



## Building Alliances Between Operating Engineers and Emergency Responders to Save Lives During Disasters



*“Disaster sites shouldn’t be the place for introductions.”*

— LARRY DEMARK, IUOE LOCAL 825

### National HAZMAT Program

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## **CREDITS**

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**LIST OF ACRONYMS AND ABBREVIATIONS**

<b>AED</b>	Automated External Defibrillators	<b>HVAC</b>	Heating, Ventilation and Air-Conditioning
<b>AHJ</b>	Authority Having Jurisdiction	<b>IAFF</b>	International Association of Fire Fighters
<b>ALS</b>	Advanced Life Support	<b>ICS/UCS</b>	Incident Command System/Unified Command System
<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry	<b>IUOE</b>	International Union of Operating Engineers
<b>CCO</b>	Certified Crane Operator	<b>KSA</b>	Knowledge, Skill and Ability
<b>CDC</b>	Center for Disease Control	<b>LEPC</b>	Local Emergency Preparedness Committees
<b>CDL</b>	Commercial Driver’s License	<b>MOU</b>	Memorandum of Understanding
<b>CSE</b>	Certified Safety Engineer	<b>MUSAR</b>	Michigan’s Urban Search and Rescue
<b>DEMHS</b>	Department of Emergency Management and Homeland Security	<b>NFPA</b>	National Fire Protection Association
<b>DHHS</b>	Department of Health and Human Services	<b>NIC</b>	NIMS Integration Center
<b>DHS</b>	Department of Homeland Security	<b>NIEHS</b>	National Institute of Environmental Health Sciences
<b>DOE</b>	Department of Energy	<b>NIMS</b>	National Incident Management System
<b>DOI</b>	Department of the Interior	<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>DOT</b>	Department of Transportation	<b>NRT</b>	National Response Team
<b>DPDR</b>	Domestic Preparedness and Disaster Response	<b>NTF</b>	National Training Fund
<b>DSW</b>	Disaster Site Worker Course	<b>ODP</b>	Office for Domestic Preparedness
<b>EMS</b>	Emergency Medical Services	<b>OSHA</b>	Occupational Safety and Health Administration
<b>EMAC</b>	Emergency Management Assistance Compact	<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>EPA</b>	Environmental Protection Agency	<b>SERC</b>	State Emergency Response Commission
<b>EPCRA</b>	Emergency Planning and Community Right-to-Know Act	<b>SUSAR</b>	State Urban Search and Rescue
<b>FEMA</b>	Federal Emergency Management Agency	<b>TOPOFF</b>	Top Officials
<b>GPS</b>	Global Positioning System	<b>US&amp;R</b>	Urban Search and Rescue
<b>HAZMAT</b>	Hazardous Materials		
<b>HAZWOPER</b>	Hazardous Waste Operations and Emergency Response Standard		
<b>HSPD</b>	Homeland Security Presidential Directive		



## 1.0 MAKING A CONNECTION TO BETTER PROTECT CITIZENS OF YOUR STATE

### 1.1 Why this document?

The United States has lost thousands of citizens to attacks of terrorism on its soil and to natural disasters. To help reduce this toll, the International Union of Operating Engineers (IUOE) National Training Fund-National HAZMAT Program, through a grant from OSHA, is facilitating the building of strong, collaborative relationships between IUOE local unions and State Urban Search and Rescue Teams (US&R). Emergency response organizations are being called upon to handle larger, more complex and more dangerous incidents. The main thrust of this document is that Operating Engineers – both heavy equipment operators and stationary engineers – represent a critical resource that emergency management personnel, particularly Urban Search and Rescue Teams, should integrate into planning, training, exercises and actual responses. Operating Engineers bring unsurpassed equipment skills and superior training in hazardous waste, safety and disaster response to the team. The National HAZMAT Program, located in Beckley, West Virginia, is the organization that is coordinating this process, making it easier and quicker for emergency managers to build an alliance with an IUOE local. This effort is from the bottom up, forging relationships at the local level – where all disasters start and end.



Figure 1. New Jersey Task Force One training with IUOE Local 825

This guidance promotes the protection of IUOE heavy equipment operators, also called “skilled support personnel,” and demonstrates their value in responding to disasters. The document uses three existing relationships in New Jersey, Michigan and Connecticut to demonstrate how the process can work and to provide useful lessons. The main lesson is that it takes time to build a tight, well-integrated operation – usually several years - but it is worth it. The recommendations in this document are practical and achievable because they are based on the success of ongoing partnerships between IUOE locals and State Urban Search and Rescue (US&R) Teams that have saved lives.

Operating Engineers can play a major role in *each* of the phases of a disaster, but to do so it is critical that they be integrated into planning and training before-hand so they know their role because the actual rescue phase is short, intense and often chaotic. It is possible for victims to survive for days in collapsed buildings - one man lived after being extracted 13 days after a hotel collapse in the 1992 Philippines quake. But seriously injured patients often have to receive definitive treatment in an operating room within hours to survive.<sup>1</sup> Skilled use of heavy equipment can dramatically reduce the time

needed to move large pieces of collapsed structures, thus giving rescued survivors the additional time that may mean the difference between life and death. Figure 2 indicates the roles that heavy equipment operators (hoisting and portable) and stationary engineers can play in a disaster.

Creating a strong partnership through training and joint drills can also reduce the risks to emergency response personnel. As OSHA noted at the World Trade Center:

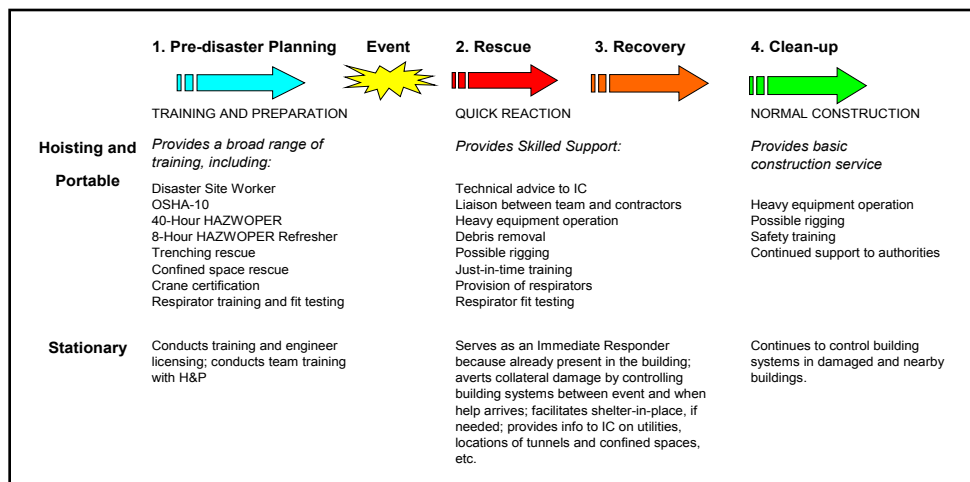


Figure 2. Roles of Operating Engineers before, during and after a disaster.

1 UK Fire Services (2007). Earthquake rescue: learning from disaster. [online]. Accessed 2-6-07 at: <http://www.ukfssart.org.uk/earthquake%20rescue.htm>

“The combination of rescue workers performing recovery operations side by side with demolition workers using heavy equipment in tight quarters and under great emotional stress posed unique challenges.”<sup>2</sup>

## 1.2 Where should Operating Engineers start?

Start with the National HAZMAT Program in Beckley, West Virginia. Call them at 304-253-8674 or email them at [hazmat@iuoeiettc.org](mailto:hazmat@iuoeiettc.org) to fully appreciate the benefits of this program and the important services your Local can provide to your community. Along with developing this guidance document, the National HAZMAT Program has created:

- an information packet you can provide to members of the emergency response community explaining the importance of forming a relationship with your local;
- a PowerPoint program about this initiative that will be delivered by IUOE instructors as part of the OSHA Disaster Site Worker course; and
- an agreement with OSHA to use the National HAZMAT Program’s training database to identify members who are currently eligible for the OSHA Disaster Site Worker Program Card and get them the cards quickly, with greatly reduced paperwork and effort by the Local.



*Figure 3. Operating Engineers at Ground Zero.*

The National HAZMAT Program has been reaching out to USAR teams across the country to make them aware of this program. We will work with you to initiate a contact with the nearest US&R team. If your state doesn’t have a US&R team, the HAZMAT program can work with you to facilitate contact with the following organizations in your state:

- Department of Emergency Management (a list of contacts is in Appendix C);
- State Homeland Security State Office;
- Public Safety Office at the State Level;
- Locals of the International Association of Fire Fighters (IAFF);
- Local Emergency Services (Fire, Police) and find out how they bring heavy equipment into disaster responses;
- Local politicians in your area and make sure they understand what services you can provide; and
- Local news media for coverage of the program you establish.

The IAFF has an innovative program that can help you make local politicians and the media aware of the importance - and difficulty - of the tasks that fire fighters and rescue workers perform. Fire Ops 101, as it is called, provides an opportunity for decision-makers in your community to suit up in turnout gear and actually fight a fire, rescue a victim and perform defibrillation on a cardiac patient - all in tightly controlled exercises. For more information on how to arrange for an event, go to the IAFF website: <http://www.iaff.org/academy/fireops/> or contact them at: [fireops101@iaff.org](mailto:fireops101@iaff.org)

<sup>2</sup> OSHA. (2003). Inside the green line, OSHA responds to disaster. Washington, D.C.: U.S. GPO. p. 23.



### 1.3 Where should emergency response groups start?

#### 1.3.1 Contact the National HAZMAT Program

The National HAZMAT Program, a specialized training arm of the IUOE National Training Fund, can put you in touch with the right person from a local near you. Locals for heavy equipment operators are termed “hoisting and portable” locals. The National HAZMAT Program will probably contact the Business Agent on your behalf. The agent will be able to discuss the construction firms in the area with which they have formal working agreements, also known as “signatory companies.” The Business Agents can bring management from these firms into discussions. The agents will also have a list of equipment rental companies in the area from which cranes, grapplers, loaders and other pieces of heavy equipment can be obtained quickly. Several states have inventoried this equipment around their state so they know what equipment is available and where it is located. This is particularly important for larger cranes and other specialty equipment. For some Locals, the HAZMAT Program may put you in touch with the Training Director.

In stationary locals, the Business Agent will probably put you in touch with the Chief Engineer for the building, the individual who is most knowledgeable about manipulating the heating, ventilation, and air conditioning (HVAC) system to allow sheltering-in-place. If your organization may respond to an incident at a large building or facility, contacting the Chief Engineer of that facility for a tour can expedite disaster planning that can better protect building occupants and responders as well.

The National HAZMAT Program can provide *free* training on a broad range of topics through funding from the National Institute of Environmental Health Sciences (NIEHS). The local union will also have training available that can help protect Operating Engineers and first responders at a disaster site. Consider having team members trained through the Locals and conducting joint efforts.

