ratings of the seven items.

Table 55. (Survey Items 59-65). Information Covered

Item #	Item	N	Mean	sd
59	*Understanding hazmats*	*384*	*4.52*	*.604*
	VA	108	4.60	.579
	PA	173	4.49	.634
	TN	32	4.50	.568
	MA	71	4.46	.581
60	*Health and safety*	*382*	*4.52*	*.583*
	VA	108	4.64	.555
	PA	173	4.46	.585
	TN	32	4.44	.619
	MA	69	4.54	.584
61	*Medical surveillance*	*382*	*4.31*	*.710*
	VA	108	4.41	.724
	PA	173	4.27	.689
	TN	32	4.19	.859
	MA	69	4.35	.660
62	*Recognition and identification*	*381*	*4.54*	*.559*
	VA	108	4.69	.502
	PA	173	4.47	.566
	TN	32	4.47	.567
	MA	69	4.49	.585
63	*Physical properties*	*381*	*4.43*	*.644*
	VA	108	4.60	.563
	PA	173	4.38	.686
	TN	31	4.34	.653
	MA	69	4.35	.614
64	*Scene management*	*381*	*4.40*	*.632*
	VA	108	4.54	.587
	PA	173	4.36	.664
	TN	32	4.31	.644
	MA	68	4.35	.593
65	*Pre-incident planning*	*382*	*4.43*	*.648*
	VA	108	4.51	.619
	PA	173	4.40	.663
	TN	32	4.38	.793
	MA	69	4.42	.579

Graph 30. (Survey Items 59-65). Information Covered



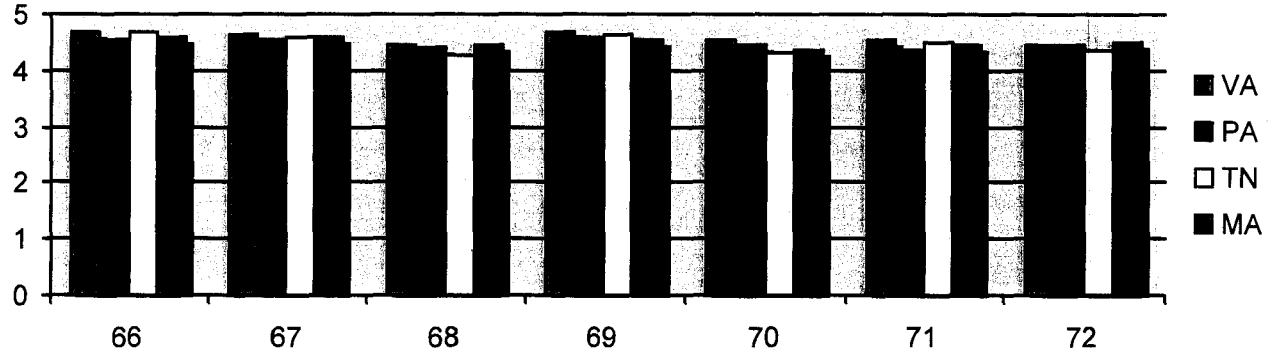
Again, while VA tends to rate only slightly higher, there is no evidence of significant differences among the four groups on any of their ratings of the seven items.

Table 56. (Survey Items 66-72). Usefulness in Doing Your Job

Item #	Item	N	Mean	sd
66	*Understanding hazmats*	*383*	*4.60*	*.556*
	VA	108	4.69	.467
	PA	173	4.53	.596
	TN	32	4.66	.545
	MA	70	4.59	.577
67	*Health and safety*	*381*	*4.57*	*.550*
	VA	108	4.63	.522
	PA	173	4.54	.555
	TN	32	4.59	.615
	MA	68	4.57	.555
68	*Medical surveillance*	*380*	*4.41*	*.705*
	VA	108	4.47	.662
	PA	171	4.39	.713
	TN	32	4.28	.888
	MA	68	4.44	.655
69	*Recognition and identification*	*380*	*4.60*	*.557*
	VA	108	4.69	.486
	PA	172	4.57	.583
	TN	32	4.62	.554
	MA	67	4.52	.587
70	*Physical properties*	*380*	*4.46*	*.634*
	VA	108	4.56	.568
	PA	172	4.45	.632
	TN	31	4.32	.702
	MA	68	4.37	.689

71	*Scene management*	*381*	*4.44*	*.632*
	VA	108	4.52	.572
	PA	173	4.38	.667
	TN	32	4.50	.622
	MA	68	4.44	.632
72	*Pre-incident planning*	*381*	*4.46*	*.650*
	VA	108	4.46	.647
	PA	173	4.47	.652
	TN	32	4.34	.745
	MA	68	4.49	.611

Graph 31. (Survey Items 66-72). Usefulness in Doing Your Job



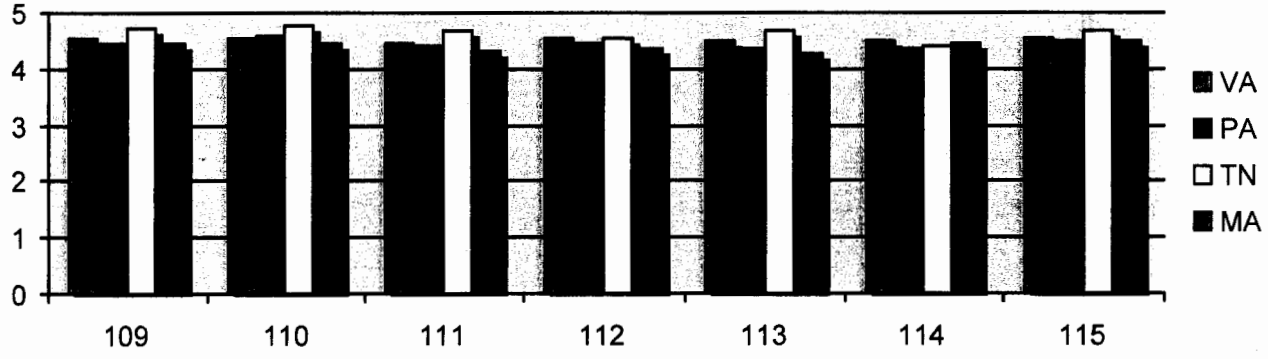
Again, while VA tends to rate only slightly higher, there is no evidence of significant differences among the four groups on any of their ratings of the seven items.

Table 57. (Survey Items 109-115). Course Evaluation

Item #	Item	N	Mean	sd
109	*Info presented flowed smoothly*	*371*	*4.50*	*.603*
	VA	105	4.53	.680
	PA	169	4.47	.567
	TN	31	4.71	.461
	MA	66	4.44	.611
110	*Content matched course objectives*	*370*	*4.56*	*.573*
	VA	105	4.56	.619
	PA	169	4.57	.563
	TN	31	4.77	.425
	MA	65	4.45	.560
111	*Content matched my objectives*	*370*	*4.42*	*.671*
	VA	105	4.43	.745
	PA	169	4.42	.651
	TN	31	4.68	.541

	MA	65	4.31	..635
112	*Workshop appropriate for my level of experience*	*370*	*4.48*	*.634*
	VA	105	4.58	.632
	PA	169	4.46	.617
	TN	31	4.55	.506
	MA	65	4.37	.720
113	*Workshop was interesting*	*369*	*4.41*	*.670*
	VA	105	4.50	.667
	PA	168	4.36	.659
	TN	31	4.68	.475
	MA	65	4.28	.740
114	*Information was well paced*	*370*	*4.42*	*.761*
	VA	105	4.50	.667
	PA	169	4.35	.818
	TN	31	4.39	.882
	MA	65	4.46	.686
115	*Workshop had appropriate mix of training methods*	*370*	*4.52*	*.655*
	VA	105	4.53	.680
	PA	169	4.49	.682
	TN	31	4.68	.475
	MA	65	4.48	.615

Graph 32. (Survey Items 109-115). Course Evaluation



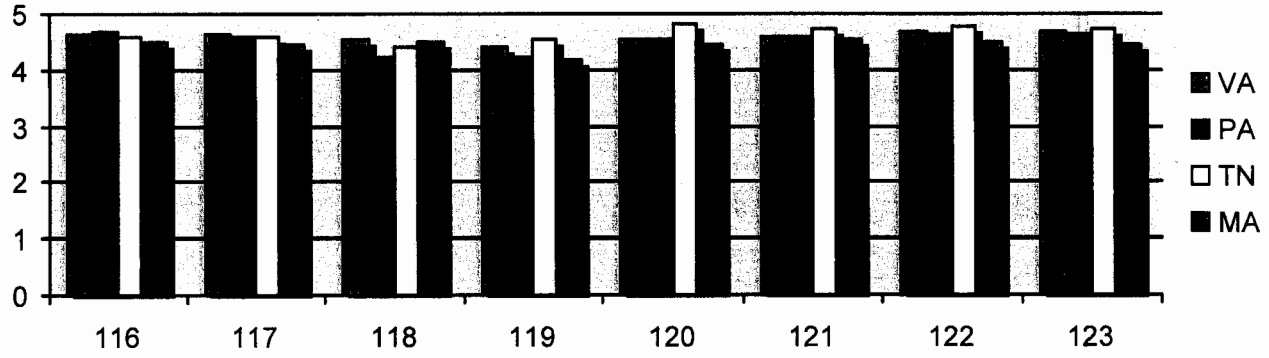
There is no evidence of any significant differences among the groups in terms of their course evaluation ratings.

Table 58. (Survey Items 116-123). Course Evaluation

Item #	Item	N	Mean	sd
116	*Visual aids were used appropriately*	*370*	*4.63*	*.552*
	VA	105	4.65	.571
	PA	169	4.67	.497
	TN	31	4.61	.495
	MA	65	4.49	.664
117	*Instructions were easy to follow*	*370*	*4.59*	*.593*
	VA	105	4.65	.554
	PA	169	4.60	.620
	TN	31	4.61	.495
	MA	65	4.45	.613
118	*Appropriate time allotted for each topic*	*370*	*4.37*	*.796*
	VA	105	4.56	.603
	PA	169	4.20	.915
	TN	31	4.42	.848
	MA	65	4.48	.615
119	*Overall length of course was appropriate*	*370*	*4.28*	*.896*
	VA	105	4.39	.766
	PA	169	4.20	.955
	TN	31	4.52	.677
	MA	65	4.18	.998
120	*Course covered skills most emergency responders need*	*370*	*4.56*	*.644*
	VA	105	4.56	.692
	PA	169	4.56	.653
	TN	31	4.81	.402
	MA	65	445	.613
121	*Instructors modeled what was taught*	*369*	*4.59*	*.588*
	VA	105	4.60	.582
	PA	169	459	.612
	TN	30	4.73	.450
	MA	65	4.54	.588
122	*Course will help me respond/train more effectively*	*369*	*4.63*	*.527*
	VA	105	4.68	.490
	PA	168	4.63	.531
	TN	31	4.77	.425
	MA	65	4.48	.589
123	*I will practice and use skills from this course*	*369*	*4.62*	*.525*
		105	4.67	.494
		169	4.62	.512

31	4.74	.445
64	4.47	.616

Graph 33. (Survey Items 116-123). Course Evaluation

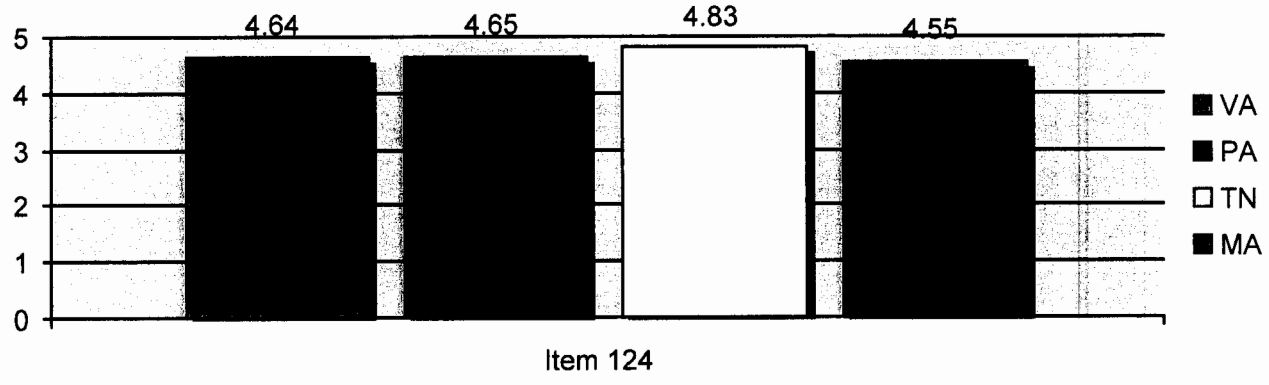


There is no evidence of any significant differences among the groups in terms of their course evaluation ratings.

Table 59. (Survey Item 124). Overall Course Evaluation

Item #	Group	N	Mean	sd
124	*Total*	*367*	*4.64*	*.554*
	VA	105	4.64	.606
	PA	168	4.65	.526
	TN	29	4.83	.384
	MA	65	4.55	.587

Graph 34. (Survey Item 124). Overall Course Evaluation



There is no evidence of any significant differences among the groups in terms of their overall course evaluation ratings.

Evaluation Summary

All four groups rated the course positively and were indistinguishable from each other; no substantive differences.

RECRUITS (VA, PA, MD) vs INCUMBENTS (TN, MA, TX)

TESTS

Table 60. *t*-Test of FRO Pre-Course Test Result Group Differences

Tenure	N	Mean	sd	Cohen's *d*	Effect Size
Recruits	393	51.85	9.109	.3377	Small
Incumbents	124	48.06	16.214		

Both groups scored poorly on the Pre-Course test. There is only a small difference in the scores which is only minimally meaningful.

Table 61. *t*-Test of Post-Course Test Result Group Differences

Tenure	N	Mean	sd	Cohen's *d*	Effect Size
Recruits	389	88.82	8.990	.2632	Small
Incumbents	127	91.04	6.433		

Both groups scored very well on the Post-Course test. There is only a small difference in the scores which is only minimally meaningful.

Table 62. *t*-Test of Knowledge Retention (Follow Up) Group Differences

Tenure	N	Mean	sd	Cohen's *d*	Effect Size
Recruits	120	69.40	7.589	1.4083	Very large
Incumbents	120	81.27	9.192		

There is a remarkable difference in knowledge retention between the two groups. Recruits retained far less information than did Incumbents. This disparity is probably best explained by the presumably richer and fuller experiential knowledge base that the older Incumbents (mean age 37.84 years) would have compared to the younger Recruits (mean age 27.47 years).

Tests Summary

While there is only a small difference between Recruits and Incumbents on the Pre-Course test (favoring the former), and a small difference on the Post-Course test (favoring the latter), Incumbents scored much higher on the Follow Up test. This finding can indicate a need for more active and visible supports for Recruits at their work sites in order to support their memory for, and use of, the information.

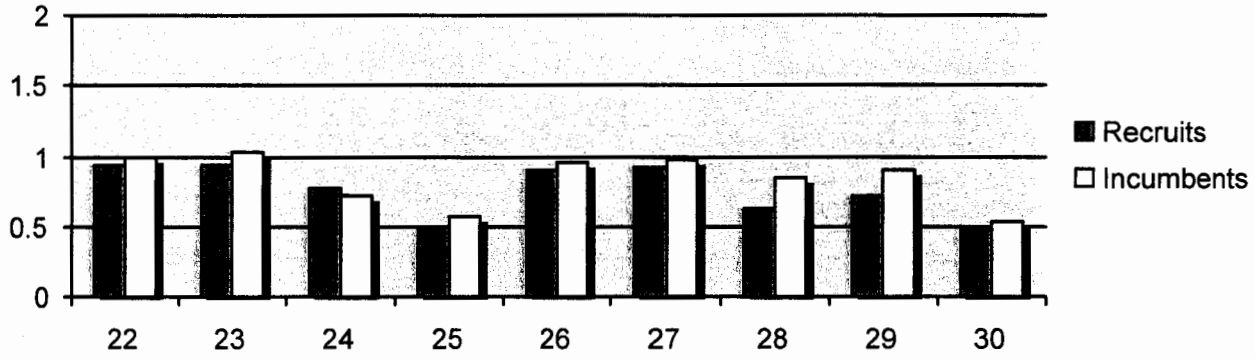
CONFIDENCE

Table 63. *t*-Tests of Pre-Course Task Confidence Ratings

Item	Tenure	N	Mean	sd	Cohen's *d*	Effect Size
22	Recruits	328	.93	.648	.0971	None
	Incumbents	136	.99	.537		
23	Recruits	328	.93	.704	.1469	None
	Incumbents	136	1.03	.620		
24	Recruits	328	.77	.743	.0700	None
	Incumbents	136	.72	.640		
25	Recruits	328	.50	.673	.1060	None
	Incumbents	136	.57	.629		
26	Recruits	328	.89	.680	.1056	None
	Incumbents	136	.96	.619		
27	Recruits	327	.91	.722	.0850	None
	Incumbents	136	.97	.666		
28	Recruits	328	.63	.708	.3027	Small
	Incumbents	136	.84	.658		
29	Recruits	328	.71	.703	.2638	Small
	Incumbents	136	.89	.629		
30	Recruits	328	.47	.663	.0904	None
	Incumbents	136	.53	.666		

Note: Very Confident = 2; Confident = 1; Not Confident = 0

Graph 35. Pre-Course Task Confidence Ratings



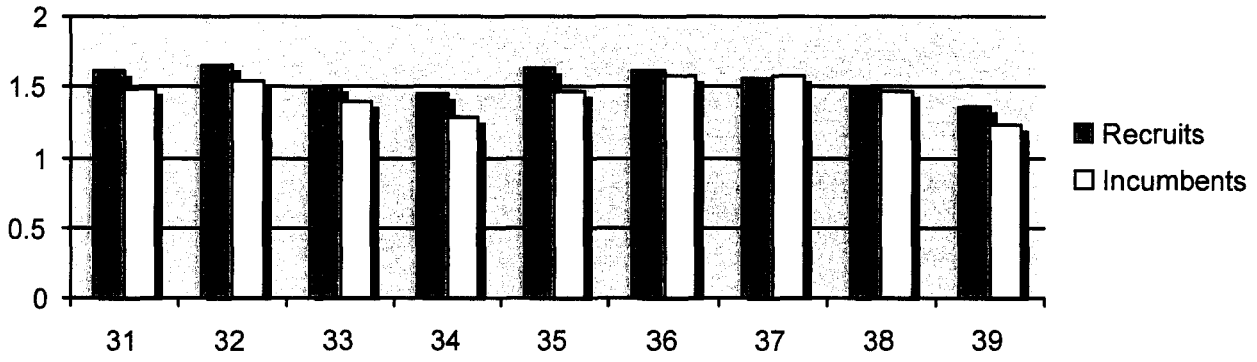
Differences between Recruits and Incumbents on their Pre-Course Task Confidence ratings were nonexistent with two exceptions. For Task 28 (Knowing how to use different hazmat information sources) and Task 29 (Taking defensive actions during hazmat releases), Incumbents were slightly more confident than Recruits.

Table 64. *t*-Tests of Post-Course Task Confidence Ratings

Item	Tenure	N	Mean	sd	Cohen's *d*	Effect Size
31	Recruits	323	1.61	.513	.2354	Small
	Incumbents	135	1.49	.502		
32	Recruits	323	1.65	.522	.2116	Small
	Incumbents	135	1.54	.515		
33	Recruits	323	1.51	.548	.2242	Small
	Incumbents	135	1.39	.503		
34	Recruits	323	1.45	.600	.2738	Small
	Incumbents	135	1.29	.545		
35	Recruits	323	1.63	.533	.3005	Small
	Incumbents	133	1.47	.531		
36	Recruits	323	1.62	.541	.0746	None
	Incumbents	135	1.58	.525		
37	Recruits	323	1.56	.550	.0185	None
	Incumbents	135	1.57	.512		
38	Recruits	323	1.50	.554	.0548	None
	Incumbents	135	1.47	.530		
39	Recruits	323	1.35	.572	.2057	Small
	Incumbents	135	1.23	.610		

Note: Very Confident = 2; Confident = 1; Not Confident = 0

Graph 36. Post-Course Task Confidence Ratings



For both groups, task confidence ratings rose considerably. Interestingly, for most of the tasks, Recruits rated their confidence higher than Incumbents did, although the size of the differences was quite small. This superiority in rating is perhaps a function of the Recruits' lesser real world familiarity with equipment, procedures, and situations; in other words, it might to some degree be reflective of over-confidence.

Confidence Summary

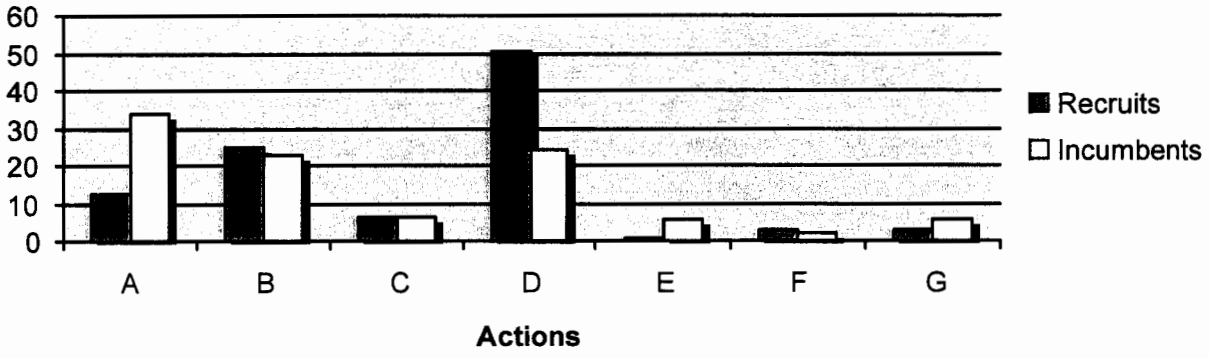
Both groups felt equally Unconfident (Pre-Course) and Confident (Post-Course); this might be unusual considering the superior amount of experience the Incumbents have.

ACTIONS

Table 65. (Survey Item 40). New or Different Action (Unit 1-Understanding HazMat)

Letter	Item	Frequency	Percent
A	*Review chemical & physical properties*	*86*	*18.8*
	Recruits	40	12.4
	Incumbents	46	34.1
B	*Routinely discuss most common hazmats*	*110*	*24.0*
	Recruits	79	24.5
	Incumbents	31	23.0
C	*Analyze a hazmat incident*	*28*	*6.1*
	Recruits	20	6.2
	Incumbents	8	5.9
D	*Walk through first due area*	*196*	*42.8*
	Recruits	163	50.5
	Incumbents	33	24.4
E	*Review HAZWOPER*	*9*	*2.0*
	Recruits	2	0.6
	Incumbents	7	5.2
F	*Keep records of responses*	*13*	*2.8*
	Recruits	10	3.1
	Incumbents	3	2.2
G	*Does not apply*	*16*	*3.5*
	Recruits	9	2.8
	Incumbents	7	5.2

Graph 37. (Survey Item 40). New or Different Action (Unit 1-Understanding Hazmat)



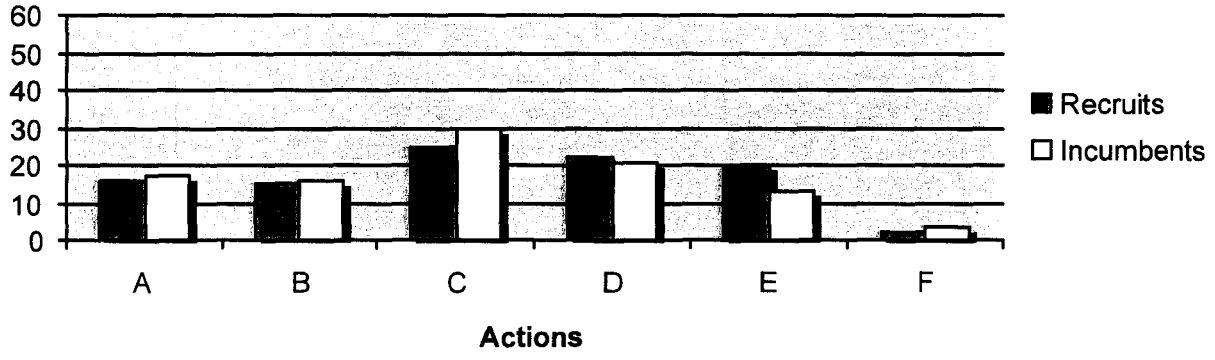
For most actions there were not significant differences between the two groups, with two exceptions. Incumbents were much more likely to select Action A (Reviewing chemical &

physical properties) while Recruits were much more likely to select Action D (Walk through first due area).

Table 66. (Survey Item 41). New or Different Action (Unit 2-Recognizing Hazmat)

Letter	Item	Frequency	Percent
A	*Avoid contaminations*	*75*	*16.4*
	Recruits	52	16.1
	Incumbents	23	17.0
B	*Review exposure reporting procedures*	*70*	*15.3*
	Recruits	49	15.2
	Incumbents	21	15.6
C	*Report signs of exposure*	*120*	*26.2*
	Recruits	80	24.8
	Incumbents	40	29.6
D	*Keep records of responses*	*99*	*21.6*
	Recruits	71	22.0
	Incumbents	28	21.0
E	*Decontaminate clothing/equipment*	*82*	*17.9*
	Recruits	64	19.8
	Incumbents	18	13.3
F	*Does not apply*	*12*	*2.6*
	Recruits	7	2.2
	Incumbents	5	3.7

Graph 38. (Survey Item 41). New or Different Action (Unit 2-Recognizing Hazmat)

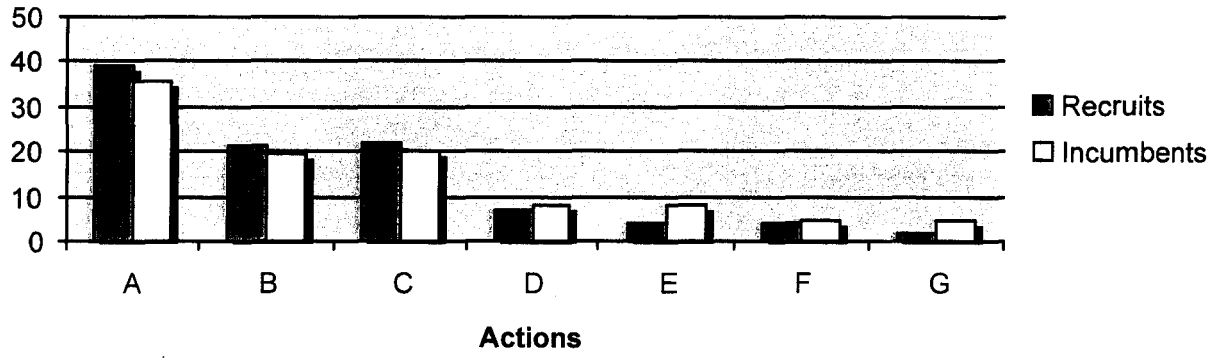


For none of the actions were there significant differences between the two groups. The only possible exceptions were Action C (Reporting signs of exposure) and Action E (Decontamination). Incumbents were slightly more likely than Recruits to select Action C while the reverse was true for Action E.

Table 67. (Survey Item 42). New or Different Action (Unit 3-Responding to Hazmat)

Letter	Item	Frequency	Percent
A	*Refer to hazmat info sources*	*175*	*38.2*
	Recruits	127	39.3
	Incumbents	48	35.6
B	*Conduct pre-incident plans*	*95*	*20.7*
	Recruits	69	21.4
	Incumbents	26	19.3
C	*Analyze potential hazmat incident*	*98*	*21.4*
	Recruits	71	22.0
	Incumbents	27	20.0
D	*Plan a hazmat response*	*34*	*7.4*
	Recruits	23	7.1
	Incumbents	11	8.1
E	*Implement the plan*	*25*	*5.5*
	Recruits	14	4.3
	Incumbents	11	8.1
F	*Establish proper decon procedures*	*19*	*4.1*
	Recruits	13	4.0
	Incumbents	6	4.4
G	*Does not apply*	*12*	*2.6*
	Recruits	6	1.9
	Incumbents	6	4.4

Graph 39. (Survey Item 42). New or Different Action (Unit 3-Responding to Hazmat)



For no actions were there any significant differences between the two groups.

Actions Summary

The only substantive difference between Recruits and Incumbents was in Unit 1. Recruits were more likely to select Action D while Incumbents were more likely to select Action A.

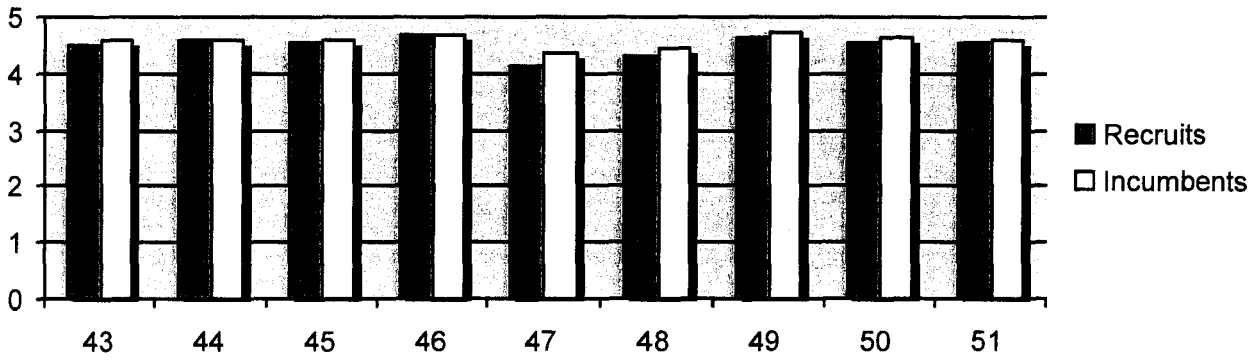
COURSE EVALUATIONS

Table 68. (Survey Items 43-51). General Reactions to Course

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
43	Recruits	323	4.51	.602	.1380	None
	Incumbents	135	4.59	.523		
44	Recruits	323	4.59	.568	.0356	None
	Incumbents	135	4.61	.548		
45	Recruits	323	4.55	.610	.0838	None
	Incumbents	135	4.60	.563		
46	Recruits	323	4.69	.497	.0200	None
	Incumbents	135	4.70	.505		
47	Recruits	323	4.12	.956	.2841	Small
	Incumbents	135	4.38	.809		
48	Recruits	323	4.31	.670	.1842	Nearly small
	Incumbents	135	4.43	.605		
49	Recruits	323	4.65	.520	.1375	None
	Incumbents	133	4.72	.482		
50	Recruits	323	4.54	.585	.1414	None
	Incumbents	134	4.62	.517		
51	Recruits	323	4.56	.572	.0176	None
	Incumbents	135	4.57	.554		

Note: Strongly Agree = 5 through Strongly Disagree = 1

Graph 40. (Survey Items 43-51). General Reactions to Course



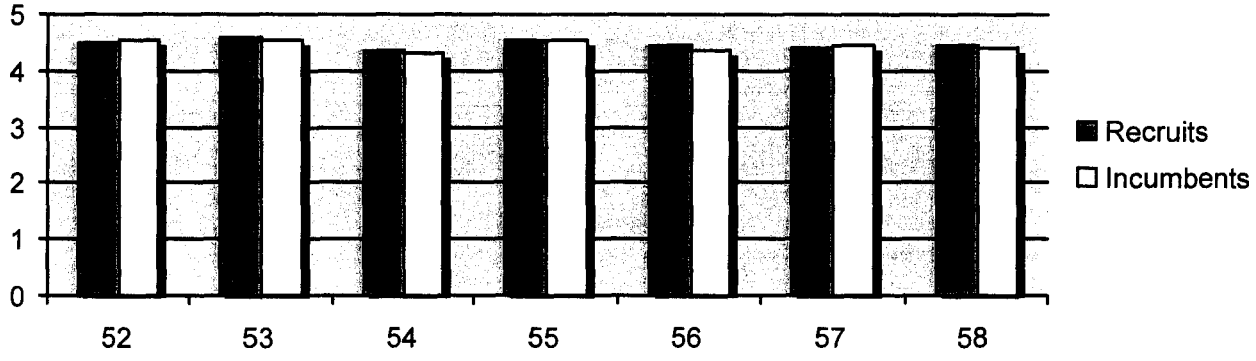
Visual inspection of Graph 40 indicates that there are no meaningful differences between Recruits and Incumbents on any of the items, Items 47 and 48 notwithstanding. Essentially, both groups gave the course high ratings.

Table 69. (Survey Items 52-58). Quality of the Presentation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
52	Recruits	323	4.50	.592	.0522	None
	Incumbents	136	4.53	.530		
53	Recruits	323	4.58	.554	.0361	None
	Incumbents	134	4.56	.555		
54	Recruits	323	4.35	.721	.0423	None
	Incumbents	133	4.32	.680		
55	Recruits	322	4.56	.573	.0176	None
	Incumbents	134	4.55	.556		
56	Recruits	323	4.43	.676	.0895	None
	Incumbents	133	4.37	.657		
57	Recruits	323	4.40	.653	.0469	None
	Incumbents	134	4.43	.605		
58	Recruits	323	4.43	.648	.0617	None
	Incumbents	134	4.39	.648		

Note: Very Good = 5 through Very Poor = 1

Graph 41. (Survey Items 52-58). Quality of the Presentation



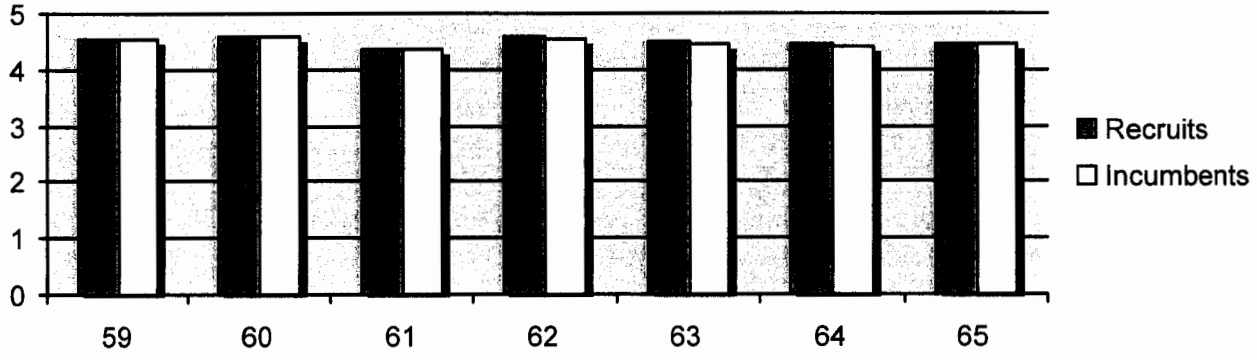
There are no significant differences between the Quality of Presentation ratings of Recruits and Incumbents. This can be taken to mean that the course presentation is appropriate for both audiences.

Table 70. (Survey Items 59-65). Information Covered

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
59	Recruits	323	4.56	.599	.0000	None
	Incumbents	136	4.56	.555		
60	Recruits	323	4.57	.566	.0000	None
	Incumbents	134	4.57	.567		
61	Recruits	323	4.36	.709	.0141	None
	Incumbents	134	4.37	.712		
62	Recruits	323	4.59	.540	.0917	None
	Incumbents	134	4.54	.557		
63	Recruits	322	4.49	.642	.0950	None
	Incumbents	134	4.43	.606		
64	Recruits	323	4.47	.627	.0967	None
	Incumbents	133	4.41	.605		
65	Recruits	323	4.46	.660	.0000	None
	Incumbents	134	4.46	.644		

Note: Very Good = 5 through Very Poor = 1

Graph 42. (Survey Items 59-65). Information Covered



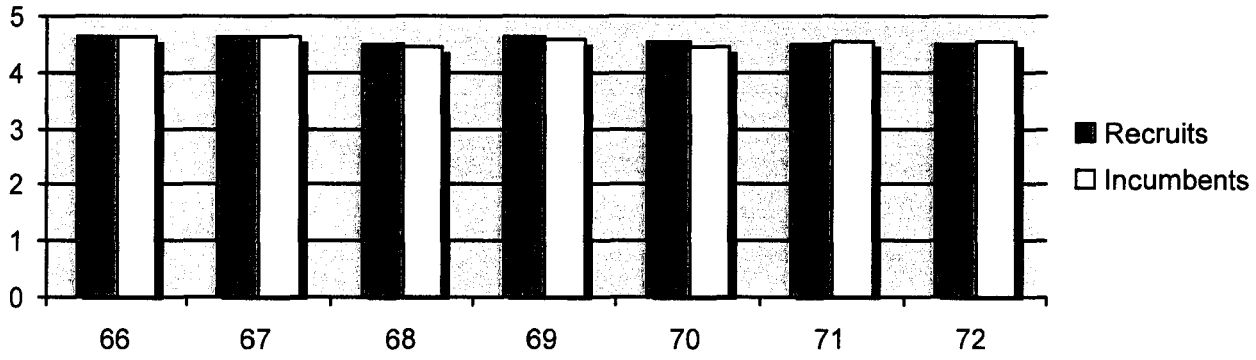
There are no significant differences between the Information Covered ratings of Recruits and Incumbents. This can be taken to mean that the kind and amount of information surveyed in the course is appropriate for both audiences.

Table 71. (Survey Items 66-72). Usefulness in Doing Your Job

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
66	Recruits	323	4.64	.536	.0186	None
	Incumbents	135	4.65	.537		
67	Recruits	323	4.63	.527	.0377	None
	Incumbents	133	4.65	.539		
68	Recruits	322	4.48	.675	.0146	None
	Incumbents	133	4.47	.702		
69	Recruits	323	4.65	.532	.0745	None
	Incumbents	132	4.61	.549		
70	Recruits	323	4.55	.594	.1632	None
	Incumbents	132	4.45	.657		
71	Recruits	323	4.50	.622	.0651	None
	Incumbents	133	4.54	.597		
72	Recruits	323	4.51	.632	.0158	None
	Incumbents	133	4.52	.635		

Note: Very Good = 5 through Very Poor = 1

Graph 43. (Survey Items 66-72). Usefulness in Doing Your Job



There are no significant differences between the Usefulness in Doing Your Job ratings of Recruits and Incumbents. This can be taken to mean that the course is perceived to be equally useful irrespective of the group.

Table 72. (Survey Items 109-123). Course Evaluation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
109	Recruits	316	4.53	.598	.1541	Nearly small
	Incumbents	130	4.62	.548		
110	Recruits	316	4.60	.569	.0541	None
	Incumbents	129	4.63	.516		
111	Recruits	316	4.47	.668	.0924	None
	Incumbents	129	4.53	.600		
112	Recruits	316	4.54	.613	.0000	None
	Incumbents	129	4.54	.625		
113	Recruits	315	4.44	.662	.1214	None
	Incumbents	129	4.52	.651		
114	Recruits	316	4.44	.751	.1213	None
	Incumbents	129	4.53	.719		
115	Recruits	316	4.52	.697	.1829	Nearly small
	Incumbents	129	4.64	.542		
116	Recruits	316	4.67	.523	.0559	None
	Incumbents	129	4.64	.570		
117	Recruits	316	4.64	.576	.0528	None
	Incumbents	129	4.61	.549		
118	Recruits	316	4.36	.830	.1780	Nearly small
	Incumbents	127	4.50	.665		
119	Recruits	316	4.31	.886	.1144	None
	Incumbents	129	4.41	.844		
120	Recruits	316	4.59	.643	.0812	None
	Incumbents	129	4.64	.544		
121	Recruits	316	4.62	.581	.1244	None
	Incumbents	128	4.69	.514		
122	Recruits	315	4.68	.500	.0787	None
	Incumbents	129	4.64	.527		
123	Recruits	316	4.67	.492	.1158	None
	Incumbents	128	4.61	.578		

Note: Strongly Agree = 5 through Strongly Disagree = 1

Graph 44. (Survey Items 109-123). Course Evaluation

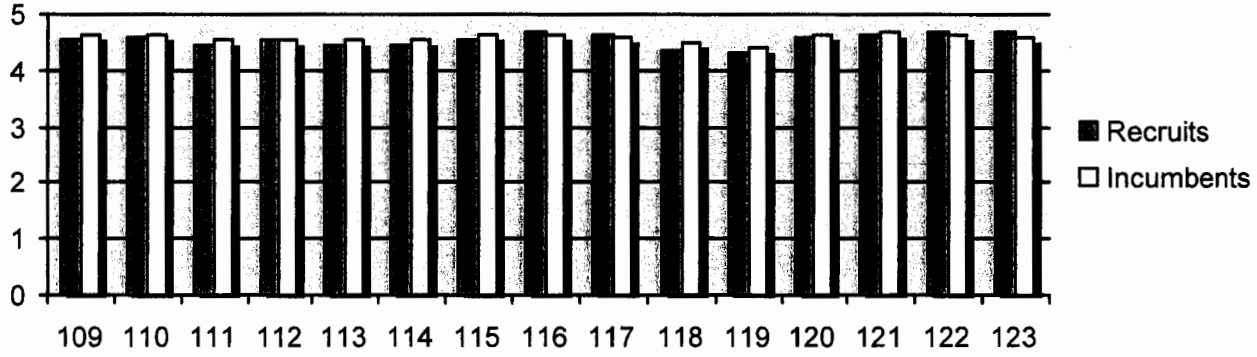
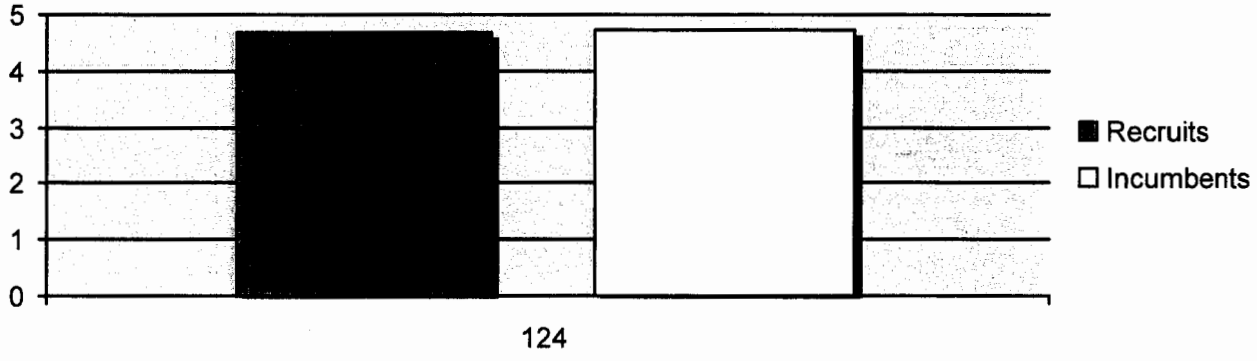


Table 73. (Survey Item 124). Overall Course Evaluation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
124	Recruits	315	4.67	.551	.0930	None
	Incumbents	127	4.72	.502		

Graph 45. (Survey Item 124). Overall Course Evaluation



There are no significant differences between the Course Evaluation ratings of Recruits and Incumbents. Overall, both groups were equally satisfied with the course in all aspects.