The following training is available through IUOE local unions:

- Fork Lift Training
- Extrication Techniques
- Rigging and Lifting
- Hand Signals
- Crane Safety Awareness

The following is available through the National HAZMAT Program:

- OSHA Disaster Site Worker Course
- OSHA HAZWOPER
- OSHA HAZWOPER Supervisor
- OSHA 10-Hour and 30-Hour Construction and General Industry Outreach
- Respiratory Protection
- Lead and Asbestos Awareness
- Trenching / Shoring Training (Rescue & Non-Emergency)
- Confined Space Training
- Incident Command System/ Unified Command System (ICS/UCS) Training
- Incident Stress Management
- Mold Awareness

### 1.3.2 Consider establishing a mutual aid agreement

FEMA, in the March 2004 National Incident Management System (NIMS) document, specifically noted that mutual-aid agreements are the means for one jurisdiction to provide resources, facilities, services, and other required support to another jurisdiction during an incident. Each jurisdiction should be party to a mutual-aid agreement with appropriate jurisdictions from which they expect to receive or to which they expect to provide assistance during an incident.<sup>3</sup> An example Memorandum of Understanding (MOU) that has been provided by the King County Fire Service of Washington County in the State of Washington is included in Appendix D. MOUs should be tailored to the specific needs of the organizations involved. Some common issues that are regularly addressed include:

- Payment mechanisms
- Bonding
- Insurance
- Contact mechanisms
- Equipment rental

The agreement should consider the Good Samaritan laws in place in the jurisdiction of concern. These are based on a principle of tort law that provides that a person who sees another individual in imminent and serious danger cannot be charged with negligence if that first person attempts to aid or rescue the injured party, provided the attempt is not made recklessly. Three key elements support a successful invocation of the Good Samaritan doctrine: (1) the care rendered was performed as the result of the emergency, (2) the initial emergency or injury was not caused by the person invoking the defense, and (3) the emergency care was not given in a grossly negligent or reckless manner.<sup>4</sup>

Members of State US&R teams should be aware that there is a newly-formed organization called State Urban Search and Rescue Alliance (SUSAR) that represents their interests and provides a mechanism for communicating and sharing technical information. Seventeen states first met for a group exchange of ideas in July of 2005; the number had grown to 27 by the August 2006 meeting. Information can be obtained by joining an Internet group set up at [nj-tf1@yahoogroups.com](mailto:nj-tf1@yahoogroups.com), by calling Jim Riley, the Chairman, at 732-657-7001, ext. 13, or by sending an e-mail message at [jjrnjtf1@aol.com](mailto:jjrnjtf1@aol.com).<sup>5</sup>

*“The main goal of the alliance is to unite the USAR world so we can all work together. We’re looking for what is best for the common good. That’s what we’re all about.”*

Jim Riley, SUSAR Alliance Chairman and  
National HAZMAT Program Steering  
Committee member

<sup>3</sup> U.S. Department of Homeland Security-FEMA (2004, March 1). National incident management system. P.39. [online]. Accessed 2-12-07 at: [http://www.fema.gov/pdf/emergency/nims/nims\\_doc\\_full.pdf](http://www.fema.gov/pdf/emergency/nims/nims_doc_full.pdf).

<sup>4</sup> Answers.com (2007). Good Samaritan laws. [online] Accessed 2-05-07 at: <http://www.answers.com/topic/good-samaritan-doctrine>.

<sup>5</sup> Anonymous. (2006, Dec.1). Allied response. Fire Chief Magazine. [online]. Accessed 2-6-07.

## 2.0 SCOPE

### 2.1 Building on past experience

The horrific attacks in 2001 on the World Trade Center and the Pentagon and the terrible destruction wrought by Hurricanes Katrina and Rita highlight the essential role of heavy equipment operators in responding to disasters, and working with other skilled construction trades within the incident command structure. The over 50 percent incidence rate of respiratory and emotional problems suffered by the construction trades at the World Trade Center was a call to the nation to better protect these workers.<sup>6</sup>

National HAZMAT Program trainers, working in conjunction with those from other trades and federal OSHA, developed a Disaster Site Worker Course for training the construction workers who help at disasters. This course is designed for “skilled support personnel,” to protect themselves and effectively support the incident commander to rescue victims, recover bodies and restore services after a disaster. Under the current OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard, 29 CFR 1910.120 (q) (4), skilled support personnel are only required to be provided an onsite briefing, which proved terribly inadequate at Ground Zero<sup>7</sup>.

OSHA defines this group as,

...personnel, not necessarily an employer’s own employees, who are skilled in the operation of certain equipment, such as mechanized earth moving or digging equipment or crane and hoisting equipment, and who are needed temporarily to perform immediate emergency support work that cannot reasonably be performed in a timely fashion by an employer’s own employees, and who will be or may be exposed to the hazards at an emergency response scene.

The common assumption prior to September 11<sup>th</sup> was that Skilled Support Personnel would not be needed as quickly as first responders – firefighters, Emergency Medical Technicians, police – nor would their efforts require as much time. This has proven incorrect. Skilled support personnel showed up shortly after the first responders and stayed for months at Ground Zero and the Gulf. In 2003, the government recognized this problem and redefined “first responder” under Homeland Security Presidential Directive/HSPD-8 to include:

...those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers as defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101), as well as emergency management, public health, clinical care, public works, and *other skilled support personnel (such as equipment operators)* that provide immediate support services during prevention, response, and recovery operations.<sup>8</sup>

Skilled Support Personnel are at risk like other responders. There are a host of hazards associated with responding to natural disasters and terrorist acts. Building collapse sites can present electrocution hazards, dangerous working surfaces, chemical releases, and exposures to asbestos, lead, bloodborne pathogens and noise, among others.

6 Herbert, R. et al. (2006, Dec.). The World Trade Center Disaster and the Health of Workers: Five-Year Assessment of a Unique Medical Screening Program. *Environ Health Perspectives*. 114: 1853–1858.

7 Lippy, B. E. (2002). Safety and health of heavy equipment operators at Ground Zero. *Journal of Industrial Medicine*. 42:542.

8 Homeland Security Presidential Directive/HSPD-8 (2003, Dec. 17). National Preparedness. [online] Accessed 1-15-07 at: <http://www.whitehouse.gov/news/releases/2003/12/20031217-6.html>

## 2.2 The audience for this guidance

This document rests on the underlying philosophy that the best way to forge strong working relationships between IUOE heavy equipment operators and emergency response organizations is to work from the bottom up. Consequently, this guidance is aimed at two populations: 1) IUOE local unions and 2) local emergency response organizations, such as State Urban Search and Rescue teams (US&Rs), Local Emergency Preparedness Committees, and mutual aid organizations. Many other organizations can benefit from this guidance, including:

- Locals of the International Association of Fire Fighters;
- Fire fighting organizations across the country;
- Agencies of the federal government;
- Construction firms; and
- Other construction trades unions.

The one target population for this program is the 119 IUOE local unions nationwide representing nearly 360,000 members. The IUOE membership is composed of: heavy equipment operators (technically known as hoisting and portable) and stationary engineers (those who operate the systems within buildings). Both of these groups are critical to the nation's capability to respond to acts of terrorism and natural disasters. Stationary engineers have worked with the government to develop guidelines for using the ventilation systems of buildings to manage chemical or biological releases. Heavy equipment operators demonstrated their value at the Oklahoma City disaster, Ground Zero, the Pentagon, The L'Ambiance Building collapse in Bridgeport, Connecticut and the Gulf coast after Hurricanes Katrina and Rita.

## 2.3 The development process

This guidance was made possible by funding from the Department of Labor, Occupational Safety and Health Administration to the IUOE National Training Fund under Susan Harwood Grant Number 46C6-HT33. The guidance was developed by a steering committee of members of the National HAZMAT Program, IUOE locals unions and a representative from each of their state US&R teams who have responded together during emergencies (see Appendix A). This group met on December 11<sup>th</sup> and 12<sup>th</sup>, 2006 at the National HAZMAT Program Training Center in Beckley, West Virginia to develop the format and scope of this document.

### 3.0 BACKGROUND AND CAPABILITIES

#### 3.1 A long union history of disaster response

Operating Engineers have repeatedly responded to disasters, as evidenced by their work after the L’Ambiance Building collapse in Bridgeport, Connecticut in 1987; the San Francisco and Los Angeles earthquakes in 1989, 1991, 1992, and 1994; the Midwest Region Flood of the Mississippi River in 1993; the Alfred P. Murrah Building bombing in Oklahoma City, Oklahoma in 1995; the World Trade Center (WTC) and Pentagon disaster and cleanup in 2001; the Fresh Kills Reclamation site in 2001, the Space Shuttle Columbia disaster cleanup in 2003, and the Gulf Coast cleanup in 2005. Skilled Operating Engineers at Ground Zero completed the cleanup below cost, ahead of schedule, and without any additional fatalities.

##### 3.1.1 Ground Zero



Within days of the collapse of the towers, the Operating Engineers hazmat team arrived onsite with their hazmat trailer loaded with respirators and sampling equipment. The team included several industrial hygienists and safety experts who handed out nearly 11,000 respirators, regularly met with New York City officials and federal experts, assessed hazards, established appropriate sampling protocols and collected air samples of exposures within the cabs of the grapples and cranes operated onsite. The team also included hazmat trainers who helped create the awareness training that all of the site workers had to attend and then delivered it to 1,500 workers on site.

Figure 5. National HAZMAT Program trailer at Ground Zero

##### 3.1.2 Hurricanes Katrina and Rita

The National HAZMAT Program printed and distributed over 10,000 copies of the primary safety and health booklet developed for responders to protect themselves when in the Gulf. The organization also provided safety and health training in Louisiana, Mississippi and Florida under a FEMA-activation of the Health and Safety Annex of the National Response Plan and an OSHA grant for training workers in the Gulf.

##### 3.1.3 IUOE Local Union capabilities

The IUOE is a building and construction trades union that has represented operators of heavy equipment (hoisting and portable or HP) and stationary (building) engineers since 1896. Today, there are 360,000 members in 119 local unions throughout the United States. Operating Engineers are found on construction sites working as heavy equipment operators, mechanics, and surveyors.

Stationary engineers are employed to operate, maintain, and repair the HVAC equipment as well as other systems and critical infrastructure in a variety of commercial, industrial, institutional, and residential structures. For emergency planners preparing to respond to terrorist actions, it is important to understand that stationary engineers are onsite around-the-clock at wastewater treatment plants, petrochemical plants, office buildings, airports, schools, hotels, hospitals, stadiums, and arenas. Many of them have received specialized training in controlling building systems to prevent and mitigate attacks against their facilities.



Figure 4. Rubble after the L,Ambiance Plaza collapse in 1987. Photo credit National Institute of Standards and Technology

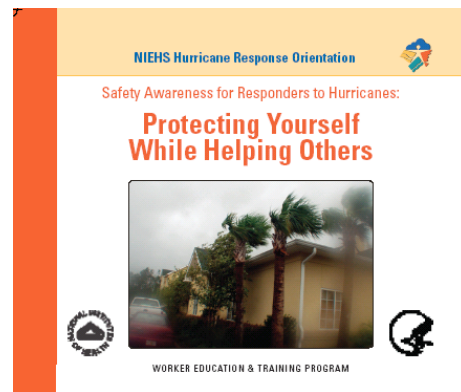


Figure 6. Booklet printed by National HAZMAT Program for Responders to Katrina

Heavy equipment operators respond to most disasters, but Stationary Engineers have been called in to investigate disasters like the Sago, WV Mine disaster, where they built sophisticated models of the airflow. Both sides of the union have brought their skills to the aid of the country in a time of crisis.

H&P Locals have developed one-of-a-kind training sites to conduct drills with USAR Teams and first responders to simulate conditions on disaster sites; the stationary side has developed special one-of-a-kind training models to demonstrate many disaster scenarios that can affect a building's HVAC system. Currently work is underway on second generation models that can be transported anywhere in the world.



Figure 7. Model of airflow inside the Sago Mine.