Evaluation Summary

There were essentially no differences between Recruits and Incumbents in their Course Evaluation ratings. This most likely indicates a quality of content and instruction that is at exactly the proper level and pace.

NEW (2008: VA, PA, TN, MA) vs OLD (2006: MD, TX)

TESTS

Table 74. *t*-Test of FRO Pre-Course Test Result Group Differences

Group	N	Mean	sd	Cohen's *d*	Effect Size
New	442	52.62	9.784	1.0949	Very large
Old	75	41.04	14.424		

Both groups scored poorly on the Pre-Course test, but the New class scored significantly better than the Old class did.

Table 75. *t*-Test of Post-Course Test Result Group Differences

Tenure	N	Mean	sd	Cohen's *d*	Effect Size
New	442	88.64	8.829	.6095	Medium
Old	74	93.70	3.784		

Both groups scored very well on the Post-Course test. There is medium-sized difference in the scores, favoring the Old group. This is interesting as the Old group performed much more poorly than the New group did on the Pre-Course test.

Table 76. *t*-Test of Knowledge Retention (Follow Up) Group Differences

Tenure	N	Mean	sd	Cohen's *d*	Effect Size
New	210	75.66	10.630	.2518	Small
Old	30	73.07	7.348		

There is only a small difference in knowledge retention between the two groups; it is not very meaningful. However, while the New group's test knowledge declined 12.98 points, the Old group's scores declined 20.63 points; this is a significant difference. It is unclear why there should be any differences between the New and Old groups; perhaps it is a function of a change in curriculum and/or instruction.

Tests Summary

For reasons unclear from the data, the New group performed far better on the Pre-Course test, worse on the Post-Course test, but essentially matched the Old group on the Follow Up test.

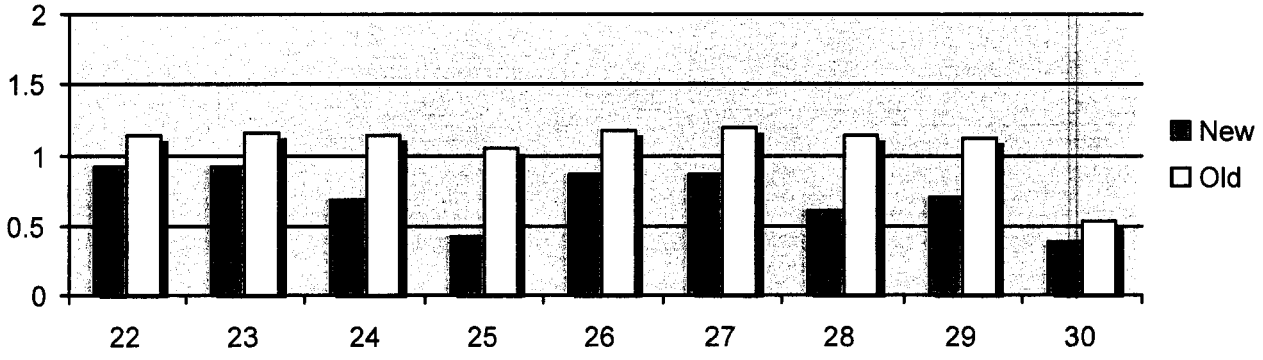
CONFIDENCE

Table 77. *t*-Tests of Pre-Course Task Confidence Ratings

Item	Group	N	Mean	sd	Cohen's *d*	Effect Size
22	New	389	.91	.590	.3587	Small-Medium
	Old	75	1.13	.723		
23	New	389	.92	.668	.3550	Small-Medium
	Old	75	1.16	.717		
24	New	389	.68	.682	.6476	Medium-Large
	Old	75	1.13	.759		
25	New	389	.42	.606	1.0005	Large
	Old	75	1.04	.687		
26	New	389	.86	.631	.4745	Nearly Medium
	Old	75	1.17	.760		
27	New	388	.87	.677	.4741	Nearly Medium
	Old	75	1.20	.788		
28	New	389	.61	.655	.7730	Nearly Large
	Old	75	1.13	.759		
29	New	389	.69	.659	.6433	Medium-Large
	Old	75	1.12	.716		
30	New	389	.38	.591	1.0682	Large
	Old	75	1.04	.743		

Note: Very Confident = 2; Confident = 1; Not Confident = 0

Graph 46. Pre-Course Task Confidence Ratings



Differences between the New and Old groups were all in the same direction: in every case,

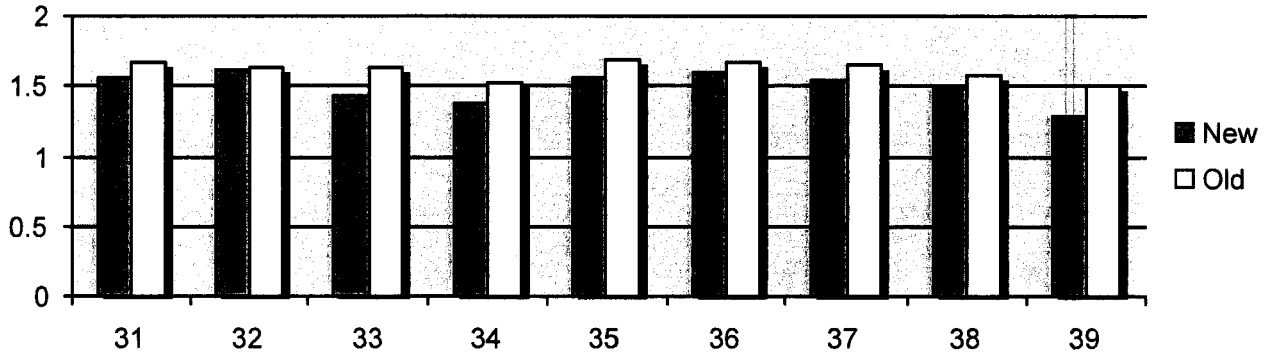
the Old group reported greater Pre-Course confidence than did the New group. This is all the more remarkable when one considers what the rating of "1" refers to. On every single task the Old group had a mean rating of just above 1 (i.e., they were confident). The New group had much lower confidence ratings which perhaps are more realistic.

Table 78. *t*-Tests of Post-Course Task Confidence Ratings

Item	Group	N	Mean	sd	Cohen's *d*	Effect Size
31	New	383	1.56	.508	.2151	Small
	Old	75	1.67	.528		
32	New	383	1.61	.509	.0383	None
	Old	75	1.63	.588		
33	New	383	1.44	.528	.3558	Small-Medium
	Old	75	1.63	.564		
34	New	383	1.38	.584	.2386	Small
	Old	75	1.52	.601		
35	New	381	1.56	.537	.2243	Small
	Old	75	1.68	.524		
36	New	383	1.59	.533	.1492	None
	Old	75	1.67	.553		
37	New	383	1.55	.529	.1859	Nearly Small
	Old	75	1.65	.581		
38	New	383	1.48	.536	.1647	Nearly Small
	Old	75	1.57	.597		
39	New	383	1.28	.580	.3968	Medium-Large
	Old	75	1.51	.578		

Note: Very Confident = 2; Confident = 1; Not Confident = 0

Graph 47. Post-Course Task Confidence Ratings



For both groups, task confidence ratings rose considerably, though more for the New group than for the Old. As before, every difference in ratings, from the insignificant to those that were of a Medium-to-Large variety, favored the Old group. However, the large disparity between ratings exhibited in Table 77 and Graph 46 is far less pronounced here in Table 78 and Graph 47.

Confidence Summary

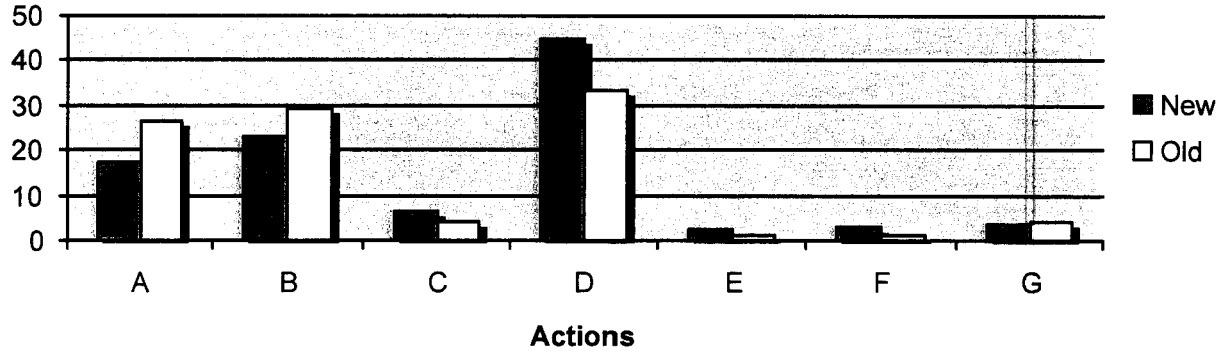
Confidence ratings of the Old group were far higher than those of the New group on the Pre-Course, but not nearly so much on the Post-Course; the Old was still higher however.

ACTIONS

Table 79. (Survey Item 40). New or Different Action (Unit 1-Understanding Hazmat)

Letter	Item	Frequency	Percent
A	*Review chemical & physical properties*	*86*	*18.8*
	New	66	17.2
	Old	20	26.7
B	*Routinely discuss most common hazmats*	*110*	*24.0*
	New	88	23.0
	Old	22	29.3
C	*Analyze a hazmat incident*	*28*	*6.1*
	New	25	6.5
	Old	3	4.0
D	*Walk through first due area*	*196*	*42.8*
	New	171	44.6
	Old	25	33.3
E	*Review HAZWOPER*	*9*	*2.0*
	New	8	2.1
	Old	1	1.3
F	*Keep records of responses*	*13*	*2.8*
	New	12	3.1
	Old	1	1.3
G	*Does not apply*	*16*	*3.5*
	New	13	3.4
	Old	3	4.0

Graph 48. (Survey Item 40). New or Different Action (Unit 1-Understanding Hazmat)



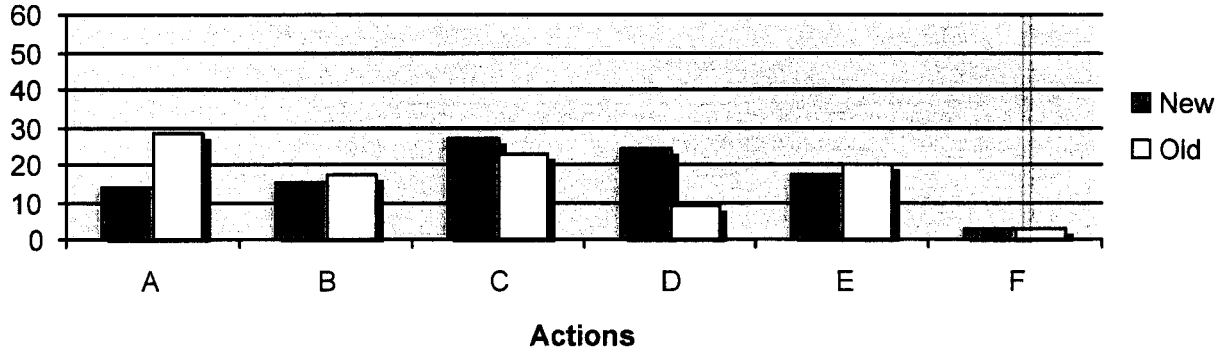
For four of the seven Actions there were no significant differences between the two groups. Both groups selected as their top choices the same three actions in the same rank order.

However, the Old group selected Actions A (Review chemical & physical properties) and B more frequently (Routinely discuss most common hazmats) compared to the New group which selected Action D (Walk through first due area) more frequently than the old group did.

Table 80. (Survey Item 41). New or Different Action (Unit 2-Recognizing Hazmat)

Letter	Item	Frequency	Percent
A	*Avoid contaminations*	*75*	*16.4*
	New	54	14.0
	Old	21	28.0
B	*Review exposure reporting procedures*	*70*	*15.3*
	New	57	14.9
	Old	13	17.3
C	*Report signs of exposure*	*120*	*26.2*
	New	103	26.9
	Old	17	22.7
D	*Keep records of responses*	*99*	*21.6*
	New	92	24.0
	Old	7	9.3
E	*Decontaminate clothing/equipment*	*82*	*17.9*
	New	67	17.5
	Old	15	20.0
F	*Does not apply*	*12*	*2.6*
	New	10	2.6
	Old	2	2.7

Graph 49. (Survey Item 41). New or Different Action (Unit 2-Recognizing Hazmat)

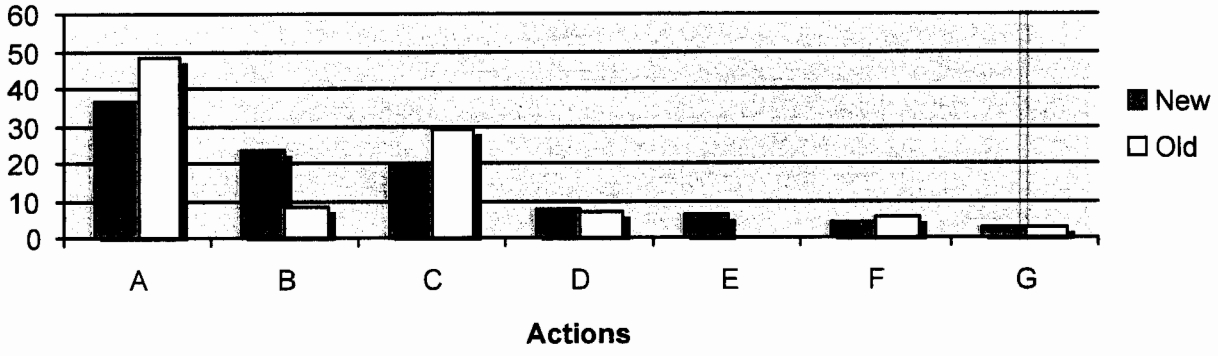


The Old group was more likely to select Action A (Avoid contaminations) than the New group was, but less likely to select Action D (Keep records of responses). The other Actions did not exhibit a significant level of differences in response frequency.

Table 81. (Survey Item 42). New or Different Action (Unit 3-Responding to Hazmat)

Letter	Item	Frequency	Percent
A	*Refer to hazmat info sources*	*175*	*38.2*
	New	139	36.3
	Old	36	48.0
B	*Conduct pre-incident plans*	*95*	*20.7*
	New	89	23.2
	Old	6	8.0
C	*Analyze potential hazmat incident*	*98*	*21.4*
	New	76	19.8
	Old	22	29.3
D	*Plan a hazmat response*	*34*	*7.4*
	New	29	7.6
	Old	5	6.7
E	*Implement the plan*	*25*	*5.5*
	New	25	6.5
	Old	0	0.0
F	*Establish proper decon procedures*	*19*	*4.1*
	New	15	3.9
	Old	4	5.3
G	*Does not apply*	*12*	*2.6*
	New	10	2.6
	Old	2	2.7

Graph 50. (Survey Item 42). New or Different Action (Unit 3-Responding to Hazmat)



For the first three Actions there were significant differences between the two groups on their selection frequencies. The New group was more likely to select Action B (Conduct pre-incident plans) while the Old group was more likely to select Actions A (Refer to hazmat info sources) and C (Analyze potential hazmat incident).

Actions Summary

More often than not there were no substantive differences between the two groups. However, the Old group was always more likely to select Action A. The New group, for Units 1 and 2, was more likely to select Action D.

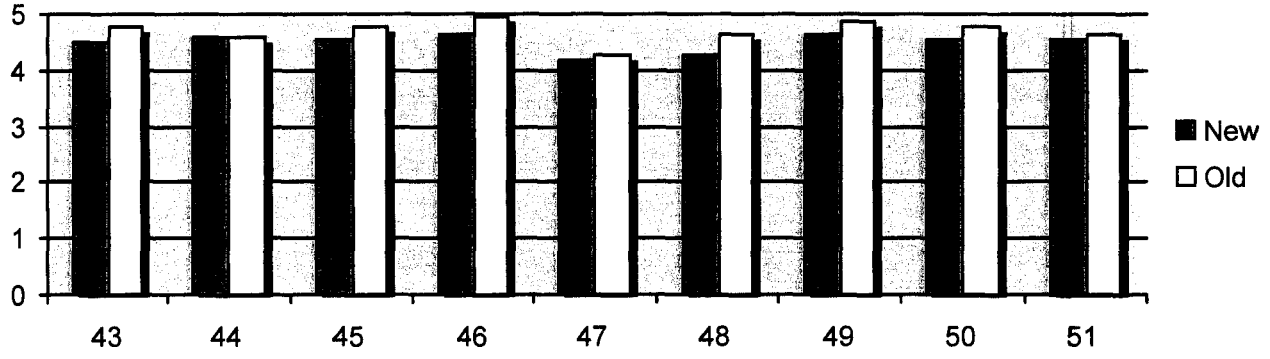
COURSE EVALUATIONS

Table 82. (Survey Items 43-51). General Reactions to Course

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
43	New	383	4.49	.592	.4793	Nearly Medium
	Old	75	4.77	.452		
44	New	383	4.60	.566	.0178	None
	Old	75	4.61	.543		
45	New	383	4.52	.604	.4240	Small-Medium
	Old	75	4.77	.509		
46	New	383	4.64	.522	.6374	Medium-Large
	Old	75	4.95	.226		
47	New	383	4.18	.920	.0976	None
	Old	75	4.27	.935		
48	New	383	4.28	.659	.5619	Medium
	Old	75	4.64	.536		
49	New	381	4.64	.528	.3956	Small-Medium
	Old	75	4.84	.369		
50	New	382	4.53	.573	.4293	Small-Medium
	Old	75	4.77	.481		
51	New	383	4.55	.567	.1590	Nearly Small
	Old	75	4.64	.561		

Note: Strongly Agree = 5 through Strongly Disagree = 1

Graph 51. (Survey Items 43-51). General Reactions to Course



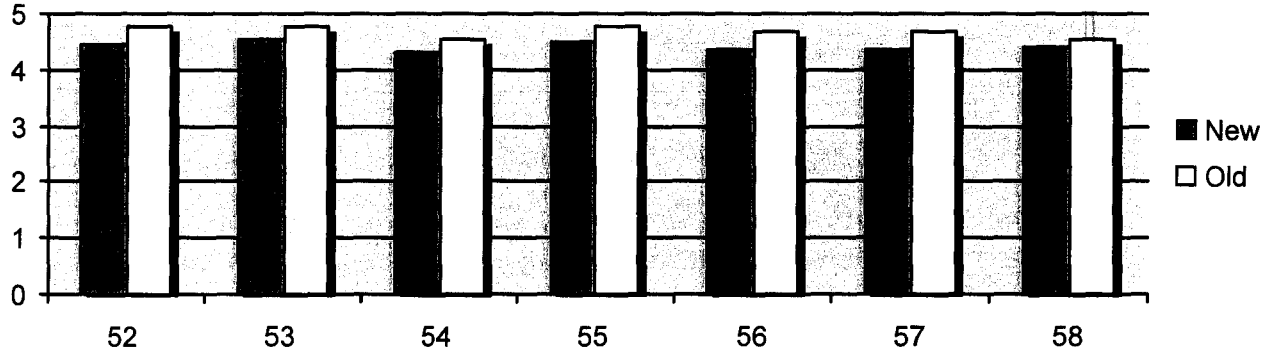
On the whole, the Old group members reacted more positively to the course than the New group members did, especially regarding Item 46 (Training will be valuable in helping me do my job in a safer manner). It is important to note, however, that overall, both groups rated the course very highly.