### 3.2 National HAZMAT Program Capabilities

The National HAZMAT Program is the largest provider of the OSHA-approved Disaster Site Worker Training courses (7600 for workers and 5600 for trainers) in OSHA Region III. The National HAZMAT Program has been providing specialized hazardous waste worker training to Operating Engineers for 18 years under funding from the National Institute of Environmental Health Sciences, the Department of Energy and the Department of Labor.

Through these agreements and grants, the National HAZMAT Program has provided Hazardous Waste Operations and Emergency Response (HAZWOPER) and OSHA Train-the-Trainer classes to over 285,000 heavy equipment operators, stationary engineers, and other worker populations. The National HAZMAT Program is based on peer-training of workers by fellow workers from their trade. The results have been shown to provide workers with unparalleled safety and health training.

Of particular importance to US&R teams and other emergency response organizations, the National HAZMAT Program offers a broad spectrum of safety and health training and services at *no cost*, including the following:

- Direct training by seasoned instructors of HAZWOPER, OSHA 10- and 30-Hour Construction and General Industries Outreach, OSHA Disaster Site Worker (7600 and 5600), confined space entry, among other specialty courses;
- Training materials, including personal protective equipment, and other types of equipment for National HAZMAT Program Master Instructors' HAZWOPER and other safety and health related classes;
- Technical safety and health, emergency/disaster response, and energy security and restoration assistance;
- Safety and health regulations and standards interpretation assistance;
- Training data information from the National training database for IUOE Local Union members and others who have completed training through the National HAZMAT Program; and
- Expertise to provide best practices and information sharing, develop scenarios, and conduct exercises to prepare all stakeholders to protect and restore critical infrastructure should an event, manmade or natural, occur.

The National HAZMAT Program team has the capability of supporting emergency responders by deploying seasoned instructors, industrial hygienists and safety professionals, along with equipment and supplies to conduct just-in-time training at a disaster site. As grantees of the National Institute of Environmental Health Sciences (NIEHS), they are part of NIEHS's Emergency Support Activation Plan and can receive mission assignments after formal activation by FEMA of the National Response Plan. With Susan Harwood grant funding under OSHA, the National HAZMAT Program has been able to improve their worker training materials to more effectively reach worker populations before and during disasters. The National HAZMAT Program is located at 1293 Airport Road, Beaver, West Virginia 25813.

To inquire about training opportunities, call (304) 253-8674, fax a request to (304) 253-7758, or send an email request to [hazmat@iuoiettc.org](mailto:hazmat@iuoiettc.org)

### 3.3 Urban Search and Rescue

#### 3.3.1 Federal Urban Search and Rescue capabilities under FEMA

The Federal Emergency Management Agency (FEMA) website describes The National Urban Search and Rescue (US&R) Response System as a framework for structuring local emergency services personnel into integrated disaster response task forces.<sup>9</sup> These task forces, complete with the necessary tools and equipment, skills and techniques, can be deployed by the Department of Homeland Security for the rescue of victims of structural collapse.

There are 28 national US&R task forces located throughout the continental United States, trained and equipped to handle structural collapse. Any task force can be activated and deployed by FEMA to a disaster area to provide assistance in structural collapse rescue. Alternately, they may be pre-positioned when a major disaster threatens a community. Each task force must have all its personnel and equipment at the embarkation point within six hours of activation. The task force can be dispatched and en route to its destination in a matter of hours.

Each task force is comprised of 70 specialists, and is divided into six major functional elements: search, rescue, medical, hazmat, logistics and planning. The task force is divided into two 35-member teams, which allows for the rotation and relief of personnel for round-the-clock search and rescue operations.

Some of the capabilities of the US&R task forces, as noted by FEMA, are:

- Physical search and rescue operations in damaged or collapsed structures;
- Operations in a known or suspected weapons-of-mass-destruction environment;
- Emergency medical care for entrapped victims, task force personnel and search canines;
- Reconnaissance to assess damage and needs, and provide feedback to other officials;
- Assessment/shut-off of utilities to houses and other buildings;
- Hazardous materials evaluations;
- Structural and hazard evaluations of buildings;
- Stabilization of damaged structures, including shoring and cribbing operations; and
- Quick deployment with the team of 62,000-pound equipment caches.



Figure 8. FEMA Safety Officer onsite.

FEMA manages federal response and recovery efforts following any national incident. FEMA also initiates mitigation activities, works with state and local emergency managers, and manages the National Flood Insurance Program. FEMA became part of the U.S. Department of Homeland Security on March 1, 2003.

#### 3.3.2 State Urban Search and Rescue capabilities

Nearly all states have formed one or more of their own US&R teams to ensure that they have these critical capabilities available in the state for emergencies that are not national in scope and where the rescue of individuals is paramount. Teams are typically funded by the state, large cities and by grants from Office for Domestic Preparedness (ODP), DHS and the Urban Area Security Initiative (UASI). The State teams often differ markedly from their federal counterparts in FEMA, which reflects the uniqueness of disasters in the different areas of the country. There are also considerable differences among States. Some, for instance, maintain collapsed building teams, but not US&R teams.

These teams represent one of the prime target audiences for this guidance. State US&R teams - such as those in New Jersey, Connecticut, and Michigan - have formed strong working partnerships with IUOE local unions that have provided the teams with far greater capabilities for the protection of the citizens of the state. These unique partnerships are explored further in Section 3.4.2.

<sup>9</sup> U.S. FEMA (2007). National Urban Search And Rescue Response System. [online] accessed 1-13-07 at: <http://www.fema.gov/media/backgrounders/usr-wmd.shtm>

### 3.3.3 Local Emergency Planning Committees

Local Emergency Planning Committees (LEPCs) are mandated by the Federal Superfund Amendments and Reauthorization Act of 1986 (SARA), under Title III, the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). This Act requires that each state create a State Emergency Response Commission (SERC) to govern their LEPCs and ensure that they are in compliance.

Whether a result of a natural disaster, an accident or criminal act, the LEPC develops mechanisms to mitigate, monitor, prepare for and respond to hazardous material incidents. One critical function of the LEPC is to ensure that its citizens have access to the information, and an understanding of the hazardous materials located in their community, as well as the resulting response plans that will ensure the public's health and safety. Public access to this information is one of the cornerstones of the LEPC.

To ensure that all aspects of hazardous material risks are covered, the composition of a LEPC must contain representatives from the local fire department, police department, board of health, emergency medical services, hospital, media, emergency management agency, community groups, public works, and operators of facilities using hazardous materials. It must also have representatives of elected state and local officials. This is an ideal opportunity for local unions and construction firms to make the broad community aware of the indispensable services they can provide in response to most disasters.

## 3.4 Reasons for this guidance

### 3.4.1 Proven need

Operating Engineers, along with other construction workers, arrived at the World Trade Center, Pentagon, and Oklahoma City disaster sites shortly after the first responders and stayed for months. They provided the overwhelming majority of labor hours at the clean-up of these sites, but were only required to have cursory training in emergency response and the hazards that can be present in such environments before working at these sites. At the World Trade Center disaster, the training was three hours in length and formally began three months after the towers came down. *Too little, far too late.*

Even after the obvious difficulties that IUOE heavy equipment operators and other construction trades experienced during the response at the World Trade Center, government officials have been slow to include the construction trades in disaster planning, as the following example illustrates.

On May 12, 2003, the largest terrorism response drill ever held in U.S. history began with the “detonation” of a mock dirty bomb that spread radiation in downtown Seattle. The force of the simulated blast collapsed buildings and overturned a bus, injuring at least 170 “victims” and trapping some in the rubble. This drill, the first of its kind since the terrorist attacks of September 11, 2001, was part of the exercise mandated by Congress called TOPOFF 2 (for Top Officials), designed to test and improve the nation's capacity to respond to terrorist events.

The hazmat team that responded to the site was a unit of the Seattle Fire Department, and many other firefighters also participated in the exercise. If this had been a real attack, the skills of construction workers such as crane and heavy equipment operators would have been essential to move debris to enable the rescue of victims.

Part of the exercise called for dispatching a crane to the site to move debris to facilitate rescue operations. At approximately 4 p.m. on the day of the exercise, the fire department placed a call to a crane company to dispatch a crane to the site under a pre-existing agreement with the company.

Although the crane operator knew the call would be coming, he had no other involvement or preparation for his



Figure 9. Operating Engineers removing debris at WTC.





Figure 10. TOPOFF 2 Dirty bomb simulation, Seattle 2003.

participation in the event. He proceeded to drive a 120-ton crane to the exercise entry point where there was a security inspection and a badge issued. For reasons unknown, the crane operator was told to wait at the entry point and was not directed to proceed to the site of the explosion, where “dummy” victims were buried in rubble, until about four hours later. After proceeding to the site where the victims were buried, he waited an additional four hours, but was never called upon to operate the crane to move debris, contrary to what had been planned.

The crane operator did not have a respirator or protective equipment and no inquiries were made by anyone in the incident command structure about his safety training. Particularly damning was the fact that within several hours drive, at the Department of Energy’s Hanford complex, there were IUOE heavy equipment operators who were trained to operate equipment in hazardous waste and radiation environments while wearing Level B protective

ensembles. The planners for TOPOFF 2 never knew of the existence of these specialized Skilled Support Personnel and, therefore, never requested their services.

This guidance is formulated to promote the communication of these connections in the future. The IUOE National Training Fund, National HAZMAT Program is taking the lead and has received funding to support a national effort.

### 3.4.2 Proven successes

The rewards of teaming IUOE Local Unions of heavy equipment operators with State US&R teams has been shown repeatedly as the following examples demonstrate.

#### 3.4.2.1 IUOE Local 825 and New Jersey Task Force 1

With nearly 8,000 members across the states of New Jersey and lower New York, Local 825 represents an important resource for the citizens of the region. The training facilities in South Brunswick, NJ and Middletown, NY are equipped with state-of-the-art equipment, simulators, and instrumentation. Courses offered there include hazardous waste and emergency response, hazard communication, crane safety, crane certification, and forklift certification, among many others.

The Locals involvement with New Jersey Task Force One began in 2003 when the union arranged for the Task Force to use, at no cost, six pieces of heavy equipment with operators in a mock disaster response. This was two weeks before the Tropicana parking garage collapsed. This timing proved critical. When real disaster struck the partnership was cemented and operators began to participate in the rescue almost immediately.

This was six years after NJ-TF1 had been established. In 1997 the organization was created to address a technical rescue void in the State Emergency Response Plan and provide advanced technical search and rescue capabilities to victims trapped or entombed in collapsed buildings. There are currently more than 220 active members from Fire, Police, Emergency Medical Services (EMS) and various civilian occupations. Members are volunteers who represent all 21 counties of the State. NJ-TF1 operates under the NJ State Police/Office of Emergency Management, Homeland Security Branch, Emergency Management Section. NJ-TF1 can respond to large incidents such as structural collapse, confined space rescue, hi-angle rope rescue, trench collapse, and swift water/flood rescue. They served with distinction at Ground Zero.



Figure 11. NJ-TF1 cribbing the collapsed section of Tropicana parking garage.