Table 83. (Survey Items 52-58). Quality of the Presentation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
52	New	384	4.47	.586	.4959	Nearly Medium
	Old	75	4.75	.438		
53	New	382	4.53	.568	.4765	Nearly Medium
	Old	75	4.79	.412		
54	New	381	4.30	.718	.3699	Small-Medium
	Old	75	4.56	.620		
55	New	381	4.51	.583	.5012	Medium
	Old	75	4.79	.412		
56	New	381	4.36	.687	.5006	Medium
	Old	75	4.69	.492		
57	New	382	4.35	.646	.5422	Medium
	Old	75	4.69	.519		
58	New	382	4.39	.642	.2634	Small
	Old	75	4.56	.663		

Note: Very Good = 5 through Very Poor = 1

Graph 52. (Survey Items 52-58). Quality of the Presentation



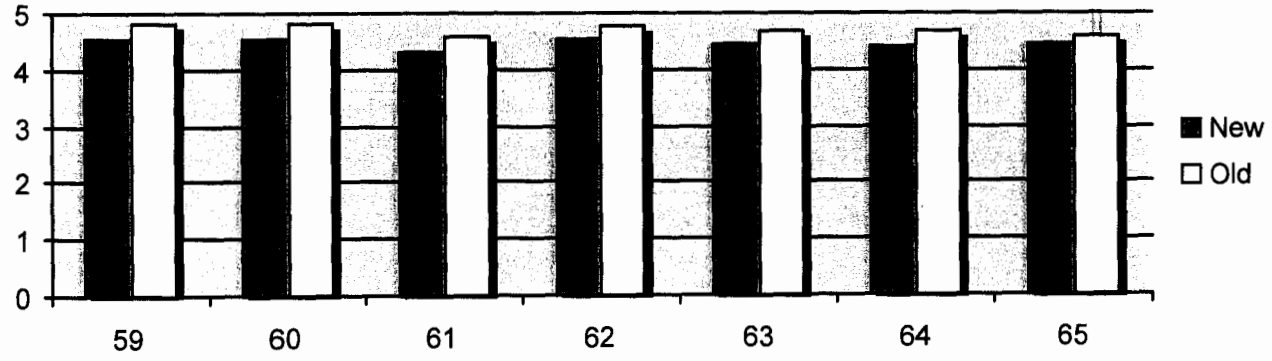
The results here are uniform: the Old group members consistently rated the quality of the presentation higher than the New group members did, although once again, both groups responded very favorably to the quality of the presentation.

Table 84. (Survey Items 59-65). Information Covered

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
59	New	384	4.52	.604	.4859	Nearly Medium
	Old	75	4.80	.403		
60	New	382	4.52	.583	.5212	Medium
	Old	75	4.81	.392		
61	New	382	4.31	.710	.4132	Small-Medium
	Old	75	4.60	.658		
62	New	382	4.54	.559	.4648	Nearly medium
	Old	75	4.79	.412		
63	New	381	4.43	.644	.3830	Small-Medium
	Old	75	4.67	.528		
64	New	381	4.40	.632	.4743	Nearly medium
	Old	75	4.69	.492		
65	New	382	4.43	.648	.2142	Small
	Old	75	4.57	.681		

Note: Very Good = 5 through Very Poor = 1

Graph 53. (Survey Items 59-65). Information Covered



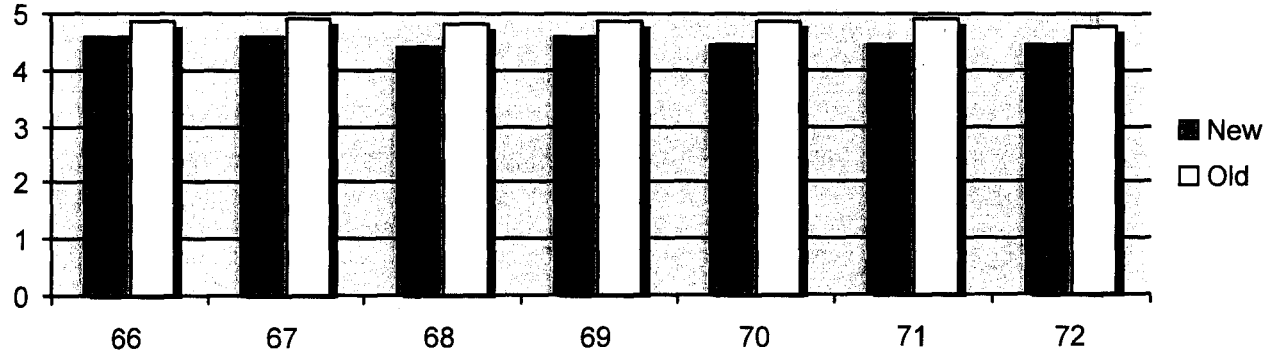
The results here are uniform: the Old group members consistently rated the information covered higher than the New group members did. Nevertheless, both groups rated the information covered very highly.

Table 85. (Survey Items 66-72). Usefulness in Doing Your Job

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
66	New	383	4.60	.556	.5327	Medium
	Old	75	4.88	.327		
67	New	381	4.57	.550	.7014	Medium-Large
	Old	75	4.93	.251		
68	New	380	4.41	.705	.5835	Medium
	Old	75	4.80	.435		
69	New	380	4.60	.557	.4384	Small-Medium
	Old	75	4.85	.356		
70	New	380	4.46	.634	.6877	Medium-Large
	Old	75	4.87	.342		
71	New	381	4.44	.632	.7964	Nearly Large
	Old	75	4.91	.293		
72	New	381	4.46	.650	.4984	Nearly Medium
	Old	75	4.77	.452		

Note: Very Good = 5 through Very Poor = 1

Graph 54. (Survey Items 66-72). Usefulness in Doing Your Job



The results here are uniform: the Old group members consistently rated the perceived usefulness of the course in doing their job higher than the New group members did. Both found the course very useful in doing the job.

Table 86. (Survey Items 109-123). Course Evaluation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
109	New	371	4.50	.603	.5769	Medium
	Old	75	4.83	.381		
110	New	370	4.56	.573	.4571	Nearly Medium
	Old	75	4.81	.392		
111	New	370	4.42	.671	.5502	Medium
	Old	75	4.77	.421		
112	New	370	4.48	.634	.5805	Medium
	Old	75	4.83	.415		
113	New	369	4.41	.670	.4935	Nearly Medium
	Old	75	4.73	.528		
114	New	370	4.42	.761	.3671	Small-Medium
	Old	75	4.69	.592		
115	New	370	4.52	.655	.3215	Small
	Old	75	4.73	.644		
116	New	370	4.63	.552	.3762	Small-Medium
	Old	75	4.83	.415		
117	New	370	4.59	.593	.5009	Medium
	Old	75	4.87	.342		
118	New	370	4.37	.796	.2677	Small
	Old	73	4.58	.725		
119	New	370	4.28	.896	.4044	Small-Medium
	Old	75	4.63	.693		
120	New	370	4.56	.644	.4614	Nearly Medium
	Old	75	4.84	.369		
121	New	369	4.59	.588	.5245	Medium
	Old	75	4.88	.327		
122	New	369	4.63	.527	.4792	Nearly Medium
	Old	75	4.87	.342		
123	New	369	4.62	.525	.4097	Small-Medium
	Old	75	4.83	.446		

Note: Strongly Agree = 5 through Strongly Disagree = 1

Graph 55. (Survey Items 109-123). Course Evaluation

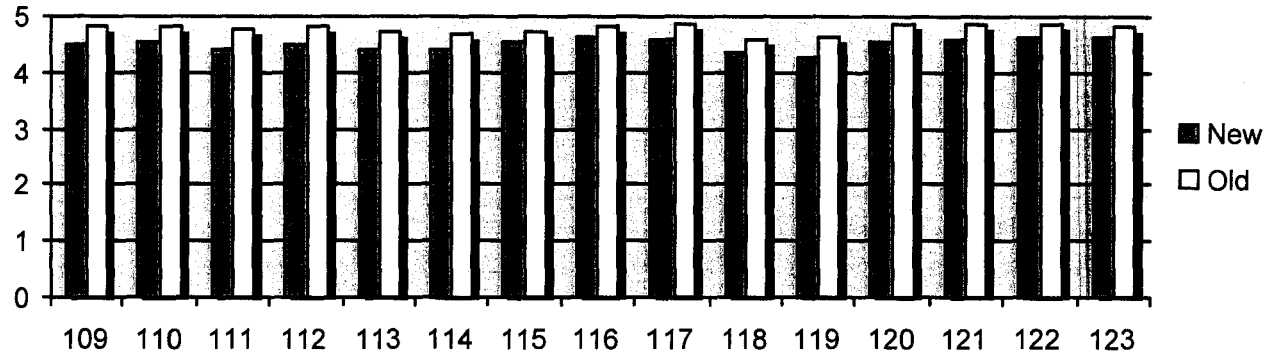
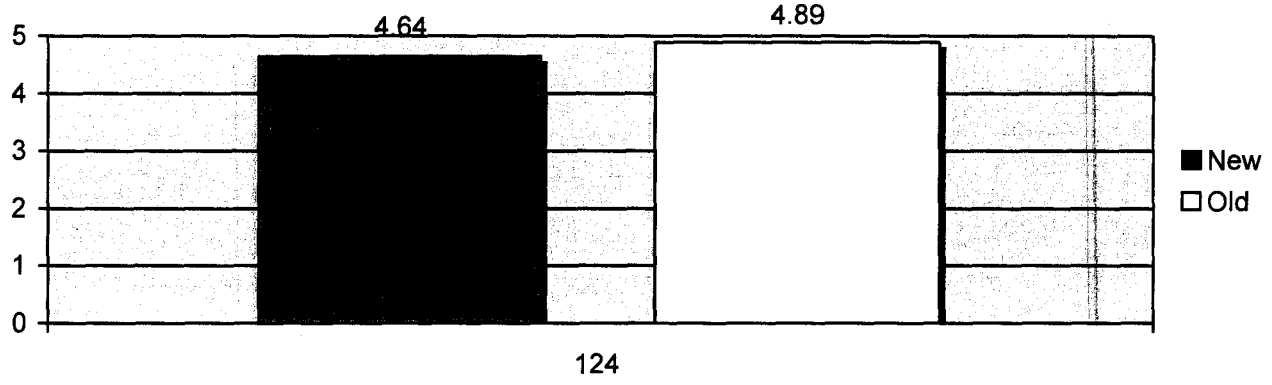


Table 87. (Survey Item 124). Overall Course Evaluation

Item #	Group	N	Mean	sd	Cohen's *d*	Effect Size
124	New	367	4.64	.554	.4719	Nearly Medium
	Old	75	4.89	.388		

Graph 56. (Survey Item 124). Overall Course Evaluation



The results here are uniform: the Old group members consistently evaluated the course higher than the New group members did.

Evaluation Summary

The aforementioned results hold: Old group members consistently evaluated the course more highly than the New group members did. It is unclear from the data why this might be the case. However, both Old and New groups rated the course very favorably in almost every dimension.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Regardless of whether the descriptive and comparative analyses of trainees were characterized by their state (VA, PA, MD, TN, MA, TX), tenure (Recruits or Incumbents), or year of training (New – 2008; Old – 2006), most results were positive and, to a large extent, anticipated. Generally, trainees entered the course not knowing much of the content, learned a great deal, managed to maintain respectable levels of information retention (as measured by a follow up test), perceived the course material to be useful for their work, promised to take actions reflective of the knowledge gained in the course, and then largely carried through. Trainees rated the course very positively. All of this is indicative of a well-designed and well-taught course with content appropriate for the audience and relevant to its needs and job requirements.

Occasionally, comparative analyses revealed differences between or among groups. These differences were not always either large or important; however, the following listed below merit special note.

- Trainees *took* more actions than they originally stated they *intended* to take. This is partly explained by the fact that, on the original registration survey form, trainees could only select one action from a list, whereas on the follow up survey, they could choose as many actions as they actually took. Nevertheless, the fact that the course had a demonstrable positive effect on trainee action on the job is encouraging.

- The New (2008 – VA, PA, TN, MA) and the Old (2006 – MD, TX) groups exhibited some differences. On test scores, confidence ratings, actions selected, and course evaluations, the two groups differed quantitatively along almost all dimensions.
    - Tests: On the Pre-Test the New outperformed the Old; on the Post-Test the Old outperformed the New, and on the Follow Up the New outperformed the Old. Also, the decline in test performance from Post-Test to follow up was smaller for the New than for the Old.
    - Confidence: The Old groups were far more confident on the Pre-Course, but only moderately so on the Post-Course.
    - Actions: The Old group more frequently selected Action A for Units 1 and 2 whereas the New group was more likely to select Action D.
    - Evaluation: Old group ratings were consistently higher, even though both Old and New groups rated the course highly along almost all dimensions.

- There were almost no significant differences between Recruits and Incumbents on any of the measures or items. This most likely indicates a course properly designed and delivered. The finding also suggests that instructors probably and appropriately tailored their deliveries to the experience levels of their participant groups.

Divya Bhati conducted a study for IAFF in 2007 in which she examined factors which explain transfer of training. Of the nine factors identified by researchers Broad and Newstrom, the one demonstrating the greatest correlation with transfer of training was Supportive Organizational Culture. This finding suggests that, at each fire station, fire fighter trainees will

be more likely to use and retain knowledge and skills acquired in the course if their supervisors establish a system of support for the trainees. In light of this and of the above findings, and in keeping with the recommendations made in the 2006 report, we recommend the following:

- To the extent that it is feasible, modify test items on the quizzes and appropriate elements of the instruction itself to be scenario-based. This increases the probability that what is learned in the class closely resembles the fire fighter's reality and positively influences job performance. Also, because scenario-based instruction is often more memorable than isolated fact-recall, there is reason to believe that the decline in Post-Course test scores will be substantially reduced.

- Research demonstrates that transfer increases when there is both pre-course preparation and post-course reinforcement of course-related information and behavior. Provide support for supervisors to systematically prepare trainees prior to taking the course on what will be expected of them upon their return to the job. Also, provide assistance to supervisors that helps them support and reinforce what was learned during the course back on the job. This is essential for leveraging learning and powerfully increasing both learning retention and on-the-job application.

- To the degree possible, scale survey items equivalently and with the larger numbers reflective of more of the content of the item. We refer specifically to Items 22-30 (Pre-Course) and 31-39 (Post-Course), which were confidence ratings scaled A: Very Confident; B: Confident; C: Not Confident (converted to 3, 2, 1). These contrast with Item 13 on the Follow Up survey instrument in which the same nine items were now scaled 1-10 with 1 being Extreme Confident and 10 being Total Lack of Confidence.

- While multiple-choice, factual recall/recognition types of questions are very efficient for testing, they are not very effective as a means for predicting future workplace performance. Testing methods and questions that require higher level thinking and skills (e.g., those asking for evaluation of a piece of information, or those which elicit behaviors similar to ones expected on the job) not only probe understanding more deeply but also serve better to discriminate between trainees who are able to *apply* learning from those who are simply good at *reciting* recently acquired information. To the extent possible, use test items that press trainees to demonstrate application knowledge and job-related performance capability of what is taught.

- Continuous repetition of the same test questions can possibly lead to memorization of answers without improved understanding. Develop a bank of scenario-based test items from which equivalent versions of quizzes can be automatically, validly and reliably constructed. The evaluators are prepared to assist in the creation of such a bank and in ensuring the validity of both the process and the items placed in the bank.

APPENDIX A

Table 18. (Survey Items 74, 86 & 98). Instructor's Attitude Towards Students

Instructor	Rating	Frequency	Percent
1	Concerned and involved	340	88.5
	Generally helpful	44	11.5
	Total	*384*	*100.0*
2	Concerned and involved	338	88.4
	Generally helpful	44	11.6
	Total	*382*	*100.0*
3	Concerned and involved	175	87.0
	Generally helpful	26	13.0
	Total	*201*	*100.0*

Table 19. (Survey Items 75, 87 & 99). Instructor's Organization of Materials

Instructor	Rating	Frequency	Percent
1	Excellent	339	88.3
	Satisfactory	44	11.5
	Inadequate	1	0.2
	Total	*384*	*100.0*
2	Excellent	329	86.1
	Satisfactory	52	13.6
	Inadequate	1	0.3
	Total	*382*	*100.0*
3	Excellent	177	88.1
	Satisfactory	23	11.4
	Inadequate	1	0.5
	Total	*201*	*100.0*

Table 20. (Survey Items 76, 88 & 100). Instructor's Presentation of Materials

Instructor	Rating	Frequency	Percent
1	Highly Interesting	246	64.0
	Interesting	129	33.6
	Routine	9	2.4
	Total	*384*	*100.0*
2	Highly Interesting	263	68.8
	Interesting	110	28.8
	Routine	9	2.4
	Total	*382*	*100.0*
3	Highly Interesting	139	69.2
	Interesting	54	26.7
	Routine	7	3.5
	Dull	1	0.5
	Total	*201*	*100.0*

Table 21. (Survey Items 77, 89 & 101). Speed of Presentation

Instructor	Rating	Frequency	Percent
1	Just right	328	85.4
	Too slow	28	7.3
	Too fast	28	7.3
	Total	*384*	*100.0*
2	Just right	330	86.4
	Too slow	31	8.1
	Too fast	21	5.5
	Total	*382*	*100.0*
3	Just right	174	87.0
	Too slow	11	5.5
	Too fast	15	7.5
	Total	*200*	*100.0*

Table 22. (Survey Items 78, 90 & 102). Instructor's Voice Clear

Instructor	Rating	Frequency	Percent
1	Yes	379	98.7
	No	5	1.3
	Total	*384*	*100.0*
2	Yes	374	98.2
	No	7	1.8
	Total	*381*	*100.0*
3	Yes	192	96.0
	No	8	4.0
	Total	*200*	*100.0*

Table 23. (Survey Items 79, 91 & 103). Instructor's Knowledge of Subject

Instructor	Rating	Frequency	Percent
1	Well informed	361	94.0
	Informed	23	6.0
	Total	*384*	*100.0*
2	Well informed	360	94.2
	Informed	22	5.8
	Total	*382*	*100.0*
3	Well informed	192	95.5
	Informed	9	4.5
	Total	*201*	*100.0*

Table 24. (Survey Items 80, 92 & 104). Use of Audiovisuals

Instructor	Rating	Frequency	Percent
1	Appropriate	374	97.4
	Overused	7	1.8
	Not applicable	3	0.8
	Total	*384*	*100.0*
2	Appropriate	369	96.6
	Overused	9	2.4
	Not applicable	4	1.0
	Total	*382*	*100.0*
3	Appropriate	191	95.0
	Overused	9	4.5
	Not applicable	1	0.5
	Total	*201*	*100.0*

Table 25. (Survey Items 81, 93 & 105). Instructor Receptive to Questions

Instructor	Rating	Frequency	Percent
1	Yes	380	99.0
	No	4	1.0
	Total	*384*	*100.0*
2	Yes	372	97.4
	No	10	2.6
	Total	*382*	*100.0*
3	Yes	198	98.5
	No	3	1.5
	Total	*201*	*100.0*