Figure 12. NJ- TF1 at Ground Zero

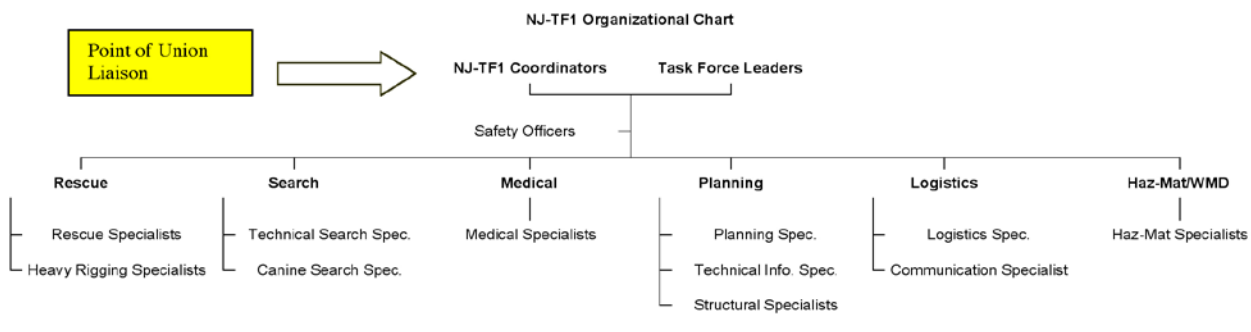
For years Local Union 825 and NJ-TF1 have been working together to build a solid foundation, where the strengths of both organizations can be utilized to the fullest. Both Local 825 training staff and NJ-TF1 team members have benefited greatly from this unique partnership, which includes cooperative training programs and the ability to conduct training simulations at both the NJ-TF1’s Lakehurst facility and Local 825’s South Brunswick training center, all at no charge to either organization.

The IUOE heavy equipment operators come under the “rescue” element of the Incident Command Structure and are trained to FEMA’s US&R System requirements and NFPA’s 1670 Standard. The Local also provides direct consultation to the Task Force Coordinators and Leaders, as indicated in Figure 13.

The training regimen includes developing proficiency in:

- structural collapse rescue;
- rope rescue;
- confined space rescue; and
- trench rescue.

Figure 13. Organizational Chart of NJ-TF1 showing liaison with Union



The training and cooperative partnership between Local 825 and NJ-TF1 has allowed new and unique techniques to be introduced into emergency response scenarios. These new techniques utilize both the skills of Local 825 heavy equipment operators as well as those of NJ-TF 1 members. Both organizations believe this can only improve rescue operations, when every minute can count in the lives of victims trapped in structures.

Construction contractors have been extremely cooperative with the team, offering to provide equipment when called upon. Many contractors have been more than willing to participate after they learn about the program.

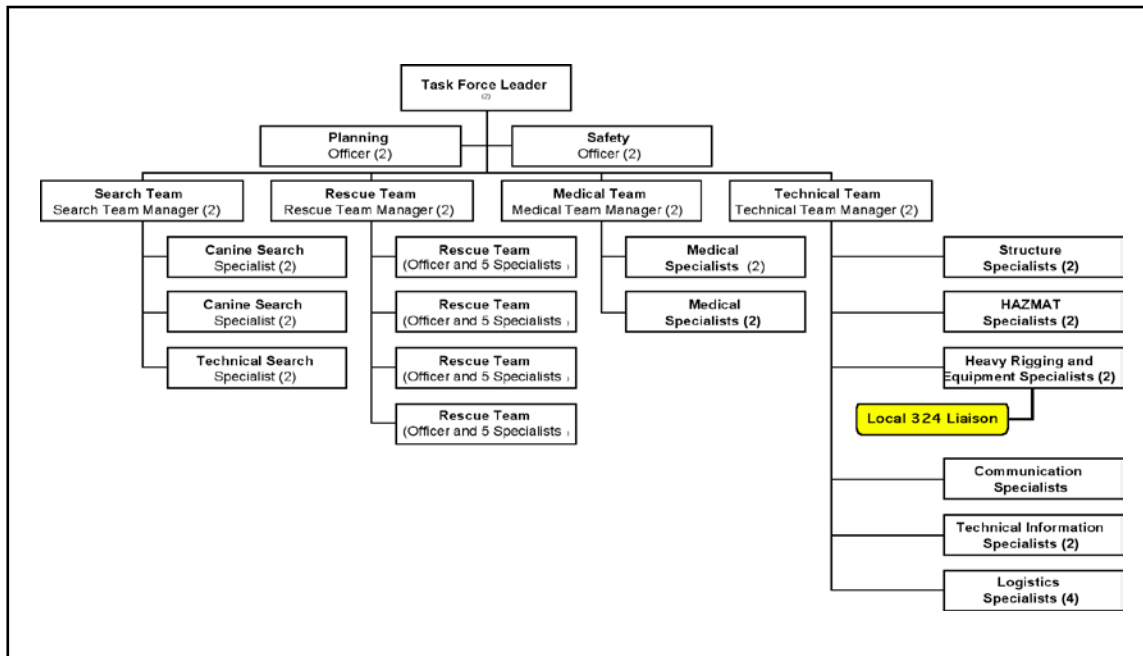
All members of the NJ-TF1 must present credentials to be allowed on a disaster site. All of Local 825 Training Center staff, select business agents and lead engineers were given credentials to facilitate the movement of equipment and trained personnel to any disaster in the state. The business agents for the union were excited about this partnership because it meant a greater cementing of the relationship between construction firms and the local union. In practice, on most jobs, the lead engineers function as the liaison between the union and contractor. This position is key to understanding how to improve coordination and communication among IUOE locals, construction firms and US&R teams.

In October 2003, the Tropicana Casino Resort parking garage in Atlantic City, New Jersey, collapsed, killing four people and injuring 30 others. Response to the incident included NJ-TF1 and members of IUOE Local Union 825. Members of Local 825 had realized previously, through training received from the National HAZMAT Program and experiences at the WTC, that a disaster site is not the place to make introductions. This teamwork meant that the necessary heavy equipment, such as cranes and loaders, was on-site, allowing rescue to proceed quickly and effectively.

The following lessons were learned from this partnership:

- members of the Task Force must meet with the contractors and discuss what equipment they have available and how the Task Force can use them;
- arrangements must be made for the Skilled Support Personnel and their equipment to get to the site and access the restricted zone;
- credentials for the Task Force must be clearly established beforehand with the police who will be maintaining the perimeters. For heavy equipment operators in NJ, the card states that an individual is a qualified “Support Specialist.” This card will also be accepted for access to military bases during a disaster. To qualify for this card, an operator must be current in HAZWOPER training, must have taken the OSHA-10 Hour and OSHA Disaster Site Worker course (OTI #7600). Additionally, if he or she is a crane operator, they must be certified in New Jersey, i.e., a Certified Crane Operator (CCO);
- unions should have their Business Agents trained in the OSHA Disaster Site Worker course, at a minimum, so they can get onto the site to help direct union support;
- Business Managers, Business Agents, and Training Directors from the union should be involved and should start at the bottom to gain support;
- the team must jointly develop a checklist of equipment that may be needed prior to an event; and
- the Task Force must be strict on training: if an individual’s training isn’t current, their Task Force card is cancelled.

Figure 14. Organizational chart for MUSAR showing union liaison



### 3.4.2.2 IUOE Local 324 and Michigan Urban Search and Rescue

Local 324, headquartered in Livonia, Michigan is equipped with a world-class training facility, called the Howell Education Center. Local 324 and MUSAR have been working together since 1999 and respond together to requests for assistance from local and state agencies.

The cooperative arrangement is so strong that the Michigan Urban Search and Rescue Training Foundation and Local 324 hold US&R training at the Local Union site. Michigan's Urban Search and Rescue (MUSAR) was formed in 1990 by several local Fire Departments to address the lack of a state technical rescue asset. To date the task force has responded to several local emergencies and conducted the rescue of several live victims. MUSAR is an informal network of fire, rescue, civilian, and professional organizations and personnel.

A sister organization, the Michigan Urban Search and Rescue Training Foundation, is a not-for-profit foundation governed by a board of directors that, together with local 324 and the State's hazardous materials training center, has provided specialized technical, search, rescue, and medical training to hundreds of local and state emergency responders and skilled support personnel. MUSAR's Board of Directors includes a total of three positions filled by IUOE Local 324 members. Operating Engineers also serve as advisors to the MUSAR Heavy Rigging and Equipment Specialist and can fill in that position, if requested (see Figure 14). MUSAR and Local 324 have served on many local disaster sites and conducted operations in accordance with NFPA 1670 and state OSHA standards.

Local 324 started providing the following training, in partnership with MUSAR, for the Task Force:

- Summer 1999: updated the MUSAR Trench Rescue course;
- Fall 1999: hosted the Trench Technician Train-the-Trainer course;
- From 2000 to 2004: collaborated on a collapsed building course, revised trench course, and worked with Michigan OSHA on Confined Space Rescue/Confined Space Entry standards; and
- Currently providing regular courses on rigging, confined space and confined space rescue.

The most important result of this collaboration has been the creation of the MUSAR Homeland Security Training Facility on the premises owned by Local 324 in Howell, Michigan, which was dedicated in September 2005. This facility provides the resources for the team to practice rescue from confined spaces, trenches, collapsed buildings, and crashed cars. Additionally, training is provided at all of the levels: awareness, operations, and technician.

MUSAR has several clear benchmarks for improvement. One is to provide training to Michigan fire departments in the rural regions because few have robust technical rescue capabilities. At present, approximately 50 of the 1,147 fire departments in Michigan have personnel trained for technical rescue and only about 12 of those, along with Local 324, provide the necessary support to the MUSAR task force. Local 324 serves as a focal point for meetings of the task force and the training foundation. It also provides guidance on technical operations with heavy equipment.

### 3.4.2.3 IUOE Local 478 and Connecticut Urban Search Rescue

IUOE Local 478 is the largest supplier of trained, qualified heavy equipment operators, mechanics, and support personnel in the State of Connecticut and has been providing this service to the State for 90 years. From its humble starting point in 1911 of 18 members, Local 478 has grown to over 4,000 members and an advanced Apprenticeship Training and Skill Improvement Center in Meriden that includes a crane simulator and Homeland Security program.

The Connecticut USAR team was established in December 2002 to assist local and state emergency responders in technical rescue incidents beyond their



Figure 15. IUOE 324 and MUSAR Homeland Security Training Facility.



Figure 16. Student operating crane simulator at Local 478.



*Figure 17.* CT-Task Force One responding to a propane gas explosion in Colchester, CT, September 9, 2004.

capabilities. The team is under the Connecticut Department of Emergency Management and Homeland Security (DEMHS) and consists of volunteers from a variety of fields, such as law enforcement, firefighting, emergency medical, health care, engineering, other government agencies, and private corporations. Following the FEMA model they have a rescue component that includes heavy equipment and rigging specialists.

The Command Staff for the team met with the Deputy Commissioner of the DEMHS to describe the value of their relationship with IUOE Local 478 and promote the creation of a formal memorandum of understanding between the State of Connecticut and the Local. Part of the argument for using heavy equipment operators who have received OSHA Disaster Site Worker and HAZWOPER training is that they appreciate the importance of evidence preservation. During a response to an arson fire, the Connecticut Fire Department hired a local firm with a crane to assist them and the operator

destroyed all of the evidence.

Another important reason for first responders to establish a connection with Locals is that the Operating Engineers and their equipment are often on site at collapses of buildings under construction, an unfortunately far-from-rare occurrence. For instance, the L'Ambiance Plaza, a 16-story residential project under construction in Bridgeport, Connecticut, completely collapsed on April 23, 1987, killing 28 construction workers. Heavy equipment operators, including a member of the steering committee, went to work immediately removing rubble.