Table 26. (Survey Items 82, 94 & 106). Instructor's Attitude

Instructor	Rating	Frequency	Percent
1	Enthusiastic	326	84.9
	Interested	58	15.1
	Total	*384*	*100.0*
2	Enthusiastic	336	88.0
	Interested	46	12.0
	Total	*382*	*100.0*
3	Enthusiastic	173	86.1
	Interested	28	13.9
	Total	*201*	*100.0*

Table 27. (Survey Items 83, 95 & 107). Instructor Encouraged Class Participation

Instructor	Rating	Frequency	Percent
1	Yes	379	98.7
	No	5	1.3
	Total	*384*	*100.0*
2	Yes	373	98.2
	No	7	1.8
	Total	*380*	*100.0*
3	Yes	198	98.5
	No	3	1.5
	Total	*201*	*100.0*

Table 28. (Survey Items 84, 96 & 108). Instructor's Demeanor

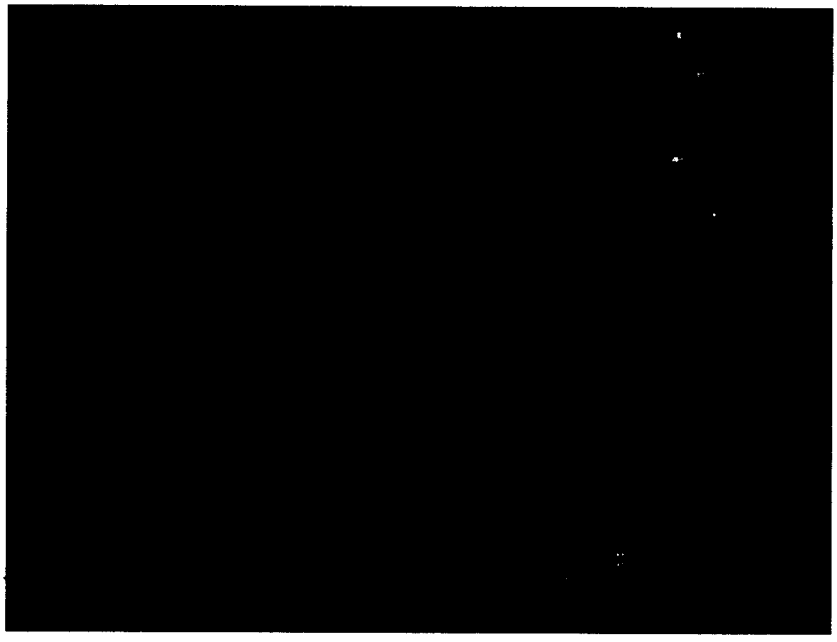
Instructor	Rating	Frequency	Percent
1	Friendly	377	98.4
	Indifferent	5	1.3
	Hostile	1	0.3
	Total	*383*	*100.0*
2	Friendly	374	98.2
	Indifferent	6	1.6
	Hostile	1	0.8
	Total	*381*	*100.0*
3	Friendly	195	97.0
	Indifferent	5	2.5
	Hostile	1	0.5
	Total	*201*	*100.0*

APPENDIX H

Advisory Board Minutes

(2008-2012)

International Association of Fire Fighters
Hazardous Materials
&
Weapons of Mass Destruction
Training Department
Advisory Board Meeting



Advisory Board Minutes

November 14, 2008
Charleston Place Hotel
Charleston, South Carolina

Harold A. Schaitberger
General President

Vincent J. Bollon
General Secretary-Treasurer

International Association of Fire Fighters
Hazardous Materials & Weapons of Mass Destruction
Training Department

Advisory Board Members Present:

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Steve Cassidy, President, Local 94 - Uniformed Fire Officer's Association of New York
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute of Occupational Safety and Health
- Judy Jarrell, M.A., Ed.D., University of Cincinnati, College of Medicine
- Steven M. Becker, Ph.D., The University of Alabama at Birmingham, School of Public Health

Advisory Board Members Excused:

- Robert K. Carver, President, Florida Professional Fire Fighters
- Brian McBride, President Local 22 - Philadelphia Professional Fire Fighters

IAFF Staff Present:

- Patrick Morrison, Assistant to the General President for Education, Training and Human Relations
- Jim Lee, Assistant to the General President, Canadian Office Operations
- Elizabeth M. Harman, Director, HazMat/WMD Training Department
- Thomas Hill, Deputy Director, HazMat/WMD Training Department
- Jennifer Fortier Stewart, Director, Grants Administration
- Jacqueline Dowleyne, Administrative Assistant, HazMat/WMD Training Department

Guests Present:

- Chip Hughes, Grant Manager, National Institute of Environmental Health Sciences
- Jim Remington, Grant Manager, National Institute of Environmental Health Sciences

IAFF HazMat/WMD Consultants Present:

- Harold Stolovitch, PhD, CPT, Harold D. Stolovitch & Associates, Learning and Performance Solutions

Friday, November 14, 2008

WELCOME AND OPENING REMARKS - ***Harold A. Schaitberger, IAFF General President***

President Schaitberger welcomed the new members of the Advisory Board (AB) (Steve Cassidy, Jeffrey A. Caynon, John Niemiec, Thomas E. Ryan, Jr., Steven Becker, Judy Jarrell, Ernie Mitchell, Thomas Hales).

"I have implemented recommendations received from our federal partners who suggested we do a couple of things with the AB."

- Remove myself from the board as chair
- AB needed to be a clear mix of International leadership, fire service leadership, and we needed to have more talent from the technical and academic world, to really help us evaluate the programs that we are delivering.
- Continue to diversify our instructor pool
- Expanded the AB

"I appreciate each and every one of you that have accepted this position and I appreciate the support from our agencies. I now turn the meeting over to your Chairman. Chairman Donald Stewart."

Chairman Stewart asked that all cell phones be put on vibrate, each member should check their contact information for accuracy, and complete vouchers (either mail them in or sign and give to Jackie). Each member was asked to introduce himself or herself to the board.

Chairman Stewart asked for a motion to adopt the 2007 Minutes. The motion was moved, seconded and adopted.

Pat Morrison gave an overview of the agenda and turned the meeting over to Elizabeth Harman, Director of the HazMat/WMD Training Department.

Elizabeth Harman

- Welcomed the board
- Described the HazMat/WMD staff functions
- IDC Overview:
  - 5 new American Instructors
  - 10 new Canadian Instructors
  - Summary of IDC topics and working groups
  - Guest speakers (DOT-Mark Razny, Chief Bobby Halton, Bruce Lippy, Keith Mundy-UFCW Liaison, Harold Stolovitch)
- Overview of the grants, their funding, accomplishments and goals (information found in binder under tab 10)

QUESTIONS/ANSWERS

Dr. Stewart – Is there a menu of different courses. ***Elizabeth Harman:*** Yes, it can be found on the IAFF web site www.iaff.org.

Tom Hales: (Frontline Safety Course) How much is classroom/hands-on? ***Elizabeth Harman:*** Group activities throughout.

Judy Jarrel: Qualified trainers – how/who qualifies them? ***Elizabeth Harman:*** "Trainers are required to have taken the Train-the-Trainer course. We don't do a lot of screening knowing that around the country there are different levels of training, styles, content that has been taught. They may have been in their departments five or ten years teaching hazmat, but they just didn't take our course. There are some states that require certification. It varies all over the country. In an effort not to penalize locals or departments that don't have people with specific criteria or certifications - I'm really relying on the local president to send us people that, "hey this person has been teaching in our department for a number of years and he/she knows what they're doing. We always screen everyone through their local president before they actually deliver a class, but also before they can come to our training. So qualified loosely means, they know what they're doing."

John Niemiec: How are ongoing evaluations going? ***Elizabeth Harman:*** Evaluations for training programs are regular and constant. The evaluation program for instructors is a requirement under the NIEHS Minimum Criteria Document and is currently under development at this time. "For local instructors we don't have any evaluation data to show DOT. So what we proposed to DOT for this fiscal year is to deliver 12 instructor training programs followed by 35 supportive teaching sessions. After training, the student will go back to their departments with this training, call the IAFF and say "hey I took the TtT training, talked to my local president/chief, and want to deliver the program. I am ready for the teaching session." What this means is their department will pay for them to deliver the course and we will send one of our master instructors to teach with them and support them. We will provide the materials for the class. That gives us an opportunity, in working with Dr. Stolovitch, to collect feedback from our instructors and to also collect the data from their students on how they are doing with their students. That was our concept behind the supportive teaching sessions.

President Schaitberger: Where are we on master instructor evaluations? ***Elizabeth Harman:*** "That's what we talked about in the DOT meeting on Tuesday. How do you do that economically, with 91 instructors? Economically we wouldn't be able to have an independent person come out and sit in the back of the room and evaluate any of our instructors. Harold, I don't know if you want to go into some of this when you give your presentation, but we talked about the concept of the word "evaluation." Particularly I think most of you have experienced the passion of our instructor pool and the tight knit group that they are, and if we say hey, could you evaluate each other while you're out there, I don't know if they're going to become a cheerleading squad and really how effective that's going to be. If Harold could mention that in his discussion you'd probably get a better answer. Another objective in DOT is to look at that evaluation; what is that; how is that done; how are our instructors trained to provide that feedback, what physically is the tool that they use; what are they writing on a checklist, a sheet

or are they writing a summary. These are just some of the things we had talked about earlier today.

CANADIAN GRANT OVERVIEW

Jim Lee: Seven years ago the IAFF and the Canadian Government did a survey to see what kind of training levels we had and there was very little training in hazardous materials, so the General President started lobbying the federal government to try to get funding to bring the IAFF program to Canada. The Canadian Government was reluctant to give dollars to unions and number two to give money that they think is the responsibility of the municipality. We ran into a lot of road blocks. We weren't asking for a lot of money. We were asking for $500,000 on a 1 year basis. We took our Prime Minister through the Fire Ops program. We actually dressed him up and took him into a burning building – shortly after we did that, in the next budget he said we would get the money and that it would be coming to the IAFF – a union! So, it started at $500,000, next thing you know it was at 2.5 million over a 5-year period with the opportunity to receive $500,000 every year on a continuous basis after the 5 years.

President Schaitberger: He (Prime Minister) did fairly well, but we lit him up. He came out of the program with a different understanding of what fire fighters go through. The Fire Ops program was something the IAFF developed several years ago and we do it now across the country where our affiliates will bring the elected officials and members of the media and put them through five evolutions, typically: confined space, hot house, ladder climbs, clothes drags, full turnouts, SCBA's and we have ranglers (called different, in different places), but two of our own will be with each elected official. As they're going through, they're talking them through - why we need four person staffing and five person staffing on engines and trucks. To connect our needs and resources with exactly what they are experiencing, and the difference between being able to ventilate and not, and let them feel the difference. This has turned out to be an extraordinarily successful program. It really helped to change the views of those who are making the decisions and those who are reporting on what we're doing.

Steve Cassidy: There was an Article in the NY Times about how much equipment a fire fighter has to carry – could be up to 140 lbs. I will send the article to members.

Jim Lee: The plan is to deliver FRO training at 22 Direct Deliveries and four TtT classes per year. We've gone through the process of having our Canadian fire fighters be trained (TtT) to the master instructor level. We have 10 Canadian instructors set up right now, and I can tell you they are all excited and ready to go.

Pat Morrison: Instructors from our master pool served as mentors and were paired up with a Canadian instructor - that has been just a great effort on both sides. Our master instructors flew up to Canada to really do a one-on-one training and that has made a big difference in the Canadian instructors coming down here and working with a master instructor. Going through this week has just been another great program.

Jim Lee: Pairing up U.S. instructors with Canadian instructors was a huge success. The first couple of courses that we roll out in Canada we are going to use an American and Canadian instructor and then hopefully at some point we will begin using Canadian instructors throughout.

This is not a grant – this is a contribution agreement and there's a huge difference between what you consider here in the U.S. as a grant and what we consider as a grant in Canada. There are conditional and non-conditional grants. We received a contribution agreement and there are a lot of strings attached to the contribution agreement. We've actually made an agreement on what we intend to do with the program. One of our challenges is that we have to deliver it in French and English.

Harold Stolovitch - WHY TRAIN?

We train because we have performance rules and we realize that without the skills and knowledge there is no way they're going to be able to achieve this. Particularly in the HazMat area, where you have specific and technical things that you have to do. Things, that if you don't know about you could walk in and inhale all the poisons, right? You can easily do damage to yourself through invisible things. In order to achieve the goal of reducing injuries and fatalities that becomes essential. The other part is, you want them to continue to improve.

What is training? It's a formalized systematized process that's aimed at altering the mental structure and behaviors of individuals in specifically targeted ways. So when I evaluate, I want to take a look at what is it that you're dealing with, what is it that you are providing to your workers, and is it structured in such a way that systematically it's allowing them to alter their mental models, and at the same time, their behaviors. Training, itself, is a process that you use. We need to train, instruct and educate. These are the activities that are either deliberate or not deliberate. That's the implicit set of things that come out that allow for the development of general mental models and values. So when we're getting people in the HazMat area, there's training, instruction and education.

What is performance? The valued accomplishment derived from costly behavior. Behavior is always a cost. Then you have to take a look at that cost and compare it to what they're getting in return. So when the granting agencies are providing money you want to take a look, there's a lot of cost involved, a lot behaviors that go on and what do we get as a result? So we want to take a look at the accomplishments, and we can have many different levels of accomplishments. Basically, performance is a function of behavior and accomplishments, and what we're looking for is what we call worthy performance. I'm not talking about worthy as honorable, but performance that's really worth something, but is equal to the behavior that's appropriate, that results in valued accomplishments. So if I want my performance in terms of safe lives, reduced injuries and containment of HazMat dangers, etc., then that's my worthy performance and I want to make sure that the appropriate behaviors result in the valued accomplishments.

With respect to the HazMat evaluation, how many of you are familiar with the term Kirkpatrick Levels of Evaluation? Just a couple of you. When we're thinking about evaluation within the work context, although this isn't very scientific and there's a whole lot of talk about this thing, it still is the most common handle that we use.

Kirkpatrick level of evaluation

- Level 1 – training reactions (they don't tell us much about whether they learned anything or not, but it does tell us about customer satisfaction, the value that they perceive of having gained from what they went through)
- Level 2 – immediate learning (I train you on how to slice a bagel, then I give you a bagel and a knife and what do I ask you to do? Go slice. Then I take a look and then see, did you slice it without cutting off one of your fingers, did you slice to give two people a half or are the surfaces smooth. So essentially what you have is a verification as to whether or not your training is immediately effective, and in both cases we do this in the HazMat program.)
- Level 3 – transfer to the job (So you know how to slice a bagel. Does that mean when you go back to the deli counter that you are slicing the bagels appropriately? So we can go and find out if you're doing it and what we find in the research is the drop-off between level 2 and 3 is astronomical – somewhere between 70/80 percent of what we teach our people gets lost.)
- Level 4 – improved results – do results change – Do we have fewer fatalities, injuries, etc.? (At this point, I do not know.)

Let's take a look at what's happening. I'll give you the bottom line first. HazMat evaluations show that training reactions are very positive. On a scale of 1 to 5 if you were the instructor giving a class and this was the general reaction to the course, what would you say? Looks good to the trainees! Now are they being nice to the trainers? I don't know.

Harold Stolovitch: Any questions or comments?

Judy Jarrell: What I find is that the instructors are very entertaining and they get high marks because the students are being entertained.

Harold Stolovitch: What I'm saying to you is this: there is zero correlation between satisfaction of the course and actual ability to perform or even learn. There's zero correlation among all of those 4 levels.

Trainee reactions do not vary much. Let's look by geography last year we looked at 400+ trainees at 4 different sites (VA, PA, MA, TN) and I don't think they were talking to each other. These are the overall reactions. As you can see we are getting pretty much consistency from different areas. So you can see it doesn't vary much by geography. Let's take a look at population - incumbent vs. recruits. No significant difference. How do you teach the same course to both recruits and incumbents? It's a problem, but obviously one they are making accommodations to in their population that appear to be appropriate. You get the idea? It's a little bit like a script or a play, and then you watch the actors play that script. The script is a script - it's dead - what brings it alive is the talent of the persons delivering the play. I'm not sure if all of you are aware of how many people apply to become a trainer as opposed to how many are selected. Can you give us some information, Elizabeth?

Elizabeth: Per the Advisory Board recommendation in 2007 we did a recruitment effort to try and diversify the pool. We received 52 applicants of which we chose 12. Half of those were diverse as far as ethnicity, gender, bi-lingual language and half were caucasian males. ***Canada***: there were 26 applicants and 11 were chosen.

Harold Stolovitch: You get the picture? There is definitely a care for quality control among the instructors. I don't know this, I can only look at what I see and I'm getting the impression that they're able to make the annotations necessary to appeal to different populations.

Tom Hales: During the initial instructor selection, how did that process occur? Assuming those were 52 applicants for 90 instructors? ***Elizabeth:*** Actually, we have 102 instructors. ***Tom Hales:*** So you had so many openings – so you had openings for 10?

Elizabeth: Actually, no we didn't have a limit on how many. One of the goals in our NIOSH grant is to maintain a pool of between 80 to 100. We always have enough instructors to deliver the training programs. If you look behind tab 12 in the binder you will find a list of all our 102 instructors broken down by IAFF district. So there's pretty much representation among all of the districts with the exception of military posts.

Harold Stolovitch: What are the key selection criteria for the instructors? **Elizabeth Harman** responds:

- 5 years experience in HazMat
- Application and submittal of resume
- Certifications (state certified, etc)
- Letter of recommendation from local president
- Vetted through local president
- Video of teaching presentation

Harold Stolovitch: The bottom line is that the trainers are not selected at random. There are selected criteria and these criteria seem to be resulting in effective people. At least on the reaction level, seems like they're doing the job that resonates well with the learners.

Let's take a look at the level 2 evaluations , did they learn anything?

Tom Hales: What is the response rate on evaluations? ***Harold Stolovitch:*** 100%
Tom Hales: So you don't get a certificate unless you turn the evaluation in? ***Elizabeth Harman:*** The way our registration survey forms are designed, we try to cut back on paper. It's all on the same form. ***Harold Stolovitch:*** So you're not getting a skued sample. This is 100 percent. I'm only providing you with the data from our samples. This is not a random sample, but it's a convenient sample. However, it's a random convenient sample – in other words, those that are willing to take the burden on of the complete evaluation. A few years ago we did other cities and last year we also did a very indepth study in different departments across the U.S. We're trying to factor out any kind of skued stuff in there. Remember I have no vested interest in HazMat being good or bad. I'm only reporting what we get and then trying to figure it out. If you take a look at the test you will see, for example on the pre-test for this 2008 population was 52.6 – so you say, we'll they knew half the stuff. Well the tests don't always reflect the complete range of what's taught, but within that, they did 52% and if you take a look you'll see

the standard deviation is a possible 10. If you take a look at the post-test scores, then you'll see that there's been a significant improvement in their knowledge based on a 90% level and a decrease in standard deviation. If you take a look at the minimum and maximum you'll see from 26-98 with a range of 72 and you'll know that range has largely decreased.

Then we follow up. Approximately a year later, we're taking a look to see how they retain. Here we find that although there is a very large decline in what they retain, still if you look at their mean, you will find that they retained approximately ¾ and that's still considerably better than what they did pre course. So without any kind of formal follow up, you're still getting a pretty decent retention.

One of the things that we also look at is, what about confidence? It's an interesting thing. How many of you are knowledgeable about what's called the anxiety curve? We have what we call anxiety (stress, nervousness, etc.). Well if you have no anxiety, no stress, etc., what do you think performance is? No challenge – low performance. As that challenge, stress or anxiety starts to increase, what happens to performance? It starts to go up. But what happens is, obviously it gets to an optimal point – see that curve going? This is the optimal point between the challenge, stress type thing and the performance. If you go past it, what happens? Performance drops. So we know that there is, what we call curvilinear relationship between performance and anxiety. Well, that manifests itself also in confidence. If you have no confidence, what do you think happens – would you try to jump over that building at a single bound – no – there will be no performance. As that confidence increases again what happens is you get a more improved performance, and then there's an optimal level, where you become over confident, careless, etc. and as a result it drops off.

Let's take a look at confidence (Tab 8 – page 3). What you see across these four groups – if you look at the yellow line (that's the key one) and you take a look pre-course at their confidence level, the number nine by the way looks pretty big, but in the others you'll notice that for the most part – yellow is the non-confidence and nine is your chemical exposure, where they really feel unconfident. The blue line is very confident – so before the course this is how they're doing. Take a look at post-course. Notice the yellow line, what's happening? By the way chemical exposure is always the least confident, but all the others you'll notice that the confidence level has increased so in addition to learning something they're gaining confidence, but I don't see any of them very, very high. Take chemicals – I suspect that there's more technical stuff in chemical exposure than in many of the other things that they learn how to do, and as a result they are less confident about their ability to interpret it.

Trainees say they will apply: (Tab 8 – page 4) – This is what they say. There are three units, understanding hazmat – notice the "D" – D is the pre-planning. Essentially, this is what they said they would do. So now we go back a year later and we say, what did you do? And here's what we find. When they finish the course – now we go back a year later, don't remember what they said a year ago, we say, we want you to look at each of these areas and tell us which actions did you apply, this is what we get. You'll see that pattern is not too similar. Similarly, in the area recognizing hazmat this is their pre, you know when they just finished the course, the actions they're going to take and if you take a look, there are changes in what they're doing, but you see still that they are proud of what they do. Then finally, responding to hazmat, you see a similar type of pattern here. So, are they using what they learn. If you look at the report

you'll see they're doing even more. So, at Level one we have trainee reaction, at Level two we have immediate learning, at Level three we have transfer to the job, and at Level four improved results. We are checking the first three, but at level four, we don't know. We are going to have to find accurate data to allow us to establish a true base line. As I said, the correlations between levels have been shown to be very low or "0", so we're looking at different types of things.

Dr. Stewart: In this operational world, isn't it hard to measure the transfer of this learning experience? How would you measure that? ***Stolovitch:*** It would have to be unfortunately, self report. We could get self and supervisory report and then take a look at the difference between the two, but you can't watch somebody in the middle of a blaze, right?

So overall, what data we have, hazmat training, as training, works well. Last year we conducted a study at level 3, the actual transfer and the classes that affect transfers. What is it that really makes the difference as to whether or not the training would be useful, and overall, what it comes down to is organizational skills. If a culture and the organization are present, that say what you've learned is going to be applied, then that will affect very strongly what you would do, and in particular, the supervisor level is the key. Whenever you have a performance issue at any given level, don't waste your time. If all your bagel slicers are slicing their fingers, don't study bagel slicers, go at least one level up and see what the supervisor is doing, or two or three levels up and see what management is doing. I'm recommending very strongly that we look at the supervisor level. To conclude, I'm suggesting we focus on application, scenario-based training, but although the training is very good, a lot of it tends to be not as much scenario based. The focus needs to be put clearly on the supervisory level. If you want performance at any given level, you have to be able to manage at that level. Otherwise, we're finding that in the studies that were done on transfers, the least important person is the person you're training, the most important person is the supervisor. Then we need to begin collecting the level four evaluations in a serious and systematic manner.

Dr Stewart: Would that be scenario-based testing a year later? ***Stolovitch:*** No. Level 4 deals with changes in the results. We need to look at the injuries, accidents, incidents of near misses, and fatalities, to see if anything changes as a result of what we've done. ***Dr. Stewart:*** You're saying we want a good environment. ***Stolovitch:*** You're 100 percent and the training is only one aspect of it. That's why you need to look at things more systemic. That's why I said a good discussion needs to occur at this level. Currently, the bottom line results today are inconsistent, and we don't know really what affects the bottom line, and we have to improve it. And so, this is an area of discussion. I think that this advisory committee should think about this – that training is an important aspect, people have to have skills and knowledge, but can they apply those skills and knowledge if they don't have the proper expectations, support, feedback, resources and so on.

Harold Stolovitch: Look at your supervisor. Hazmat training is effective.

CURRICULA UPDATE (Tab 11 in binder)

Elizabeth Harman presented the curricula update to the board.

First Responder Operations (FRO Core Plus)

Granting Agency: National Institute for Occupational Safety and Health (NIOSH)
Operations-level first responders (primarily fire fighters, but applicable to LE and EMS as well)

- 3-day course – 6 modules
- Core knowledge and skills required by NFPA 472
- Mission-specific knowledge on: PPE, techinical decon and product control
- Analysis and design are complete
- Discussed accreditation with ProBoard representative
- Develop course materials – October 2008-February 2009
- Review course materials – December 2009-March 2009
- Finalize course materials – April 2009
- Pilot – May 2009

Steve Becker: What are the four scenarios?

- Improvised Explosive Device (IED)
- Radiological
- Chemical
- Biological

Emergency Response to Terrorism:Operations (ERT:Ops)

- Granting Agency: Department of Homeland Security (DHS).
- Operations-level first responders (primarily fre fighters, but applicable to LE and EMS as well)
- Two-Day course (Day 1: All general information (FRO refresher) is presented on Day 1; Day 2 consists of four scenarios that can be taken in any order)
- Course goal: To provide training on WMD threat characteristics, procedures for responding to those steps, and actions that can be taken to protect responders
- Instructor-led
- NIMS- approved by DHS
- Final review of Instructor Guide (IG) , Student Manual (SM) and presentation slides – September 30, 2008
- Layout of IG, SM and presentation slides – November 2008
- Video production – 3 segments TBD
- Finalize course materials – TBD
- Pilot - TBD

Niemiec: If a department just wants a one-day ERT or FRO can you do that? **Harman:** We can do a one-day course, but will encourage both.
Niemiec: Who's requesting refresher courses? **Harman:** Not highly requested.

FRONTLINE SAFETY

- Granting Agency: National Institute of Environmental Health (NIEHS), HazMat Disaster Preparedness Training Program (HDPTP).
- Partnership: National Fire Fighter Near-Miss Reporting System
- Target Audience: ALL fire fighters at all levels
- Two- day course (Student-centered, instructor-led activities)
- Full Two-day pilots:
  - Baltimore City, Maryland – May 2008
  - Wichita, Kansas – July 2008
  - Renton, Washington – September 2008
- Finalized course materials – October 2008
- First delivery in Fairfax County – November 2008 (25 fire fighters trained)

Lou Paulson - Make it a stand alone product – 16 hours versus going through a department.
Pat Morrison - Safety officers come from different departments for this training.
Chip Hughes - Start to experiment at this point for future delivery.

CHEMICAL PROCESS INDUSTRIES (CPI)

- Granting Agency: Occupational Safety and Health Administration, Susan Harwood Grant
- Target Audience: Ops-level responders
- Proposed Schedule:
  - Kick-off – November 2008
  - Development – December 2008-January 2009
  - Finalize course materials – February 2009
  - Pilot – March 2009

CONFINED SPACE OPERATIONS (CSO) AND CONFINED SPACE RESCUE (CSR)

- Granting Agency: CSR - National Institute of Environmental Health (NIEHS), HWWT or DOE; CSO – NIOSH
- Over a decade since development. CSO – 1995; CSR – 1998
- CSO – Three 8-hour days (24 hours); CSR – Five 8-hour days (40 hours)
- GOALS: Increase first responder knowledge of the nature of the hazards of confined spaces; Influence first responder attitudes toward health and safety when faced with a confined space incident; Teach appropriate skills in responding to confined space incidents; Provide hands-on practice (CSR ONLY).
- IAFF to seek ProBoard accreditation
- Revision Schedule:
  - Kick-off (Analysis and Design) – Early December 2008
  - Development (Draft Materials – January – April 2009); (Layout – May 2009)
  - Implementation (Pilot – June 2009)
  - Evaluation - Ongoing

GENERAL DISCUSSION

Lou Paulson: Are you interfacing with OSHA's investigations? **Thomas Hales:** We're separate on purpose, because NIOSH is a research agency and OSHA, of course, is a regulatory agency.

Jeffrey Canyon: Only fatalities – by requests? **Thomas Hales:** 95%, yes.

Tom Ryan: Is there any agency that has the power to force an investigation? **NIOSH – 85A**

Judy Jarrell: Did you consider those that are sick and go into work anyway? **Thomas Hales:** not in the announcements that we've done.

Jerry Chandler: Acute and chronic health problems from chemical exposure. What's necessary in getting better info to Fire Fighters? **Chip Hughes:** We were actually having a meeting with the National Library of Medicine on Wednesday and their Director actually approached us and their question is, "What are ways to reach the Emergency Responder community. They're thinking about a way to get Toxnet and medical information literature out to the people on the front line. I definitely want to coordinate with you guys to let you know what's going on with that. We definitely share that concern, as well.

Donald Stewart: Jerry what I'm getting from what you mentioned is, you're interested in a development of a course structure that's at a much higher level than the standard emergency response. **Jerry Chandler:** Maybe specialization. **Donald Stewart:** Something that you might teach a small number of people who would be involved in Incident Management. **Jerry Chandler:** Incident commanders and people of comparable level so that they can take their general knowledge and the particular situation they're in and come up with a more reasonable risk assessment of what circumstances their facing. This is not a simple thing, but it needs to be more indepth than physical properties and general class instructions. **Donald Stewart:** I think that's an excellent suggestion and I'll leave that to the curricular development folks or even the Advisory Board.

Judy Jarrell: Nanotechnology. Exposure to new materials. Anything being looked at? **Pat Morrison:** We just started to take a serious look at it. I talked to Rich Duffy and they're coming out with a respiratory study. Nanotechnology is something that we haven't, but we should. Two years ago at Redmond, we were going to have a session, but we weren't sure how it was fitting in. **Judy Jarrell:** You might want to get in touch with Surrogates?

John Niemiec: Infectious disease? Where is the curricula? **Elizabeth Harman:** Updated last year (8-hour course).

Judy Jarrell: What about the water supply, should it compromised? In terms of contamination. **Steve Becker:** It would take a very, very large tanker load of stuff to affect the water. Detection of agents have improved.

Jeffrey Caynon: Least prepared for – biological. How much curriculum in the FRO points to biological? **Elizabeth Harman:** It is covered in the FRO and there are three sections (1-83, 1-87 and 1-91) that cover biological agents.

Dr. Stewart: If there are no more more questions, I motion to adjourn.

Meeting Adjourned

HAZARDOUS MATERIALS TECHNICIAN

- Granting Agency: NIEHS (HWWT or DOE)
- Over five years since development – 2002
- 80-hour course
- GOAL: Provide Technician-level instruction within an 80-hour time frame which can serve as a basis for additional department training.
- Revision Schedule:
  - Analysis – Select content; IDC 2008
  - Design – December 2008
  - Development – January – May 2009
  - Implement (Pilot) – August 2009
  - Evaluation - Ongoing

Chip Hughes: We've done a strategic planning process and one of the things that we, as staff, try to do is go around to every advisory board, and part of the core of our grants is having an advisory board. What we were trying to state to all the organizations that are part of our program is, "this is where we're going, where the heck are you going?" and really the question back to each organization is "How does training fit into your organization, and where are you, and is it a core part of your mission? The reason I bring it up is because we have another five years coming up, we're going to have another competitive process, and I would really like to make sure that organizations are aligned with where we're going in terms of the next five year competitive process. A lot of the things that you have seen here today, and at IDC, I think will make the raw materials for proposals for the next five years. We want to put something on the street around July 2009. Of course this is for August/September 2010. I got to talk to Harold a little bit, in terms of lot of work we've done since 9/11, since building the peer worker training program over the life of the program. We try to impact a lot more on bigger organizations like DHS and the effort to have to build worker safety training program that's union-based in the country is something that was obviously been a core part of our mission, but we have never got in the middle. DHS is giving out billions of dollars to do whatever they're going to do, but that doesn't involve having a worker trainer model delivery of training be what there is that happens in the country – the other half of that is in our effort to build health and safety into where DHS goes and where our national response training work goes. For the most part, we've been successful since 9/11. We've had little efforts, where we've made some good steps forward. To me that's still a giant challenge that's out there for a new administration. That's what I'm thinking about, where we want to go in the future, to try to have a bigger impact on a bigger population. Obviously, we were created as a model training program around the superfund. That's something that has evolved over time, that as we've seen the lack of effort to create a training infrastructure in the country by default unfortunately, we have had to be DHS' training department, FEMA's training department, you know ,and that's because there is none. I see this as a really important issue for you guys to think about for the future as we move toward a new competitive cycle. The other part too is that it's always our passion to have organizations work together and you guys have really joined in that – I'm talking about, within our grants program as well as external (DVD Skills Support Workers effort, Meta Media that involves CPWR, you guys out of the World Trade Center – that's a beautiful example – the disaster site workers of course). The Avian piece that we did – all our training technology stuff,

pool stuff, handheld stuff, web based. I think we're going to keep doing those things because we think they're so important, but of course the part that's different from what everybody else does and what we do is, we still want to have the worker and trainer be the center of the process and not the technology. I think it's really important for us to think about that as an issue which is, you know, we have this giant culture that is the fire service. We have occupational safety health people and somehow we gotta have them talk to each other. That' s another one that I think, if we're gonna be able to start playing offense as oppose to defense maybe you should think about some of these issue and what are creative solutions to doing if the political environment is better and there's not going to be a lot of risk in doing that, but I don't know if that's the case. Another issue that's important is our relationship with other agencies and we exist because we have relationships with EPA, DOE, CDC, DOT, NIOSH, Agriculture – in conjunction with the IAFF, it's possible to impact on bigger agencies and we want to keep doing that so part of our challenge is to figure out how to make our program and training have an impact on what they do. That could be another thing for you all to think about.

We're having a meeting on April 30-May 1, 2009 in Cincinnati, on Preparedness for Chemical Responders, and we hope you all participate in that meeting. Part of what we're trying to do – we're joining up with the interstate chemical working group – all 50 states, help and environmental departments – I guess what we've learned is we're not CDC, we don't have a relationship with local and state governments, we feel like that's something that our program needs to work on, our relationship with local and state governments and those partnerships. That's kind of where we're thinking about going. Another project we have - we're marching through the 15 DHS scenarios (chemical event).

Health/Safety – Dr. Thomas Hales (see PowerPoint)

Dr. Hales presented on Heart Disease in the Fire Service: Findings from the NIOSH Fire Fighter program and on-duty fire fighter fatalities. The presentation consisted of background information, key findings, prevention and research needs. The number of fire fighter deaths is declining.

Goal: To prevent fatalities

Objectives:

- Investigations
- Identify causal factors
- Recommendations
- Interventions
- Evaluations

Conclusion

- Personal risk factors
- Occupational
- Prevention efforts need to focus on both components
- Heavy physical exertion can trigger heart attacks and cardiac arrests in fire fighters

International Association of Fire Fighters
Hazardous Materials
and
Weapons of Mass Destruction
Training Department

Advisory Board Meeting Minutes

December 3, 2009
Sheraton Gunter Hotel
San Antonio, Texas

Harold A. Schaitberger
General President

Thomas H. Miller
General Secretary-Treasurer

Advisory Board Members Present:

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Robert K. Carver, President, Florida Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Judy Jarrell, M.A., Ed.D., University of Cincinnati, College of Medicine
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Randy Wyse, President, Local 122 – Jacksonville Association of Fire Fighters

Advisory Board Members Excused:

- Steve Cassidy, President, Local 94 - Uniformed Fire Officers Association of New York

IAFF Staff Present:

- Patrick Morrison, Assistant to the General President for Education, Training and Human Relations
- Jim Lee, Assistant to the General President, Canadian Office Operations
- Jim Ridley, Director, HazMat/WMD Training Department
- Thomas Hill, Deputy Director, HazMat/WMD Training Department
- Jacqueline Dowleyne, Administrative Assistant, HazMat/WMD Training Department

Guests Present:

- Chip Hughes, Grant Manager, National Institute of Environmental Health Sciences
- Jim Remington, Grant Manager, National Institute of Environmental Health Sciences
- John Talty, Grant Manager, National Institute for Occupational Safety and Health
- Carol Mintz, Program Specialist, Department of Homeland Security/FEMA

IAFF HazMat/WMD Consultants Present:

- Harold Stolovitch, PhD, CPT, Harold D. Stolovitch & Associates, Learning and Performance Solutions

Thursday, December 3, 2009

WELCOME AND OPENING REMARKS - ***Harold A. Schaitberger, IAFF General President***

President Schaitberger welcomed the group and thanked them for their participation and involvement as Advisory Board members. He congratulated Elizabeth Harman on her appointment as Assistant Administrator of the FEMA Grant Programs Directorate, Department of Homeland Security. He then introduced Jim Ridley as her replacement and turned the meeting over to Chairman Stewart.

Chairman Don Stewart asked for a motion to adopt the 2008 minutes. The motion was made and seconded to accept the minutes as corrected. Motion passed.

Patrick Morrison, Assistant to the General President gave an overview of the HazMat/WMD Training Department, which included the mission, target population, funding partners and staff.

Jim Lee, Assistant to the General President for Canadian Operations reported on the Canadian office's staff and the accomplishments of 2009. Accomplishments included funding, delivery of the first FRO curriculum, curriculum customized for Canada, and ten new Canadian instructors.

Jim Ridley, Director of HazMat/WMD Training Department presented an overview of the Instructor Development Conference agenda. The presentation consisted of conference attendees, topics, guest speakers, curricula development status and a risk-based response model.

Thomas Hill, Deputy Director of HazMat/WMD Training Department gave an overview of funding and highlights for all grants.

Completion of the NIEHS five-year reapplication grant was due on November 20, 2009. The IAFF applied for $1.7 million per year, for the next five years, and was awaiting approval.

- ***HWWT funding*** - (August 1, 2008 through July 31, 2009) - $751,555
  Focus – to deliver *Technician* (*Tech*) or *Confined Space Rescue* (*CSR*) classes
  Goals FY 09: 10 Tech or *CSR* classes/250 students/20,000 contact hours
  Accomplishments FY 09: 31 *Tech* and *CSR* classes/683 students/45,440 contact hours
  Funding FY 10 is $750,311

- ***HDPT funding*** – (August 1, 2008 through July 31, 2009) - $297,003
  Focus – to develop a 16-hour course on incident management and responder safety
  Goals FY 09: 12 *Frontline Safety* classes / 1 *Frontline Safety* Train-the-Trainer TtT)
  Accomplishments FY 09: 13 *Frontline Safety* classes/1 *Frontline Safety* TtT/235 students
  Funding FY 10 is $289,635

- ***DOE funding*** – (September 1, 2008 through August 31, 2009) - $792,833
  Focus – to deliver training within 150 miles of a recognized DOE site – expanded outside the radius – we didn't want to restrict delivery of training if someone really needed it.
  Goals FY 09: 15 specialized *Tech* (40-hour) and 8 *Tech/CSR* classes
  Accomplishments FY 09: 32 specialized classes/665 students/26,600 contact hours
  Funding FY 10 is $625,924

- ***DOT funding*** – (October 1, 2008 through September 30, 2009) - $1,000,000
  Focus – to conduct Train-the-Trainer (instructor training) deliveries
  Goals FY 09: 12 TtT classes/35 supportive teaching sessions
  Accomplishments FY 09: 62 classes/1,102 students/5,856 contact hours
  Funding FY 10 *is* $1,000,000

- ***NIOSH funding*** – (October 1, 2008 through September 30, 2009) - $1.7m/year (5 years)
  Focus – deliver training to operations-level responders
  Goals FY 09 (137 classes): 27 two-master instructor classes/110 one-master and one-local instructor classes
  Accomplishments FY 09: 143 classes/2,651 students/56,720 contact hours – Total replacement cost award - $50,000 (Irvington, NJ)

- ***DHS funding*** – (October 1, 2007 through September 30, 2009) - $1,000,000
  Focus – to deliver *Emergency Response to Terrorism: Operations (ERT: Ops) Direct Deliveries* (PER-250) and Train-the-Trainers (PER-251)
  Goals FY 09: 39 ERT: Ops Direct Deliveries/5 ERT: Ops Train-the-Trainers
  Accomplishments FY 09: 53 Direct Deliveries/3 TtTs/1,092 students/19,904 contact hours
  Funding FY 10 is $1,000,000 + no-cost extension $44,000 from FY09

- ***DOL/OSHA – Susan B. Harwood funding*** – (FY 08 budget $265,723)
  Focus – revise/develop *Chemical Process Industries (CPI)* curriculum
  Goals: 24 CPI classes/600 students/evaluations
  Accomplishments: 23 classes/474 students/20 evaluation responses
  No-cost extension to complete FY 08 goals (20-25 Newark, NJ CPI classes starting Jan. 2010)

Dr. Stewart opened the floor to any suggestions, comments or questions.

OPEN DISCUSSION/QUESTIONS:

Dr. Jerry Chandler: What do the students have to take home with them after the course is over as a reference?

> ***Thomas Hill****: Student manual for all courses and some courses will provide them with a CD. They can also refer back to the web site.*

Dr. Judy Jarrell: Have you considered doing follow-up webinars?