#### ***3.4.2.4 IUOE Local 835, Stationary Engineers***

Local 835 is a Local Union of 2,000 Stationary Engineers responsible for operation of facilities such as high-rise buildings, universities, hospitals, generation facilities and chemical companies with jurisdiction in half of Pennsylvania and all of Delaware. In February 2004, Temple University in Philadelphia, Pennsylvania, experienced a gas line main fire. The fire shut down major highways and threatened some of the main buildings on campus. Temple University also houses an infectious disease building, and is home to years of ongoing research, including cancer treatment and prevention, all of which were threatened by the fire.

When the traditional First Responders (firefighters and police) arrived, they were greeted by the IUOE Local 835 Stationary Engineers in charge of the building operating systems. Rather than walking onto the scene with little or no knowledge, they were met by a Building Engineer who, because of previous training through the National HAZMAT Program, not only understood his role in emergency response and how the incident command system worked, but how all of the systems functioned in the buildings that were at risk from the fire. The Building Engineer briefed the incident commander on the actions needed to secure the HVAC and electrical systems, as well as the contents of the building housing the infectious disease laboratory. The Building Engineer continued to support the incident commander throughout the response, providing information and resources to ensure the safety of the First Responders, as well as protecting as much of the property as possible.

## 4.0 TRAINING NEEDED FOR OPERATING ENGINEERS TO SUPPORT US&R TEAMS

### 4.1 Training under the National Incident Management System (NIMS)

This country is now under the National Incident Management System (NIMS), which requires specific and standardized training. The training approach that has been developed for the Incident Command System (ICS) serves as a model and is strongly advised for any individual participating in disaster response. Interdisciplinary training is an important part of the model, particularly regarding incident command, and will prove quite valuable to Operating Engineers. FEMA's Emergency Management Institute offers free training, issuing more than 3,000,000 individual course completion certificates each year. Information on this free online training is available at: <http://training.fema.gov/EMIWeb/IS/IS%20Brochure.doc>

The effort to coordinate and standardize training nationally is still a dynamic, changing process. To be sure of the latest information, Operating Engineers should go online to the NIMS Integration Center (NIC) at: <http://www.fema.gov/emergency/nims/index.shtm> The NIC was established by the Secretary of Homeland Security and oversees all aspects of NIMS.

Operating Engineers will benefit from the following free courses offered by FEMA. Note that the designation of "IS" indicates the course is offered over the Internet as "Independent Study."

- **Introduction to the Incident Command System ICS 100 (IS-100).** This is awareness training for personnel who require a basic understanding of the Incident Command System. It represents the foundation for upper level ICS training, consequently, FEMA recommends all personnel involved in any capacity with disaster response take this training. Operating Engineers who may function as Skilled Support Personnel are advised to take IS-100.
- **Basic Incident Command System ICS 200 (IS-200).** This upper level training will allow personnel to operate efficiently within the Incident Command System during an incident and is most valuable for personnel who are likely to assume a supervisory position. ICS-100 is a pre-requisite to the ICS-200 course. Skilled Support Personnel who may serve in a supervisory capacity should take this training.
- **Introduction to the National Incident Management System (IS-700):** This web-based awareness level course explains NIMS components, concepts and principles. Although designed to be taken online interactively, course materials may be downloaded and used in a group or classroom setting. Answer sheets are available from the Emergency Management Institute's Independent Study Office at 301-447-1256. To obtain the IS-700 course materials or take the course online go to <http://training.fema.gov/emiweb/IS/is700.asp>.
- **Introduction to National Response Plan (IS-800):** FEMA also recommends that emergency managers take IS-800, which is an introduction to the National Response Plan that explains the NRP's 15 Emergency Support Functions (ESFs). This course is also available online, but can be downloaded and used in a classroom setting, too.<sup>10</sup> It can be accessed at <http://training.fema.gov/emiweb/IS/is80.asp>.

### 4.2 Emergency response training specifically for Skilled Support Personnel

Unquestionably, the OSHA 16-Hour Disaster Site Worker (DSW) Course is critical for not only Operating Engineers, but any of the construction trades brought into a disaster. Having had a pivotal role in the creation of the course, the National HAZMAT Program has also conducted more DSW training in OSHA Region III than any other currently-approved provider. Disaster Site Trainers are authorized to conduct the *OSHA 16-Hour DSW Course (#7600)*, and receive "Course Cards" from OSHA for their students. To become an authorized trainer, you must complete the *OSHA DSW Train-the-Trainer Course (#5600)* offered by the National HAZMAT Program. For information on this trainer course please call (304) 253-8674 or email [hazmat@iuoeiettc.org](mailto:hazmat@iuoeiettc.org).

<sup>10</sup> U.S. DHS- FEMA (2007). NIMS Training. [online] Accessed 2-12-07 at: [http://www.fema.gov/emergency/nims/nims\\_training.shtm](http://www.fema.gov/emergency/nims/nims_training.shtm)

### ***The Program Card***

The IUOE and the National HAZMAT Program supports OSHA's goal for the DSW Training Program: "to encourage the development of a cadre of workers who are highly trained to respond safely to natural and man-made disasters."<sup>11</sup> OSHA has identified three courses that workers need to take to accomplish this goal. These courses are designed to be taken pre-incident, i.e. before work at any disaster site.

OSHA will issue a Disaster Site Worker Training Program card (the "Program Card") for workers who complete all three of the following courses:

1. OSHA 10-Hour Construction Outreach Training Course (pre-requisite to the OSHA 16-Hour DSW course #7600). Training considered to be acceptable as an equivalent to this course is the OSHA 30-hour Construction Outreach Training Course;
2. New OSHA 16-Hour DSW Course #7600; and
3. HAZWOPER (40-Hour HAZWOPER minimum) training.

The OSHA 10-Hour Construction Outreach course provides information and awareness of safety and health hazards that occur on a daily basis on a normal construction site. OSHA has developed the OSHA 16-Hour DSW #7600 course to provide instruction relevant to emergency situations, where working conditions and hazards may be drastically different from normal operations, and to ensure that workers learn how to wear and seal-check half-face respirators.

The 40-Hour HAZWOPER training is the minimum level of training for workers engaged in hazardous substance removal or other activities which may expose workers to hazardous substances, including chemicals, biological agents, radioactive materials, and explosives. Site-specific information and training will continue to be needed at every disaster, but cannot be addressed in pre-incident training. It is also expected that participants under this program will continue to obtain HAZWOPER refresher training. Additional training, such as the National HAZMAT Program's training module, "Demolition Safety: Conventional and Unconventional Jobsites," is available and can be part of refresher training.

### ***The Course Card***

OSHA notes on their website that not all workers will be able to or have the need to take HAZWOPER training. It is essential, however, that all workers who may be involved at a disaster site have a basic understanding of:

- safety and health hazards that may occur at any construction site;
- differences in hazards between a disaster site and a regular construction site; and
- inspection, donning, and doffing of an air-purifying respirator for their own protection.

Workers who complete the OSHA 10-Hour Construction Outreach course and the OSHA 16-Hour DSW #7600 course will receive a Disaster Site Worker Course Card (the "Course Card"). Training considered to be equivalent to the OSHA 10-Hour Construction Outreach course is the OSHA 30-Hour Construction Outreach course.

The National HAZMAT program strongly encourages all Locals to train workers to the "Program Card" level, if at all possible. It should be considered arming Operating Engineers to more thoroughly protect themselves in very dangerous environments.

<sup>11</sup> OSHA. (2007). Disaster Site Worker Outreach Training Program Guidelines. [online]. Accessed 1-15-07 at: [http://www.osha.gov/fso/ote/training/disaster/disaster\\_training.html](http://www.osha.gov/fso/ote/training/disaster/disaster_training.html)

## **5.0 US&R HEAVY EQUIPMENT AND RIGGING SPECIALIST**

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### **5.1 Significance**

Heavy equipment operators are not interested in being emergency responders, but they must have a direct connection with the Incident Command Structure to provide any meaningful support. In many, but not all cases, the Heavy Equipment and Rigging Specialist, a formal member of the state and federal US&R teams who reports to the rescue team leader, is the best connection. One of the formal duties of this individual is “interacting with and coordinating efforts between task force personnel and heavy equipment and crane operators.” Section 5.3 contains the formal FEMA description of this position, which should prove helpful to IUOE members unfamiliar with the incident command structure. This is reference information for qualifying to work as a member of a US&R task force, but is beyond the requirements for Skilled Support Personnel.

### **5.2 Recommended training**

The National Fire Protection Association has a specific set of recommendations for training US&R teams. NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*, provides recommended training for team members and also established the training needed for specific levels: awareness, operations and technician.

### **5.3 FEMA description of Heavy Equipment and Rigging Specialist**

This is a formal title for a member found on all of the State and FEMA US&R teams. This position has been filled by Operating Engineers on some State US&R teams, but on other teams Operating Engineers provide assistance and recommendations to this US&R heavy equipment and rigging specialist. They may also provide support directly to the Team Leader or Incident Commander. The following requirements are set by FEMA for the federal teams and are included for informational purpose.<sup>12</sup> State teams often have differing requirements.

#### **5.3.1 General requirements for the Heavy Equipment and Rigging Specialist**

1. Must be able to meet the physical requirements of the sponsoring agency with or without accommodations.
2. Must be available on short notice to mobilize within six hours and be self-sufficient for at least 72 hours for a response assignment of up to 10 days in austere environments.
3. Must be capable of improvising and functioning for long hours under adverse conditions.
4. Must maintain current inoculations for Diphtheria/Tetanus (or Tetanus only if there is a contra-indication to Diphtheria), Hepatitis A & B, Measles/Mumps/Rubella (if born after 1957), and Polio.
5. Must be able to function safely at heights and on or around rubble.
6. Must be aware of the signs, symptoms and corrective measures of critical incident stress syndrome.
7. Must understand and adhere to safe working practices and procedures as required in the urban disaster environment.
8. Must have a working knowledge of FEMA’s US&R Response System, organizational structure, operating procedures, safety practices, terminology, knowledge of all task force equipment, and communications protocols.
9. Must have successfully completed the First Responder Operations Level for Hazardous Materials as per OSHA Standard 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.
10. Must be currently certified in America Heart Association (or equivalent) Cardiopulmonary Resuscitation - Basic Life Support.

<sup>12</sup> U.S. Department of Homeland Security, FEMA (2006, Oct.) National Urban Search & Rescue Response System: Heavy Equipment & Rigging Specialist Position Description.



11. Must have a working knowledge of the Incident Command System including successful completion of the IS-100, IS-200, IS-700 and IS-800 on-line courses.
12. Successful completion of the DHS/FEMA US&R Orientation Course or equivalent.
13. Successful completion of Respiratory Protection training and quantitative fit test per 29 CFR 1910.134.
14. Successful completion of the DOJ Emergency Response to Terrorism, Basic Concepts or equivalent.
15. Successful completion of the FEMA/US&R Weapons of Mass Destruction Enhanced Operations.
16. Successful completion of Awareness Level training per NFPA 1670 including:
  - Confined Space Operations;
  - Water Rescue Operations; and
  - Structural Collapse Operations.
17. Successful completion of Garmin V GPS (Global Positioning System) Awareness Level course.
18. Must understand the needs of and provide support to their counterparts within the task force for specific operations, techniques and application of tools and equipment.
19. Must possess training and experience in personal safety in US&R environments.
20. The authority having jurisdiction shall assure that the individual meets or exceeds the required knowledge, skills, and abilities (KSA's).

### **5.3.2 Position specific requirements**

The Heavy Equipment and Rigging Specialist is responsible for performing various assessments and construction-related liaison for the task force during incident operations. The Heavy Equipment and Rigging Specialist reports directly to the Rescue Team leader.

### **5.3.3 Description of duties**

The Heavy Equipment and Rigging Specialist is responsible for:

- Assessing the need for and capabilities of various construction-related equipment to assist task force personnel in US&R activities.
- Identifying appropriate rigging techniques to assist in the rescue of victims or stabilization of collapsed buildings, including the development of rigging plans and procedures.
- Interacting with and coordinating efforts between task force personnel and heavy equipment and crane operators.
- Adhering to all safety procedures.
- Providing accountability, maintenance, and minor repairs for all issued equipment.
- Performing additional tasks or duties as assigned during a mission.

The requirements and criteria for the position are identified in the categories of knowledge, skills and abilities (KSA)

#### 5.3.4 *Knowledge*

The Heavy Equipment and Rigging Specialist must have:

1. Knowledge of the operational characteristics and capabilities of light and heavy construction equipment, such as load charts.
2. An understanding of the methods of construction and demolition of structures.
3. Knowledge of construction materials.
4. Knowledge of heavy rigging operations, to include:
  - Use and application of rigging tools;
  - Knowledge of lift capacity assessment;
  - Knowledge of lift engineering applications;
  - Knowledge of equipment maintenance and inspection procedures; and
  - Knowledge in the use of anchor systems.
5. Knowledge of shoring methods and materials.
6. Knowledge of universal hand signals for heavy equipment.
7. Completed Basic Rescue Module consisting of Confined Space (entrant), basic Rope Rescue, and Trench Awareness.
8. Completed the FEMA Heavy Equipment and Advanced Rigging Training course.
9. Knowledge of how Rescue Specialists are trained to perform Breaking and Breaching, Lifting and Moving, and Shoring Construction.

#### 5.3.5 *Skills*

The Heavy Equipment and Rigging Specialist must be:

1. Experienced in the heavy construction field, such as heavy equipment operator, crane operator, iron worker, rigger, or other applicable field.
2. Proficient in the use of cutting torches and related welding equipment.

#### 5.3.6 *Abilities*

The Heavy Equipment and Rigging Specialist must:

1. Be able to interact effectively with Task Force personnel, especially the Rescue Manager, Safety Officer and Structures Specialist.
2. Be able to prepare a competent Heavy Equipment and Rigging Activity Plan.
3. Be capable of recognizing unsafe heavy equipment operations and appropriately addressing them to ensure site safety.

## **6.0 PREQUALIFICATION OF MEMBERS IN THE PARTNERSHIP**

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### **6.1 Operating Engineers**

To enable quick and safe responses, it is important to pre-qualify all of the members of this partnership of US&R teams, IUOE Local Unions, contractors and vendors.

#### **6.1.1 Basic**

To participate at any level in a response to a disaster, Operating Engineers should strive for the following qualifications. (For some jurisdictions, like the New York Port Authority, a background check may also be needed).

1. Proficiency with IUOE Skill Standards for the specific pieces of equipment needed for the response
2. OSHA 10-Hour Construction Outreach course
3. OSHA 16-Hour DSW #7600 course (the OSHA “Course Card”)
4. OSHA 40-Hour HAZWOPER course (the OSHA “Program Card”)
5. Forklift training
6. Certified Crane Operator (CCO)-proper crane license
7. Commercial Driver’s License (recommended)

#### **6.1.2 To participate as a Task Force member**

To participate as a Task Force member, it is highly advisable that Operating Engineers also get the following training:

- NIMS ICS training
- Rigger (IS 100-200)
- CPR/First Aid/AED
- Hazard Awareness & Operations/8-hr.

### **6.2 Contractors**

Contractors can facilitate their work with US&R teams by creating a detailed equipment list that identifies the equipment that could be made available for a broad range of services during disasters. NJ has not only identified the type of equipment, but the location, through Global Positioning System (GPS) coordinates, of the equipment. This information is kept in a database that is available to the emergency management organizations throughout the state. The State US&R team will identify what format they would like to have the information.

On projects where IUOE members are participating in a response, there is no mechanism for them to receive compensation unless the firm they are working for has an established agreement with the union. These are called “signatory companies.” Contractors that respond to disasters during the rescue phase will have their equipment on site and, therefore, most readily available for additional work as the site transitions from rescue to recovery and then to cleanup. Consequently, being on the list of available contractors is good for the community – and for business.

Contractors must provide points of contact that can be reached 24 hours a day. It isn’t sufficient to know what equipment is available and where, someone has to be available to dispatch the equipment. Contractors must agree to make staff available around the clock to initiate a disaster response and document that the staff members who will be onsite have taken required training. Finally, contractors should also work out payment arrangements with the State prior to being activated to ensure there are no paperwork problems or long delays in getting compensated for their work.

### 6.3 Vendors

All vendors for equipment or supplies needed by the Task Force must be listed on a master list for the materials they can supply and how they can be reached 24 hours a day. Rental equipment companies are often relied upon to support a disaster response. It is important to determine if they have arrangements to provide labor with their equipment and how they qualify the operators who will arrive with the equipment. Insufficiently trained operators only exacerbate the difficulties of a disaster and put responders at risk.

### 6.4 State US&R team members

The well-defined training for US&R Teams, both by the individual states and FEMA, makes pre-qualifying team members relatively straightforward. Experience from the World Trade Center disaster, however, pointed out the need for emergency responders to learn more about working safely around heavy equipment. Too often emergency responders approached heavy equipment from the operator's blind spot, did not pay sufficient attention to the swing radius of the grapplers or to the potential instability of the support under the grapplers.

OSHA's Disaster Site Worker course deals with these issues and, therefore, should be considered as a good course for US&R team members.



*Figure 18.* Grappler that fell through surface of pile at WTC. Courtesy of OSHA.

## **7.0 RESOURCES**

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FEMA, in NIMS, identifies resources needed for emergency response as a combination of personnel and equipment required to enable incident management operations. Resources may be organized and managed in three different ways, depending on the requirements of the incident:

- (i) *Single Resources.* These are individual personnel and equipment items and the operators associated with them.
- (ii) *Task Forces.* A Task Force is any combination of resources assembled in support of a specific mission or operational need. All resource elements within a Task Force must have common communications and a designated leader.
- (iii) *Strike Teams.* Strike Teams are a set number of resources of the same kind and type that have an established minimum number of personnel. The use of Strike Teams and Task Forces is encouraged, wherever possible, to optimize the use of resources, reduce the span of control over a large number of single resources, and reduce the complexity of incident management coordination and communications.<sup>13</sup>

The NIMS Integration Center has the responsibility for overseeing the National Resource Management Working Group, which was established by FEMA and is responsible for creating a national resource typing protocol. This is very much a fluid process with much work to be done, but the Group has completed a set of definitions for fire and hazardous materials resources and has created a working definition of typing.<sup>14</sup> Typing is “based upon a minimum level of capability described by the identified metrics for that resource or component...assigning the Type I label to a resource implies that it has a greater level of capability than a Type II of the same resource, based on its power, size, or capacity, and so on to Type IV.”<sup>15</sup>

13 U.S. Department of Homeland Security. (2004, March 1). National Incident Management System. [online]. Accessed 1-12-07 at:

[http://www.fema.gov/pdf/emergency/nims/nims\\_doc\\_full.pdf](http://www.fema.gov/pdf/emergency/nims/nims_doc_full.pdf)

14 U.S. Department of Homeland Security. FEMA (2005, July). Typed resource definitions. Fire and hazardous materials resources. FEMA 508-4. [online]. Accessed 2-13-07 at: [http://www.fema.gov/nims/mutual\\_aid.shtm](http://www.fema.gov/nims/mutual_aid.shtm)

15 U.S. Department of Homeland Security. FEMA (2006, March 24). NIMS basic resource typing system. FEMA 501-9. p.6. [online]. Accessed 2-13-07 at: [http://www.fema.gov/pdf/nims/NIMS\\_basic\\_resource\\_typing\\_system.pdf](http://www.fema.gov/pdf/nims/NIMS_basic_resource_typing_system.pdf)

**Table 1. U.S. Department of Homeland Security, FEMA Table of US&R Resources. Category: Search & Rescue, Emergency Support Function # 9 (ESF #9)<sup>16</sup>**

Minimum Capabilities (Component)	Minimum Capabilities (Metric)	Type I	Type III
Personnel	Number of People per Response	70-person response	28-person response
Personnel	Training	NFPA 1670 Technician Level in area of specialty; Support personnel at Operations Level	NFPA 1670 Technician Level in area of specialty; Support personnel at Operations Level
Personnel	Areas of Specialization	High angle rope rescue (including highline systems); Confined space rescue (permit required); Advanced Life Support (ALS) intervention; Communications; WMD/HazMat operations; Defensive water rescue	Light frame construction and basic rope rescue operations; ALS intervention; HazMat conditions; Communications; and trench and excavation rescue
Personnel	Sustained Operations	24-hour search & rescue operations; Self-sufficient for first 72 hours	12-hour S&R operations; Self-sufficient for first 72 hours
Personnel	Organization	Multidisciplinary organization of Command; Search; Rescue; Medical; HazMat; Logistics; Planning	Multidisciplinary organization of Command; Search; Rescue; Medical; HazMat; Logistics; Planning
Equipment	Sustained Operations	Potential mission duration of up to 10 days	Potential mission duration of up to 10 days
Equipment	Rescue Equipment	Pneumatic Powered Tools; Electric Powered Tools; Hydraulic Powered Tools; Hand Tools; Electrical; Heavy Rigging; Technical Rope; Safety	Pneumatic Powered Tools; Electric Powered Tools; Hydraulic Powered Tools; Hand Tools; Electrical; Heavy Rigging; Technical Rope; Safety
Equipment	Medical Equipment	Antibiotics/ Antifungals; Patient Comfort Medication; Pain Medications; Sedatives/Anesthetics/ Paralytics; Steroids; IV Fluids/ Volume; Immunizations/Immune Globulin; Canine Treatment; Basic Airway; Intubation; Eye Care Supplies; IV Access/Administration; Patient Assessment Care; Patient Immobilization/Extrication; Patient/ PPE; Skeletal Care; Wound Care; Patient Monitoring	Antibiotics/Antifungals; Patient Comfort Medication; Pain Medications; Sedatives/ Anesthetics/Paralytics; Steroids; IV Fluids/Volume; Immunizations/Immune Globulin; Canine Treatment; Basic Airway; Intubation; Eye Care Supplies; IV Access/ Administration; Patient Assessment Care; Patient Immobilization/ Extrication; Patient/ PPE; Skeletal Care; Wound Care; Patient Monitoring
Equipment	Technical Equipment	Structures Specialist Equip; Technical Information Specialist Equip; HazMat Specialist Equip; Technical Search Specialist Equip; Canine Search Specialist Equip	Structures Specialist Equip.; Technical Information Specialist Equip; HazMat Specialist Equip; Technical Search Specialist Equip; Canine Search Specialist Equip
Equipment	Communications Equipment	Portable Radios; Charging Units; Telecommunications, Repeaters, Accessories; Batteries; Power Sources; Small Tools; Computer	Portable Radios; Charging Units; Telecommunications; Repeaters; Accessories; Batteries; Power Sources; Small Tools; Computer

<sup>16</sup> “Resource typing”, the effort to list appropriate equipment and supplies under the NIMS, is ongoing. The FEMA site, particularly the NIMS Integration Center, should be checked for the latest version of this list. Go to <http://www.fema.gov>.