> ***Patrick Morrison****: We are looking at webinars, plus we are looking at ways to expand our blended learning approach to training. The webinars could assist us in reaching the first responder population that will never receive outside formal training.*
>
> ***Dr. Judy Jarrell****: Evaluations are great, but we are learning from the evaluations that we do need to follow up. We need to give students the opportunity to come back to what they've learned and have a chance to interact again. A webinar can reach a lot of people.*

EVALUATION UPDATE – Harold D. Stolovitch, PhD, CPT

Dr. Stolovitch presented "From Evaluation to Action". The overall objective for the evaluations is to improve the quality of courses, improve course and job aid materials, make processes more efficient – save time, improve instructional quality even more – and to strengthen testing and evaluation.

HAZMAT FUSION CENTER UPDATE – Jim Ridley, Director HazMat/WMD Training Department

The HazMat Fusion Center was launched by Pipeline and Hazardous Materials Safety Administration (PHMSA) and the International Association of Fire Chiefs (IAFC). The International Association of Fire Fighters (IAFF) plays an integral role as a viable stakeholder in the Hazardous Materials Fusion Center.

What is the National Hazardous Materials Fusion Center and what is its purpose?

The HazMat Fusion Center:

- Is the central location nationally for the collection, analysis and dissemination of information about hazmat emergency response
- Ties together the hazmat training network, analysis of significant hazmat incidents, exploration of hazmat technology and continued development of hazmat tools and resources
- Will offer a national communications network for hazmat responders to share information in the areas of responder safety, training and lessons learned
- Focuses on the safety of emergency responders at hazmat incidents
- Is being built from the bottom up to reflect the needs of hazmat responders

The National Hazardous Materials Fusion Center Advisory Work Group includes members from the following:

- International Association of Fire Chiefs (IAFC)
- International Association of Fire Fighters (IAFF)
- National Association of State Fire Marshals (NASFM)
- National Volunteer Fire Council (NVFC)
- United States Coast Guard (USCG)
- Federal Emergency Management Agency (FEMA)/National Fire Academy (NFA)
- United States Department of Transportation Pipeline and Hazardous Materials Safety administration (PHMSA)
- Federal Railroad Administration (FRA)
- Federal Motor Carriers Safety Administration (FMCSA)
- Private Industry

The Fusion Center Portal was created as an online repository, which provides a bulletin board system for discussion forums, information sharing, lessons learned and hazmat reporting forms. The HazMat Fusion Center will provide a secure, web-based portal to serve as a data and information network for:

- Hazmat teams
- First responders
- Federal, state and local agencies
- The private sector

The HazMat Fusion Center serves as a tremendous asset and partnership for the IAFF, by enhancing hazmat responder safety and improving decision-making for the prevention and mitigation of hazmat incidents.

GRANTOR UPDATES:

John Talty (NIOSH) – The overall goal of the NIOSH Extramural Program is the prevention of illnesses, injuries and deaths caused by hazards on the job. Recognizing the valuable contributions of extramural scientists and educators to this endeavor, NIOSH sponsors research and training through its extramural programs, which complement the Institute's intramural programs. The creativity and special resources available in the extramural community make these programs an important component in achieving a national goal to have safe jobs and healthy workers.

Carol Mintz (DHS/FEMA) – Carol gave a brief summary of FEMA's history and milestones, National Preparedness Directorate overview, internal organizational structures and a Training Operations Branch overview. She discussed overtime and backfill funding and to how to request it through your local State Emergency Management Agencies (SAA). She also provided a list of DHS training partners.

Chip Hughes (NIEHS/DOE) – Chip gave a brief update on past, present and future plans of the National Institute of Environmental Health Sciences and programs, including the working relationship with the IAFF. Chip discussed the HazWoper standard, and how it sets the standard for training.

Dr. Stewart opened the floor to any suggestions, comments or questions.

OPEN DISCUSSION/QUESTIONS:

Jeffrey Caynon: Is there an annual report regarding the instructors (who they are, years with the IAFF, etc.) and could we get a copy? How do we address the relationship with the local president?

> ***Jim Ridley:*** *We can definitely do that.*
>
> ***Patrick Morrison:*** *Right now we are still working to define our selection process. All instructors must receive the continued approval and support of their local presidents. We are currently reviewing the selection and retention polices for the instructor cadre.*

Bob Carver: I would highly encourage all board members to attend the IDC. Hats off for getting the accreditation of IAFF programs for our members. Also do we do evaluations a year or two later? How many are still practicing after three years (trainers/trainees)? My suggestion is that you put in place a plan to evaluate these trainees three, five and ten years later.

> ***Patrick Morrison:*** *We have plans to have all instructors' evaluated in the field at least once every three years.*

Lou Paulson: I'd like to follow up on what Bob said. It might be beneficial for us as Advisory Board members to know at least what's going on in our districts, so when there are classes in our area we can stop by and observe the training. We went from a couple of days to one day and I would like you to consider a one to two day meeting. There is too much valuable information and feedback to cover in such a small time frame.

Don Stewart: Are there practical limits on the size of this program? Any long-term planning and how big do we want to go?

> ***Jim Ridley:*** *I think the sky's the limit. We certainly see the potential for growth within the department. We have an excellent staff with tremendous potential and the capability to internally support growth. As for long-term planning, we will begin to map out those plans next year. On how big we want to get, that will depend on funding partners and the availability of grant dollars.*

Thomas Hales: Do we have any idea how many fire service hazmat teams are trained by private instructors.

> **Patrick Morrison:** *We do not know the number of programs taught by private instructors. We speculate that our course is taught by outside instructors for a significant fee. This is very hard to monitor and since our program is grant funded the copyright laws in most instances don't apply. How far do we stretch our instructor pool? Currently we still have room to grow without adding new instructors. It's not just about how much training we can achieve, but are we effective in the overall delivery of our training programs. In addition, we would like to implement a full spectrum of academic HazMat programs available on the web. We are looking at a concept that will incorporate on-line classes, college programs and direct delivery courses.*

Chip Hughes: During our NIEHS strategic planning we look at this question. When Pat mentioned the IAFF University, that makes me smile. I think our focus should be on a strategic program or strategic plan. We look at organizational capacity with an organizational mission when we are trying to figure out how much money to award. How does this training program fit into what the mission of your organization is? I would caution you to keep both those things in mind when you think about expansion. You think about what your mission is and you think about how this training program fits into your organization.

Don Stewart: The question that all this discussion begs is, strategic planning. Do we have that? We need a three-year plan that shows how big you want this program to grow.

Randy Wyse: You said stretched; explain to me what you mean. Are you maxed out with training?

Patrick Morrison: *We have 91 instructors and we're not at a training load capacity at this time which means we have capability to expand. With the current state of the economy, training requests have slowed down significantly.*

Randy Wyse: But what I'm saying is, with the money we have funded, do you have enough instructors?

Patrick Morrison: *Yes we currently have enough instructors to handle the grant programs. But we're looking to expand into different areas by aggressively marketing our training courses.*

Thomas Hales: What's the market and could you market other than fire fighters?

Jim Ridley: *We are looking at tapping into other funding sources and partnering with some of the chemical agencies, companies and plants. We are looking at the railroad and that is a tough one to crack, but we plan to try penetrating that market. We do not want to be so grant reliant on the dollars that we receive right now because we know that stream can dry up at a moment's notice. We also do not want to lose the impact that this program provides because we don't have funding. I think it's incumbent upon us to find other funding partners to try to not only sustain this program in the event that we don't have the dollars, but to grow the program, and the only way that will happen is to make sure that we have a program that grows along with science as well.*

Jeffrey Caynon: I know there was an effort in diversifying the instructor cadre, what are those numbers like now?

Patrick Morrison: *It hasn't decreased. The last training pool we bought on was diversified. The General President is very committed to a diverse training cadre. The last twelve instructors that we bought on fit that commitment.*

Thomas Ryan: Just want you all to know that the quality of instructors that you are sending to us is phenomenal. Great program. Can't hear enough about the quality of instructors. Let's continue to find the good ones. They can break it down, where the students can understand.

Don Stewart: Back to diversity, just be sure to include goals, objectives and a philosophy as you continue to develop your diversity program.

Jerry Chandler: One area that we can grow in is our instructor cadre, especially with the changing of the world and technology; I would suggest training the instructors in new information from toxicology materials and nanotechnology. I would use the IDC as an opportunity for the growth of two programs. The first would be to educate them in new programs, such as nanotechnology and second, to discuss exposures to unknown hazards, recognition of signs and symptoms. Developing the technical capability of the instructor core should be an annual process. I would encourage you to think about how to keep that instructor core growing along with the rest of the program. Also can you update us on the Near-Miss program?

Patrick Morrison: *The Near Miss program is still being funded by DHS through the Fire Act Grants program. The IAFC is the lead organization for this program with the IAFF as a program partner. We use the Near-Miss program to take advantage of lessons learned and case studies and include those into our training programs.*

Carol Mintz: Let's go back to on-line training and simulation. They are very different. Simulations we use for different scenarios, such as when we are trying to make a contrast between different times of day or night, and under various weather conditions. These variances should be continued.

Thomas Hales: Check with the CDC for ideas to develop simulations of training.

Ernie Mitchell: In the area of expanding, you talked about dealing with some of the industrial fire fighters or fire brigades. I would support looking at that, and doing fire prevention type inspections and working with industrial occupancies. I find that if they knew what to do before we get there, that would greatly assist and protect fire fighters. I would also look into contacting shipping rescue groups. They take care of ships that wreck. Recent legislation that passed says these companies must also have their own fire plan. They cannot just rely on the ports and local responders. They are reaching out for assistance. It may spill over into HazMat at some point.

Judy Jarrell: OSHA developed, two years ago, and is now revising a new outreach program for maritime. It has three different tracks to it. They have 10-30 hour trainings now. I think that may be something that the IAFF may be interested in as they are revising it right now.

Meeting Adjourned: With no further business before the advisory board, Chairman Stewart adjourned the meeting.

International Association of Fire Fighters
Hazardous Materials
and
Weapons of Mass Destruction
Training Department

Advisory Board Meeting Minutes

November 30, 2010
Hyatt Regency Monterey Hotel & Spa
Monterey, California

Harold A. Schaitberger
General President

Thomas H. Miller
General Secretary-Treasurer

Advisory Board Members Present:

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Ernie Mitchell, Past President, International Association of Fire Chiefs
- Jerry Chandler, Ph.D., National Institutes of Health
- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health
- Judy Jarrell, M.A., Ed. D., University of Cincinnati, College of Medicine

Advisory Board Members on Conference call:

- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health

Advisory Board Members Excused:

- Steve Cassidy, President, Local 94 - Uniformed Fire Officers Association of New York
- Randy Wyse, President, Local 122 – Jacksonville Association of Fire Fighters

IAFF Staff Present:

- Patrick Morrison, Assistant to the General President for Education, Training and Human Relations
- Jim Lee, Assistant to the General President, Canadian Office Operations
- Jim Ridley, Director, HazMat/WMD Training Department
- Thomas Hill, Deputy Director, HazMat/WMD Training Department
- Jennifer Stewart, Director, Grants Administration
- Jacqueline Dowleyne, Administrative Assistant, HazMat/WMD Training Department

Guests Present:

- Jim Remington, Grant Manager, National Institute of Environmental Health Sciences
- Carol Mintz, Program Specialist, Department of Homeland Security/FEMA
- Kevin O'Connell, ProBoard
- Fred Piechotal, ProBoard

Tuesday, December 2, 2010

WELCOME AND OPENING REMARKS - ***Harold A. Schaitberger, IAFF General President***

President Schaitberger welcomed the Advisory Board members and thanked them for their participation and involvement as Advisory Board members. He congratulated Elizabeth Harman on her appointment as Assistant Administrator of the FEMA Grant Programs Directorate, Department of Homeland Security. He then introduced Jim Ridley as her replacement and turned the meeting over to Chairman Stewart.

Chairman Don Stewart asked for a motion to adopt the 2009 minutes. The motion was made and seconded to accept the minutes as corrected. Motion passed.

DEPARTMENTS OVERVIEWS

Patrick Morrison, Assistant to the General President presented an overview of the HazMat/WMD Training Department, which included the mission, target population, funding partners and staff.

Jim Lee, Assistant to the General President gave an update on the Canadian training program and their funding. The HazMat/CBRNE training has been so effective that the Canadian government has partnered with the IAFF to deliver the training programs.

- ***CBRNE funding*** - (April 1, 2010 through March 31, 2011) - $500,000
  Focus – to deliver *FRO training*
  Goals FY 10: Conduct 22 classes/4 Train-the-Trainer (TtT) classes
  Accomplishments FY 10: Delivered 24 FRO classes and 2 TtT classes to 508 students

Jim Ridley, Director of HazMat/WMD Training Department presented an overview of the Instructor Development Conference, new evaluation program, curricula update and various upcoming projects.

Thomas Hill, Deputy Director of HazMat/WMD Training Department presented an overview of funding and highlights for all grants.

Chairman Don Stewart mentioned the importance of Pro Board certification to our program and introduced Fred Piechota, Jr., and Kevin O'Connell, two representatives of the Pro Board.

PROBOARD PRESENTATION

Fred Piechota, Jr.: Mr. Piechota thanked the IAFF General President and Director Ridley for the opportunity to address the Board, as well as the general attendees at the IDC. The ProBoard is very excited of the prospect of a continued relationship with the IAFF to help you add value to what the IAFF does and certainly to work for our goal as to offer certification opportunities to the entire emergency service family in the years to come. Kevin O'Connell, our Senior Accreditation Member has prepared a presentation for you.

PROBOARD PRESENTATION (Cont'd)

Kevin O'Connell: I just want to say, I've been on dozens of initial sit downs with the agencies that wanted to be accredited and we went to the IAFF headquarters in July and sat down with Jim Ridley, Richard Hopkins and Vilma Perez-Atwood and 15 minutes into that meeting, I realized that we were already at a much higher level than any of the initial sit downs with any other organization. There was knowledge of who/what we are and what we can do for the IAFF. We did not have to go over that field and by the end of the meeting; we were talking details that typically are not detailed for months out. I think you should be commended.

Kevin O'Connell: Mr. O'Connell presented an overview on the founding of the ProBoard program, what has happened through the years that it has been in existence and the organizational structure. He then gave a summary of the certifications (REAL is Pro Board certification or IFSAC certification), accreditation, reciprocity, assessment methodology and matrix.

Chairman Stewart: Is there a standard template or log that you use to determine if an entity is capable of being certified? Is there a book?

Kevin O'Connell: Yes. There is an application and then a self assessment document. The initial goal of the Pro Board was to allow flexibility in how you meet the criteria; how the criteria broadly stated enough, that it would allow for flexibility in meeting the criteria, but with enough rigidity to ensure valid and reliable testing against the state. So yes, Jim and his folks have a copy.

Chairman Stewart: Do you have reciprocity with IFSAC?

Kevin O'Connell: It is up to the agency. Again, allowing agencies flexibility. Each agency, we require that they have a policy that delineates their reciprocity and we also require that they implement that policy uniformly across the board. If this person comes and we are going to accept IFSAC certificates and Pro Board certificates, if somebody else comes with one, they accept that also. Therefore, that is where you have the flexibility to overturn that policy, but you need to implement that policy fairly and across the board.

Chairman Stewart - Where is the home office?

Kevin O'Connell: Fred has an office near where he lives. He runs all of the day to day work of accreditation.

Jerry Chandler: How is this put together, financially?

Fred Piechota, Jr., Great question. Accreditation is a flat fee of $1,500.00. Everything that Kevin talked about here, is done with $1,500.00, Okay, all travel, all expenses, all the food. Every five years there is a re-accreditation fee required and there is a $1,000.00 fee for that. And the rest of the operation is funded by the entries into the registry. So, there is a fee ranging anywhere from $4.50 per entry up to $15.00 depending on how you choose to build. So between $4.50 and $15.00 people's information gets uploaded into the registry and that's how we pay the bills. So that defrays a lot of cost obviously, of the site visit but the other thing is, Kevin mentioned that we do an annual training conference, as well as, an advisory committee meeting. That is provided at no charge to one

representative of all our accredited entities. Travel, lodging, meeting, food, the whole deal, we provide for one person from every accredited entity. This year our meeting is in January. It's going to be in San Diego.

Thomas Hales: You mentioned the accreditation fee. Does that include the standards development portion for HAZMAT/WMD, or has that already been developed, or do you have to develop that?

Kevin O'Connell: Okay, in 1990, the Pro Board was out of the standard making business. When the joint counsel dissolved, NFPA said, give us that! From that point on, NFPA does the standards.

Chairman Stewart - I just have two quick comments. First, you know as a member of this community, it's wonderful to hear that another body that's expert in accrediting this sort of activity comes in and has a positive view of what we're doing with the Department. So that kind of validates that we follow along and that this group is doing an outstanding job. So, we're very happy to hear that and I've learned a lot and thank you very much for coming.

GRANTOR UPDATES

Jim Remington, Program Analyst (NIEHS): Jim congratulated the IAFF on another 5 years of funding and partnership. An overview of what NIEHS has done, where they are going, challenges and obstacles, timelines, potential events (meetings/workshops), and upcoming events were presented. Jim also touched on the recent oil spill cleanup, the process, training, lessons learned and the assistant of Joe Manasa and Jim Thompson (IAFF Master Instructors) in the training process. NIEHS did some training assessments during the response and anticipate about 149,000 or so workers were trained during the response. NIEHS is looking to get feedback from the workers, as well as the instructors, on the quality and the effectiveness of the training that was provided. NIEHS is working right now with the National Response Team to come up with some kind of standard when responding to disasters.

Dr. Chandler: In the case of these sorts of training events, who selects these reviewers? What level of technical competence are they?

Jim Remington: We have a person who is in charge of pulling together the review boards, we make recommendations of folks who are somewhat familiar with our program, and one thing she does is make sure there is no conflict of interest and who is available to sit at that review board. So, we try to get people we know, and who knows our programs, so they give everybody a pretty fair deal. Sometimes it works out, sometimes not as well. This year was particularly tough, not just with you all, but with some of the other grantees as well. We were pretty surprised by some the scores that came out of this, but we are just happy to have you still with us.

Jim Ridley: The 200 year anniversary of the 1812 New Madrid Zone earthquake that occurred is fast approaching. This was the seismic activity that caused the Mississippi River to run backwards. There has been some activity along that fault line in Chicago, IL and other parts of the mid-west earlier this year. We do have a seat at the table with the public/private partnership. Jonathan Ward and I have attended those meetings or have been on various conference calls. In our initial meeting, the question was; who can bring what to the table in the event of a disaster like that? Who's rolling in when everyone else is trying to roll out? We brought some of the experiences that occurred on 9/11 and what we want to do to get out of that vertical thinking, and try to figure out what can be done in the

public/private partnership arena to make sure everyone was engaged and our citizens are protected. Therefore, we will continue to attend the meetings and continue to provide input.

Chairman Stewart: Thanked Jim Remington for his presentation and introduced Carol Mintz.

Carol Mintz, Program Specialist, and DHS/FEMA: Carol presented an overview of the National Preparedness Directorate (NPD) within FEMA, the background of the department and how it came into existence. She then explained the different departments and how they work together, along with the organizational chart within FEMA.,

Chairman Stewart: Dr. Stewart thanked Carol for her presentation and introduced Jennifer Stewart.

Jennifer Stewart, Director of Development: Jennifer gave an overview of the new Development Department within the IAFF. The Development department is made up of two different sections.

- ***IAFF GRANTS***: Grants Administration, which oversees the IAFF's national grant programs ($12 million per year) coordinates grant reports, oversees program and financial management of grant awards, ensures compliance with all federal laws, regulations and executive orders and identifies new sources of funding. In addition to overseeing national grant programs, the Grants Administration section also fields questions and requests from IAFF affiliates interested in grants and fundraising for their departments and has a grants class offered at many IAFF events.
    - SAFER Grant – Staffing for Adequate Fire & Emergency Response Grants ($420 Million)
    - Assistance to Fire Fighters Grant ($400 Million) – Vehicle, equipment and training
    - Fire Prevention and Safety Grant ($35 Million)
    - HazMat/WMD Training Department Grants ($5.6 Million/annually)

- ***IAFF FOUNDATION***: In the fall of 2010, the IAFF undertook a new initiative to combine its existing charitable organizations under one IAFF Foundation. The Foundation will allow the IAFF to efficiently and effectively raise funds for each of IAFF's charities and in doing so support valuable programs that include burn research and prevention, firefighter health and safety, disaster relief and education, among others. The funds are:
    - Burn Fund
    - Disaster Relief Fund
    - Fallen Firefighter Fund
    - McClennan Scholarship Fund
    - Redmond Fund

Under our Developmental Department, we will also be continuing the work we do with Muscular Dystrophy Association, (MDA). The IAFF raises about 25 million dollars a year for MDA.