Equipment	Logistics Equipment	Water/Fluids; Food; Shelter; Sanitation; Safety; Administrative Support; Personal Bag; Task Force Support; Cache Transportation/ Support; Base of Operations; Equipment Maintenance	Water/Fluids; Food; Shelter; Sanitation; Safety; Administrative Support; Personal Bag; Task Force Support; Cache Transportation/ Support; Base of Operations; Equipment Maintenance
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**APPENDIX A**

**Steering Committee Members**

Contact Information	Biography
<p><b>Donald Booth, MS</b>                      Project Manager for this document and Safety Professional for the IUOE National Training Fund, National Hazmat Program                      1293 Airport Road                      Beckley, West Virginia                      (304) 253-8674</p>	<p>Mr. Booth holds an Undergraduate Degree in Criminal Justice and a Masters Degree in Safety and Environmental Management. Mr. Booth is responsible for technical research, creation, and revision of training modules, management of staff instructors, and is an instructor. Mr. Booth works for IUOE National HAZMAT Program as a Safety Professional. As part of his collateral duties, he is responsible for the development and instruction of safety and health training modules related to OSHA Construction Industry, General Industry, Disaster Site Worker, and various other safety and health topics. He was also responsible for conducting risk and hazard assessments for innovative environmental remediation technologies developed for the DOE. Mr. Booth has designed and conducted evaluations of technologies, participated in several regional and national conferences and workshops, and trained Operating Engineers on safety and health, Homeland Security, Energy Security, and Emergency Response topics. Mr. Booth currently serves as a participating member on the Federal Response Plan (FRP) Emergency Support Function (ESF) 10 and Office of Solid Waste and Emergency Response (OSWER)/Labor Union Health and Safety Task Force.</p>
<p><b>William R. Byrnes</b>                      Instructor: IUOE Local 825                      338 Deans Rhode Hall Road                      P.O. Box 405                      Dayton, NJ 08810                      Office: (973) 921-2900                      (908) 783-3707 cell                      (732) 341-4536 home  <a href="mailto:WilliamB@iuoe825.org">WilliamB@iuoe825.org</a></p>	<p>Mr. William Byrnes served with the Army 82<sup>nd</sup> Airborne Engineers for three years, but for the last 36 years has been a member of the Operating Engineers Local 825. During that time he worked as a lead engineer for six years. Most recently, for the last six years he has been an instructor at the Training Center for Local 825 where he teaches HAZWOPER, OSHA Disaster Site Worker and OSHA construction safety courses. He is also a certified crane operator (CCO) instructor and practical examiner. He currently serves as a member and liaison of the NJ Task Force 1, as well as sitting on the Task Force International Advisory Board, representing Local 825.</p>
<p><b>David D'Ostilio</b>                      Instructor: Local 478                      240 Cheshire Road                      Meriden, CT 06451                      (203) 237-3962 ext. 19                      Fax (203) 639-0875                      Cell 203) 537-2907  <a href="mailto:ddostilio@local478.org">ddostilio@local478.org</a></p>	<p>Mr. D'Ostilio has a degree in civil highway engineering from Wentworth Institute in Boston and completed courses in Environmental Biology from Sacred Heart. He has been a hazmat coordinator for Local 478 for 17 years and serves as the liaison between Local 478 and Connecticut's Task Force 1. David has completed extensive hazardous waste training and provides crane instruction for Local 478.</p>



<p><b>John Kovach</b>                  IUOE National Training Fund, National HAZMAT Program                  1293 Airport Road                  Beckley, West Virginia                  (304) 253-8674  <a href="mailto:jkovach@iuoeiettc.org">jkovach@iuoeiettc.org</a></p>	<p>Mr. John J. Kovach is a safety specialist and assistant program coordinator for the National HAZMAT Program. He has five years of experience in management oversight of the National Energy Technology Laboratory’s (NETL) safety and health programs, a DOE site with 650 employees. He has 15 years managing Federal and Contractor operating projects safety and health program including Industrial Hygiene, hazard communications, fire protection, and OSHA activities. He was the NETL Emergency Response Program Manager, EOC coordinator, and the Primary Incident Commander.</p>
<p><b>Jim Leslie</b>                  Instructor: IUOE Local 12                  2190 S. Pellissier Place                  Whittier, CA 90601                  Office (714) 827-0497                  Fax (714) 827-4591                  Home (951) 924-0120  <a href="mailto:jimleslie@charter.net">jimleslie@charter.net</a></p>	<p>Mr. Leslie has been a Master Instructor for the National HAZMAT Program for more than a decade. He conducts training at IUOE Local Union 12, a Hoisting and Portable local in Whittier, California. Mr. Leslie pertinent experience includes developing a homeland security plan for his local. He has evaluated innovative cleanup technologies on Department of Energy sites through the National HAZMAT Program. He currently serves as an apprenticeship instructor, teaches at a community college, and develops curriculum.</p>
<p><b>John Mancini</b>                  Deputy Chief, Waterbury (CT) Fire Dept/Task Force Leader CT-TF-1                  Brainard Field                  269 Maxim Road                  Hartford, CT 06114                  Office: (860) 566-1940                  Cell: (203) 228-7470  <a href="mailto:dcmanwfd@optonline.net">dcmanwfd@optonline.net</a></p>	<p>Mr. John Mancini has been a member of the Waterbury (CT) Fire Department for the past 25 years. He has served as a firefighter, Lieutenant, Captain, Battalion Chief and is currently Deputy Chief. John is also a Task Force Leader for the State of Connecticut Urban Search and Rescue Task Force, CT-TF1. John holds an Associates Degree in Fire Technology and a Bachelors Degree in Public Fire Service Administration. John resides with his wife and two children in Northfield, Connecticut.</p>
<p><b>William D. (Bear) Nelson</b>                  Master HazMat Instructor &amp; Assistant Safety Director                  O.E. IUOE Local 324                  275 East Highland Road                  Howell, MI 48843                  Office: (517) 546-9610                  (888) 256-9610                  Cell: (517) 404-1003  <a href="mailto:bear@iuoe324.org">bear@iuoe324.org</a></p>	<p>Bill “Bear” Nelson has been involved with MUSAR since 1999. Bear has been and continues to be an instructor, consultant, team member, project facilitator and also serves as an elected MUSAR Board Member for over 3 years! Bear has been involved in many actual incidents as a MUSAR team member. Bear has been documenting that MUSAR’s performance is enhanced by the Operating Engineers Local 324 partnership. The MUSAR records show the Local has been involved in three times more successful live rescues as than body recoveries. Helping to rescue the citizens of Michigan, what more could one ask of life?</p>

<p><b>Daniel Oberst ,PEM</b>                  Technical Rescue Course                  Manager                  Training Division                  City of Lansing, MI Fire                  Department                  120 E. Shiawassee St.                  Lansing, MI 48933                  Office (517) 483-7649                  Fax (517) 483 4579  <a href="mailto:doberst@ci.lansing.mi.us">doberst@ci.lansing.mi.us</a></p>	<p>Captain Dan Oberst, P.E.M. is a 21-year veteran of fire and rescue service. Capt Oberst is assigned as the Special Operations and Technical Rescue Programs Manager for the City of Lansing MI Fire Department. Dan also serves as a Task Force Leader for the Michigan Urban Search and Rescue Task Force and is the Vice chair for the Michigan Urban Search and Rescue Training Foundation, a not for profit organization that delivers rescue training programs for US&amp;R teams</p>
<p><b>Jim Riley</b>                  Task Force Leader- New                  Jersey Task Force 1                  NAES Lakehurst                  CR #547                  Hangar #5, Door #30                  Lakehurst, NJ 08733                  Office: (723) 657-7001 x13                  Cell: (609) 947-5842  <a href="mailto:Jpprilej@gw.njsp.org">Jpprilej@gw.njsp.org</a></p>	<p>Jim Riley graduated from Rutgers University with a Bachelor of Arts in 1967. He served in the U.S. Army as a First Lieutenant in Vietnam. He retired as the Fire Director for the City of New Brunswick, N.J after 25 years in the Fire Service.</p> <p>He is a graduate of the National Fire Academy Executive Fire Officer Program. Even though retired, Jim stays active by serving as a Task Force Leader with New Jersey Task Force One, New Jersey’s Urban Search and Rescue Team. He also serves as Chairman of the State Urban Search and Rescue Alliance (SUSAR).</p>
<p><b>Jesse J. Wagner Sr.</b>                  Training Director                  IUOE Stationary Locals 835                  - 835A - 8358                  1064 Pontiac Rd.                  Drexel Hill, PA 19026                  Office: (215) 204-8898                  Cell (609) 313-3350  <a href="mailto:jaybird@net-gate.com">jaybird@net-gate.com</a></p>	<p>Mr. Wagner is a Stationary Engineer at Temple University where he has worked for over 22 years. In his work as a Stationary Engineer, Mr. Wagner holds a Class “A” Engineer’s License in Philadelphia, Pennsylvania, a Black Seal High Pressure License in New Jersey, in addition to a Chief Engineer’s Operating License. Mr. Wagner was named the first Training Director for IUOE Stationary Local 835 in January 2002. In his role as Training Director, he is responsible for the Health and Safety Training for nearly 2000 members. Mr. Wagner has been a Master Instructor for the National HAZMAT Program located in Beckley, West Virginia since 1995. He is a certified Hazmat Instructor as well an Outreach Instructor for the OSHA 500 and 501 Courses and Disaster Site Worker Course. Mr. Wagner was appointed to the IUOE Homeland Security Committee in September 2002 where he developed curriculum for training Stationary Engineers to protect building ventilation systems. Since January 2003, Mr. Wagner has been an instructor for the West Virginia Army National Guard’s Homeland Defense Joint Task Force. With the Army, Mr. Wagner has conducted vulnerability training for events such as the Republican and Democratic Conventions in 2004. In January 2006, Mr. Wagner was asked to join the Sago Mine Disaster Investigation Team, for which he constructed scale models of the mine and the mine’s ventilation system for the public and media at the hearings held in Buckhannon, West Virginia. On June 19, 2006, for his dedication and expertise on this project, Mr. Wagner was awarded a Certificate of Commendation by WV Governor Joe Manchin III.</p>

## **APPENDIX B**

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### State Emergency Management Organizations

Alabama Emergency Management Agency  
5898 County Road 41  
P.O. Drawer 2160  
Clanton, Alabama 35046-2160  
(205) 280-2200  
(205) 280-2495 FAX  
[ema.alabama.gov/](http://ema.alabama.gov/)

Alaska Division of Emergency Services  
P.O. Box 5750  
Fort Richardson, Alaska 99505-5750  
(907) 428-7000  
(907) 428-7009 FAX  
[www.ak-prepared.com](http://www.ak-prepared.com)

American Samoa Territorial Emergency Management  
Coordination  
(TEMCO)  
American Samoa Government  
P.O. Box 1086  
Pago Pago, American Samoa 96799  
(011)(684) 699-6415  
(011)(684) 699-6414 FAX

Arizona Division of Emergency Management  
5636 E. McDowell Rd  
Phoenix, Arizona 85008  
(602) 244-0504 or 1-800-411-2336  
[www.azdema.gov](http://www.azdema.gov)

Arkansas Department of Emergency Management  
P.O. Box 758  
Conway, Arkansas 72033  
(501) 730-9750  
(501) 730-9754 FAX  
[www.adem.state.ar.us/](http://www.adem.state.ar.us/)

California Governor's Office of Emergency Services  
3650 Schriever Ave.  
Mather, CA 95655-4203  
(916) 845-8510  
(916) 845-8511 FAX  
[www.oes.ca.gov/](http://www.oes.ca.gov/)