Chairman Stewart: I want to thank everybody first for the formal presentations. This program has been very gratifying to watch over the eight or nine years I have been involved with it, because all of our advice and input to the office has been heeded and acted on. The instructors relationship with the granting agencies, the outcome, assessment and the work that has been done by Dr. Stolovitch and Dr. Bruce Lippy, everything has been attended too. One of the things that I mentioned earlier is that we

might want to look at funding for this program to go at least five or ten years. Do we want a 10 or 15 million-dollar program, if we do, do we have a strategic program outlining the path to get that.

OPEN MIC/QUESTIONS

Dr. Chandler: Well I do have a thought and actually, it goes to the issue of the recession and the economic decline. I think from a political point of view, my view is that by no means are we out of the woods and the rising competition from two very old and very intelligent societies, India and China, quite frankly, it scares me about where we're headed. I don't think the IAFF's training programs would rank very high. If we came into a very severe budget crunch, I mean very severe, they are not simply going to be priorities for the federal government under severe conditions. Therefore, that in mind suggests that it is time to look for other potential ways to sustain the program in such eventualities. In this context, I really was delighted to learn of the interest in the military training program of this sort. The amount of training that military undertakes is phenomenal. It is just almost beyond imagination; to bring in several hundred thousand people every year, train them, literally a hundred different skills, and make an operation a military one. So, from this prospective, the question I would ask is, can the staff in some way explore potential relationships with the military? That would be much more than efforts of what are their needs and how could we contribute to those? They are certainly going to be prospecting mode and could this program really pick up some of their costs, we do say costs that has been viable. This could be done on a contractual basis as opposed to a granting basis. That would be one option.

Jim Ridley: Yes, absolutely. We actually want to do some type of memorandum with the understanding of moving forward with the training requests that have already come in. And I believe, I need to curb my enthusiasm on this because I am excited about the potential of having the military request training from us. Therefore, this will be a true litmus test for us, moving forward, especially, with our relationship with the US Army and the Marines wanting some training and to see how much of the training we can absorb as the requests are made. More importantly, I think staff is well equipped to handle any potential increase of training requests. I firmly believe this is a great opportunity for the IAFF.

Lou Paulson: First of all, as far as the military goes, I would just say, be cautious. The National Guard in the state of California wants to take over Emergency Response. If the budget decreases for them, they have to find something to do, and they are looking to take our work. I would just be very cautious from a political prospective for what they are looking for. But, I think the bigger picture, and Don asked, do we want to have a 10 million dollar or 15 million dollar program here and he started us off this morning, and I think there is a bigger picture, what the strategic plan looks like and part of that it is funding and partnership. So for me, I would like to see maybe the next time we get together, that we spend some time, not looking back on what we did this past year but, looking forward to where we want to be in five years and take that time to develop a strategic plan and look at all the alternatives and come forward and then we'll have some bench marks to move forward as we continue to run this program. I embrace making this a bigger program as long as we can serve the people effectively.

Chairman Stewart: This group of instructors is a national resource and we saw that on kind of a small scale with the Gulf Oil spill. We deployed a couple of people and were very helpful and I was wondering, is there some model like with this group of instructors, in the event of some other national tragedy, like a dirty bomb, could we have a SWAT team instruct these folks, the true experts, the true

operationally skilled folks. You know is there some roll maybe we could look at for deploying a group in the event of another national disaster. We have been fortunate in terms of not having another major terrorism event. But there have been attempts. Most recently, the attempt to package some C4 and a copy machine, etc., and they are trying. It is going to happen, but I agree that in our next meeting we build in the middle of the day, maybe some time for open dialogue or discussion around the formal presentations.

Thomas Hales: I can sort of update you on my piece of the elephant within NIOSH. We know it is a big organization, research organization, part of Health and Human Services. It does research in Occupational Safety and Health. Part of NIOSH does training. A small part of NIOSH, which gives out grants, I think 90% of their grants go externally and within internally to NIOSH, we actually have a process, now, we have to apply for grants as well and there is an internal pot of money we all are competing for. It is called the NOR process. The part of the elephant that I am working on is the Firefighter Fatality Investigation Prevention Program. Traumatic fatalities do not have the organ donors, Virginia, medical ones out of Cincinnati. In the interest of time, that program is going forward and I think we are doing well. We are having a stakeholder meeting at the FDIC. Every two years we have a stake holders meeting with the IAFF, IFC being strong stake holders and we listen very seriously. Instead of doing a stand alone meeting, it was suggested that we do it with a conference and you get a lot of input. The other input we got from both your groups, was that have one of the departments that have had a NIOSH investigation come and give us their experience. What was good about it and what was bad about it. So that is what we are planning on doing in FDIC at the end of March.

We did get some funds to conduct a large study on firefighter cancer, both incident and death from cancer. We want to thank Tom Ryan from Chicago Fire Fighters for his help. They are part of one of the groups that we will be studying, as well as, the San Francisco Fire Department. The Philadelphia Fire Department agreed to be one of the groups that we will include in our study.

I want to thank you and John, at one point, Fairfax County was in the discussion of the east coast group. There are a number of reasons why Philly was very attractive to us. One of which is that they already built a cohort that was done with NIH and the union, and we just have to update that with the past 20 years of data. We do not have to go back and recreate it from 1941, which is a huge amount of work.

The other thing is within the HHE Program within NIOSH, one of the issues we are looking at is, what fire fighters are exposed to during car fires. No one really had documented that, so we went out, simulated, and measured the chemicals, as well as, particulate, superfine particulate masked in car fires. So we actually have data about what it gives off and there is a lot of bad stuff that comes off very quickly, it is put out very quickly. Now one of the reasons why we are interested in that, is frequently firefighters do not wear their respiratory gear during that thing. Although they say they do, in my experience, they probably do not and there is a lot of bad stuff exposed.

Also, I want to thank the Chicago Firefighters, about three months ago, we went with a team to the Illinois Training Academy. They did a live fire training episode and during that process, we sampled them not only for what chemicals and particulates were in the air, but also underneath their turnout gear and on their skin, see what either penetrated or permeated the turnout gear. We do not have the results from that yet, but that is a bit of a concern, because we want to determine if it either gets around it or does it actually go through it. And then the other thing was the biological monitor or

component to it as well. So measuring what gets in your body and how it gets in your urine as well. So, we will be able to look at those two aspects. So I wanted to thank, again, Chicago for their participation.

John Niemiec: Mr. Chair, I wholeheartedly agree with our brother, Lou Paulson and friends from the great city of California that we need to move forward? However, I had a few instructors approach me early this morning about having some sort of recognition for those instructors, such as Steve Storment and a few others. That is sort like the lessons learned. What actually evolved over the years as it relates to HAZMAT, certain events, and whether it is here at this conference where we are incorporating it somewhere, somehow, someway into the actual curriculum? I think that would not only do the instructors a service, I think it would also do the students a service to sort of have a time line of past events. And to sort of look at the so called pioneers over the years. I use Steve's thing as one example. But, I am sure there are a host of instructors that are out there; that you know, Joe Gorman and the lists goes on. I think we would all benefit from that.

Chairman Stewart: Putting the current curriculum, practices and historical events in context. Certainly, this would be the place for a presentation. It is a good suggestion.

Dr. Chandler: I would like to return to Jim Remington's presentation. Actually, I have some concerns that perhaps the IAFF could participate in some way. Certainly, we are going to continue to face national disasters. Some might be from foreign enemies, others might be hurricanes, etc. and the ability to plan for these is difficult. Because the scope, their nature is actually a hazard itself, yet we do know that we need massive responses to lessen the consequences. In terms of this particular program, is there room for matching further and how do we explore with Jim, what his thoughts are with FEMA thoughts, with the interest of the IAFF, because clearly here, the IAFF has media access to very experienced individuals for coping with such situations. And it seems from a national perspective, this has potential to raise awareness as well as to, in general, do the community well.

Chairman Stewart: I agree. We should have some kind of SWAT team of instructors, in the event of some sort of fire weapons release, or a dirty bomb, you know some national treasure. These groups of instructors are unique. I don't think there is anything else equivalent to the instructors in the industry, or anywhere in academia, it is a unique resource. It could be looked at in a national prospective, so I agree Jim; I think that is a great idea.

Jim Remington: Well NIEHS taps you all, IAFF and other grantees as a national resource. You have thousands of instructors. They are subject matter experts. You have equipment resources. I was just talking with Pete Gomez, we did our program he said, that they just got a bunch of new equipment from UASI, for RAD. They have new detectors, new equipment within your own organization you have a large resource at the local level that you may not be familiar with as well. I would say, if there were a way to mind that, do. NIEHS internally, will remind you and whenever an incidence comes up, you have your roll. You are first responders, if you got folks in your community they are already going to be there. We are going to then, bring up other folks to support you; heavy equipment from maybe the operating engineers. You know, if it is a chemical, maybe chemical workers. We are going to support you, but you guys are going to be the first in. So, by all means, there is an opportunity to do that. Our issue is to get the other federal agencies to realize the value of this resource and then integrate it into the response effort better.

Dr. Chandler: But what impressed me about your comment was that it seems to be different entirely, than that of the national preparedness, which is primarily administrative and quote, unquote bureaucratic of getting organizations to work together. It is down to earth, it is practical and it is what are you going to do under these immediate circumstances?

Jim Remington: That is why we also suggest the idea of partnering with your local communities. As our grantees did at the local level so that you have that communication already established. Your community knows what resources are in their neighborhoods. You know, so, I will continue to do that. I am going to continue to work at the federal level, if you would have your members work at the local level and then maybe from top to bottom, we will come together and integrate it into the effort.

Patrick Morrison: Thanks Jim, there are a ton of issues surrounding that. Even DHS - we are not on their list to contact for a national disaster. What that does is, provide the necessary funding which you have to have to be on the list. The other problem that I have nationally is, national credentialing system where in these national disasters you can have everybody showing up and saying they are going to help and they are going to do this and then we do not really have a system in place as we have talked about. That has been debated and looked at, and we are still pushing for that under our political action team.

Chairman Stewart: Just to give a very pragmatic example of how this could have worked, in 9/11 we had all these first responders that went out there and worked in a very hazardous environment and they worked with a lot of times, without adequate respiratory protection and what's happening now is we've got a cohort of people who are dying because there is probably not a concerted group of people that could go up there and enforce some sort of discipline into a occupational message.

Chairman Stewart: This may be worth looking at possibly having some sort of additional team.

Thomas Hales: Just to Pat's issue of the individual responder getting on this national list; one of the things that came up during the Deep Water Horizon. You did have the contractors and they had these vessels of opportunity, so all these shrimpers that were put out of work, they wanted to go and collect oil. They had to be trained, but they did not have to have any medical requirements and the biggest issue was heat stress. And most of these shrimping vessel operators smoked and had high blood pressure and they would not be allowed on any response scenes under any other circumstances.

Carol Mintz: But all the workers, they should follow the rules and guidelines which would require a protection of respiratory protection. That being the topic, we are talking about training programs and there is actually a conference at the Arlington Suites. The training has been successful and I think this is where they have a partnership with the West Palm Beach program where they have a private and public partnership with a leading private IBM local agency. I forgot the university that is based there and one of the good things that they have in place, they have contracts with fishing companies and from my understanding, they are legal contracts. One of the small pieces is that they have contracts from local residents to house first responders who are coming into the area. One of the pieces that I'm going to have us start to focus on, is what do you do to take care of first responders families, so that you guys don't have to worry about your families when you are in the middle of a response? This deals with sustainability and it is one of the local issues, and that's something that the IAFF deals with on a national level and will be taught at the national level. It is a big area that FEMA has housing for people, whether it is a state building or some optional facility; lessons learned especially after Katrina.

Jennifer Stewart: Carol, where does the funding come from that pay for those? Is it public funding?

Carol Mintz: It is a combination. That is why it is a private and public partnership. The focus is on private.

Chairman Stewart: I want to thank, all of our guests; representative from the granting agency, the two gentlemen from the Pro Board and I thank the committee members. In addition, I thank Pat and Jim for, once again, planning an outstanding meeting. It is a pleasure to be involved in this community just because they are so competent and so responsive to our input.

Jim Ridley: Jim explained the expense vouchers to the board and asked that they fill the voucher out and mail it back to headquarters, as quickly as possible.

Chairman Stewart: Motion to adjourn the meeting; meeting adjourned

International Association of Fire Fighters
Hazardous Materials
and
Weapons of Mass Destruction
Training Department

Advisory Board Meeting Minutes

November 29, 2011
Hilton Clearwater Beach Resort
Clearwater, Florida

Harold A. Schaitberger
General President

Thomas H. Miller
General Secretary-Treasurer

Advisory Board Members Present:

- Harold A. Schaitberger, General President, International Association of Fire Fighters
- Donald Stewart, MD, Chairperson
- Thomas E. Ryan, President, Local 2 - Chicago
- Lou Paulson, President, California Professional Fire Fighters
- Jeffrey A. Caynon, President, Local 341- Houston Professional Fire Fighters
- John Niemiec, President, Local 2068 - Fairfax County Professional Fire Fighters and Paramedics
- Jerry Chandler, Ph.D., National Institutes of Health
- Steven M. Becker, Ph.D., University of Alabama at Birmingham, School of Public Health
- Judy Jarrell, M.A., Ed. D., University of Cincinnati, College of Medicine

Advisory Board Members on Conference call:

- Thomas Hales, MD, MPH, National Institute for Occupational Safety and Health

Advisory Board Members Excused:

- Ernie Mitchell, Past President, International Association of Fire Chiefs

IAFF Staff Present:

- Pete Gorman, Chief of Staff
- Patrick Morrison, Assistant to the General President for Education, Training, Human Relations and Development
- Scott Marks, Assistant to the General President, Canadian Office Operations
- Jim Ridley, Director, HazMat/WMD Training Department
- Thomas Hill, Deputy Director, HazMat/WMD Training Department
- Jennifer Stewart, Director, Development
- Jacqueline Dowleyne, Administrative Assistant, HazMat/WMD Training Department

Guests Present:

- Chip Hughes, Director of the NIEHS/NIH/HHS, Worker Education and Training Program
- Deborah Weinstock, Director, Michael D. Baker & Associates
- Lee Sanderson, Program Scientific Program Official, National Institute for Occupational Safety and Health
- Bernie Mizula, IAFF Curricula Consultant

Tuesday, November 28, 2011

WELCOME AND OPENING REMARKS - ***Harold A. Schaitberger, IAFF General President***

Chairman Don Stewart opened the meeting by asking the attendees to introduce themselves.

President Schaitberger greeted the board members, guest and thanked the grantors that were present for their continued support. The meeting was turned over to Chairman Stewart.

Chairman Don Stewart asked for a motion to adopt the 2010 minutes. The motion was made and seconded. Motion passed.

Chairman Don Stewart presented an overview of the Advisory Board agenda and turned the meeting over to Patrick Morrison.

DEPARTMENTS OVERVIEWS

Patrick Morrison, Assistant to the General President presented an overview of the HazMat/WMD Training Department, which included the mission, funding partners and staff.

Jim Ridley, Director of HazMat/WMD Training Department presented an overview of the Instructor Development Conference (attendees, topics and guest speakers), curricula development accomplishments and the goals for curricula development in 2012.

Scott Marks, Assistant to the General President for Canadian Operations presented an overview and update on the Canadian staff, training program, funding and the goals of the department.

Jennifer Stewart, Grants Administrator presented an overview of funding for the IAFF, the new grant software reporting system and the impact it has on grants management. She also reported on the following:

- Change in auditors
- New Payroll software (ADP)
- New Expense software (CONCUR)

Thomas Hill, Deputy Director of HazMat/WMD Training Department read a proclamation from the governor of Missouri, in recognition of training administered in the state of Missouri, by the IAFF. Thomas then presented an overview of all HazMat/WMD funding and highlights.

Thomas Ryan stated that the IAFF trained 4300 fire fighters by administering the 40-hour specialized Technician training in Chicago.

Dr. Jarrell: How do you handle tailoring your training to a specific audience?

Jim Ridley: Our instructors understand their audience and when they are not training fire fighters, they are very good about not being fire fighter specific.

Chairman Don Stewart: Will exceeding your goals, raise a red flag with your funding agencies?

Jim Ridley: We try not to saturate one area. We contact the locals and ask if they are interested in our training and go from there.

Steve Cassidy: With all the budget cuts, I would encourage you to market your state, federal and local congressmen. Invite them to Fire Ops, or something similar, to get them on board with the IAFF's training programs.

Bernie Mizula: High training numbers does not mean the program quality declines. I spoke with firefighters who attended an IAFF training session and commended the IAFF training above the Nashua, NH's Academy training.

Dr. Chandler: Be bold in marketing across state and federal house.

NIEHS CLEARINGHOUSE REPORT

Deborah Weinstock, presented an overview of the National Clearinghouse for Worker Safety and Health Training, resources they provide, their role in a national response and how to access their curricula catalog.

Dr. Jarrell: Very little is being done about prior training in a disaster. I would suggest that you be pro-active.

RADIATION/JAPAN UPDATE

Dr. Becker, presented an overview of the Japan Disaster. In addition, each attendee received a copy of the special report written by Dr. Becker, titled: Learning from the 2011 Great East Japan Disaster: Insights from a Special Radiological Emergency Assistance Mission.

PRO BOARD UPDATE

Jim Ridley & Vilma Perez-Atwood, presented an overview of the Pro Board mission, accreditation process and development schedule.

GRANTOR UPDATES

NIEHS

Chip Hughes, presented an update on the NIEHS funding and budget. Chip also mentioned that the Trainer Exchange Conference will be held in Ft. Lauderdale, Florida at the end of March 2012.

NIOSH

Dr. Sanderson, gave a brief history of his background. He developed the Fatality Assessment and Control Evaluation (FACE) program, from conception, design and implementation.

- Received FY 2011 Budget – July 2011
- 5-10% cut in budget
- Education and Research Centers (ERC) to be zeroed out
- Review of training grants – January/February
- To date, no word of any cuts in training grants

Five steps to the grant approval process:

- Screen
- Peer review to rate application
- Programatic review (by review Directors)
- Recommended list of applicants presented
- Approval from Director of NIOSH (John Howard)

Final note: SHARE SUCCESS STORIES!

Dr. Jarrell: Write letters of success stories related to business and please send them along.

Dr. Sanderson: Your training numbers do matter. If you exceed your goals, it will not affect your budget.

Chairman Stewart thanked Dr. Sanderson and opened the floor for discussion.

OPEN MIC/QUESTION

John Neimiec: How frequent is curricula developed with respect to funding? Where are you with the Infectious Disease curricula?

Pat Morrison: Based on NFPA standards, curricula is updated every couple of years.

Jim Ridley: We will be working on updating the Infectious Disease next year.

Dr. Jarrell: As of January 2012, my title will be Professor Emerita. I would like to continue to be a part of the Advisory Board.

Thomas Hales: It was mentioned at the last Advisory meeting and I would suggest that you continue to find ways to award your instructors.

Chairman Stewart: Motion to adjourn the meeting. Seconded.

Meeting adjourned.

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS®

HAROLD A. SCHAITBERGER
General President

THOMAS H. MILLER
General Secretary-Treasurer

December 20, 2012

Mr. Peter Grandillo
Grants Management Officer
Centers for Disease Control and Prevention
Procurement and Grant Office
626 Cochrans Mill Road, MS P-05
Pittsburgh, PA 15236

Ms. Maryann P. Monroe
Grants Management Specialist
Centers for Disease Control and Prevention
Procurement and Grant Office
626 Cochrans Mill Road, Bldg. 140
POB 18070
Pittsburgh, PA 15236

W. Allen Robison, Ph.D.
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
1600 Clifton Road, N.E., Mailstop E-74
Atlanta, GA 30329-4018

Dear Mr. Grandillo, Ms. Monroe, and Dr. Robinson:

Project Title: Hazardous Substance Training for Emergency Responders
10/1/2008 through 9/29/12 - Grant # 1T15OH009230

Enclosed are one original and two copies of the Hazardous Substance Training for Emergency Responders five-year final report from the International Association of Fire Fighters. The information is organized in line with the objectives that compose the basis for the agreement.

If you are in need of any additional information or have any questions, please feel free to contact me at 202-737-8484.

Sincerely,

Patrick J. Morrison
Principal Investigator
IAFF Assistant to the General President

Enclosure (3)

cc: Elizabeth M. Harman, Director, HazMat/WMD Training Department