Colorado Office of Emergency Management  
Division of Local Government  
Department of Local Affairs  
9195 East Mineral Avenue  
Suite 200  
Centennial, Colorado 80112  
(720) 852-6600  
(720) 852-6750 Fax  
[www.dola.state.co.us/oem/oemindex.htm](http://www.dola.state.co.us/oem/oemindex.htm)

Connecticut Office of Emergency Management  
Department of Emergency Management and Homeland  
Security  
360 Broad Street  
Hartford, Connecticut 06105  
(860) 566-3180  
(860) 247-0664 FAX  
[www.ct.gov/demhs/site/default.asp](http://www.ct.gov/demhs/site/default.asp)

Delaware Emergency Management Agency  
165 Brick Store Landing Road  
Smyrna, Delaware 19977  
(302) 659-3362  
(302) 659-6855 FAX  
[www.state.de.us/dema/index.htm](http://www.state.de.us/dema/index.htm)

District of Columbia Emergency Management Agency  
2000 14th Street, NW, 8th Floor  
Washington, D.C. 20009  
(202) 727-6161  
(202) 673-2290 FAX  
[dcema.dc.gov](http://dcema.dc.gov)

Florida Division of Emergency Management  
2555 Shumard Oak Blvd.  
Tallahassee, Florida 32399-2100  
(850) 413-9969  
(850) 488-1016 FAX  
[floridadisaster.org](http://floridadisaster.org)

Georgia Emergency Management Agency  
P.O. Box 18055  
Atlanta, Georgia 30316-0055  
(404) 635-7000  
(404) 635-7205 FAX  
[www.State.Ga.US/GEMA/](http://www.State.Ga.US/GEMA/)

Office of Civil Defense  
Government of Guam  
P.O. Box 2877  
Hagatna, Guam 96932  
(011)(671) 475-9600  
(011)(671) 477-3727 FAX  
<http://ns.gov.gu/>

Guam Homeland Security/Office of Civil Defense  
221B Chalan Palasyo  
Agana Heights, Guam 96910  
(671)475-9600  
(671)477-3727 FAX  
[www.guamhs.org](http://www.guamhs.org)

Hawaii State Civil Defense  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495  
(808) 733-4300  
(808) 733-4287 FAX  
[www.scd.hawaii.gov](http://www.scd.hawaii.gov)

Idaho Bureau of Disaster Services  
4040 Guard Street, Bldg. 600  
Boise, Idaho 83705-5004  
(208) 334-3460  
(208) 334-2322 FAX  
[www2.state.id.us/bds/](http://www2.state.id.us/bds/)

Illinois Emergency Management Agency  
2200 S. Dirksen Pkwy.  
Springfield, Illinois 62703  
(217) 782-2700  
(217) 524-7967 FAX  
[www.state.il.us/iema](http://www.state.il.us/iema)

Indiana Department of Homeland Security  
Indiana Government Center South  
302 West Washington Street, Room E208  
Indianapolis, Indiana 46204-2767  
(317) 232-3986  
(317) 232-3895 FAX  
[www.ai.org/sema/index.html](http://www.ai.org/sema/index.html)

Indiana State Emergency Management Agency  
302 West Washington Street  
Room E-208 A  
Indianapolis, Indiana 46204-2767  
(317) 232-3986  
(317) 232-3895 FAX

[www.ai.org/sema/index.html](http://www.ai.org/sema/index.html)

Iowa Homeland Security & Emergency Management  
Division  
Department of Public Defense  
Hoover Office Building  
Des Moines, Iowa 50319  
(515) 281-3231  
(515) 281-7539 FAX  
[Iowahomelandsecurity.org](http://Iowahomelandsecurity.org).

Kansas Division of Emergency Management  
2800 S.W. Topeka Boulevard  
Topeka, Kansas 66611-1287  
(785) 274-1401  
(785) 274-1426 FAX  
[www.ink.org/public/kdem/](http://www.ink.org/public/kdem/)

Kentucky Emergency Management  
EOC Building  
100 Minuteman Parkway Bldg. 100  
Frankfort, Kentucky 40601-6168  
(502) 607-1682  
(502) 607-1614 FAX  
[kyem.ky.gov/](http://kyem.ky.gov/)

Louisiana Office of Emergency Preparedness  
7667 Independence Blvd.  
Baton Rouge, Louisiana 70806  
(225) 925-7500  
(225) 925-7501 FAX  
[www.obsep.louisiana.gov](http://www.obsep.louisiana.gov)

Maine Emergency Management Agency  
45 Commerce Drive, Suite #2  
#72 State House Station  
Augusta, Maine 04333-0072  
(207) 624-4400  
(207) 287-3180 FAX  
[www.state.me.us/mema/memahome.htm](http://www.state.me.us/mema/memahome.htm)

Homeland Security and Emergency Management Division  
Michigan Dept. of State Police  
Michigan State Police  
4000 Collins Road  
Lansing, MI 48910  
(517) 333-5042  
(517) 333-4987 FAX  
[www.michigan.gov/emd](http://www.michigan.gov/emd)

CNMI Emergency Management Office  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
P.O. Box 10007  
Saipan, Mariana Islands 96950  
(670) 322-9529  
(670) 322-7743 FAX  
[www.cnmiemo.gov.mp](http://www.cnmiemo.gov.mp)

National Disaster Management Office  
Office of the Chief Secretary  
P.O. Box 15  
Majuro, Republic of the Marshall Islands 96960-0015  
(011)(692) 625-5181  
(011)(692) 625-6896 FAX

Maryland Emergency Management Agency  
Camp Fretterd Military Reservation  
5401 Rue Saint Lo Drive  
Reistertown, Maryland 21136  
(410) 517-3600  
(877) 636-2872 Toll-Free  
(410) 517-3610 FAX  
[www.mema.state.md.us/](http://www.mema.state.md.us/)

Massachusetts Emergency Management Agency  
400 Worcester Road  
Framingham, Massachusetts 01702-5399  
(508) 820-2000  
(508) 820-2030 FAX  
[www.state.ma.us/mema](http://www.state.ma.us/mema)

Michigan Division of Emergency Management  
4000 Collins Road  
P.O. Box 30636  
Lansing, Michigan 48909-8136  
(517) 333-5042  
(517) 333-4987 FAX  
[www.michigan.gov/msp/1,1607,7-123-1593\\_3507---,00.html](http://www.michigan.gov/msp/1,1607,7-123-1593_3507---,00.html)

National Disaster Control Officer  
Federated States of Micronesia  
P.O. Box PS-53  
Kolonia, Pohnpei - Micronesia 96941  
(011)(691) 320-8815  
(001)(691) 320-2785 FAX

Minnesota Homeland Security and Emergency  
Management Division  
Minnesota Dept. of Public Safety  
444 Cedar Street, Suite 223  
St. Paul, MN 55101-6223  
(651) 296-0466  
(651) 296-0459 FAX  
[www.hsem.state.mn.us](http://www.hsem.state.mn.us)

Mississippi Emergency Management Agency  
P.O. Box 4501 - Fondren Station  
Jackson, Mississippi 39296-4501  
(601) 352-9100  
(800) 442-6362 Toll Free  
(601) 352-8314 FAX  
[www.msema.org](http://www.msema.org)  
[www.msema.org/mitigate/mssaferoominit.htm](http://www.msema.org/mitigate/mssaferoominit.htm)

Missouri Emergency Management Agency  
P.O. Box 116  
2302 Militia Drive  
Jefferson City, Missouri 65102  
(573) 526-9100  
(573) 634-7966 FAX  
[sema.dps.mo.gov](http://sema.dps.mo.gov)

Montana Division of Disaster & Emergency Services  
1900 Williams Street  
Helena, Montana 59604-4789  
(406) 841-3911  
(406) 444-3965 FAX  
[dma.mt.gov/des/](http://dma.mt.gov/des/)

Nebraska Emergency Management Agency  
1300 Military Road  
Lincoln, Nebraska 68508-1090  
(402) 471-7410  
(402) 471-7433 FAX  
[www.nema.ne.gov](http://www.nema.ne.gov)

Nevada Division of Emergency Management  
2525 South Carson Street  
Carson City, Nevada 89711  
(775) 687-4240  
(775) 687-6788 FAX  
[dem.state.nv.us/](http://dem.state.nv.us/)

Governor's Office of Emergency Management  
State Office Park South  
107 Pleasant Street  
Concord, New Hampshire 03301  
(603) 271-2231  
(603) 225-7341 FAX  
[www.nhoem.state.nh.us/](http://www.nhoem.state.nh.us/)

New Jersey Office of Emergency Management  
Emergency Management Bureau  
P.O. Box 7068  
West Trenton, New Jersey 08628-0068  
(609) 538-6050 Monday-Friday  
(609) 882-2000 ext 6311 (24/7)  
(609) 538-0345 FAX  
[www.state.nj.us/oem/county/](http://www.state.nj.us/oem/county/)

New Mexico Department of Public Safety  
Office of Emergency Management  
P.O. Box 1628  
13 Bataan Boulevard  
Santa Fe, New Mexico 87505  
(505) 476-9600  
(505) 476-9635 Emergency  
(505) 476-9695 FAX  
[www.dps.nm.org/emergency/index.htm](http://www.dps.nm.org/emergency/index.htm)

Emergency Management Bureau  
Department of Public Safety  
P.O. Box 1628  
13 Bataan Boulevard  
Santa Fe, New Mexico 87505  
(505) 476-9606  
(505) 476-9650  
[www.dps.nm.org/emc.htm](http://www.dps.nm.org/emc.htm)

New York State Emergency Management Office  
1220 Washington Avenue  
Building 22, Suite 101  
Albany, New York 12226-2251  
(518) 292-2275  
(518) 457-9995 FAX  
[www.nysemo.state.ny.us/](http://www.nysemo.state.ny.us/)

North Carolina Division of Emergency Management  
4713 Mail Service Center  
Raleigh, NC 27699-4713  
(919) 733-3867  
(919) 733-5406 FAX  
[www.dem.dcc.state.nc.us/](http://www.dem.dcc.state.nc.us/)

North Dakota Department of Emergency Services  
P.O. Box 5511  
Bismarck, North Dakota 58506-5511  
(701) 328-8100  
(701) 328-8181 FAX  
[www.nd.gov/des](http://www.nd.gov/des)

Ohio Emergency Management Agency  
2855 West Dublin-Granville Road  
Columbus, Ohio 43235-2206  
(614) 889-7150  
(614) 889-7183 FAX  
[ema.ohio.gov/ema.asp](http://ema.ohio.gov/ema.asp)

Office of Civil Emergency Management  
Will Rogers Sequoia Tunnel 2401 N. Lincoln  
Oklahoma City, Oklahoma 73152  
(405) 521-2481  
(405) 521-4053 FAX  
[www.odcem.state.ok.us/](http://www.odcem.state.ok.us/)

Oregon Emergency Management  
Department of State Police  
PO Box 14370  
Salem, Oregon 97309-5062  
(503) 378-2911  
(503) 373-7833 FAX  
[egov.oregon.gov/OOHS/OEM](http://egov.oregon.gov/OOHS/OEM)

Palau NEMO Coordinator  
Office of the President  
P.O. Box 100  
Koror, Republic of Palau 96940  
(011)(680) 488-2422  
(011)(680) 488-3312

Pennsylvania Emergency Management Agency  
2605 Interstate Drive  
Harrisburg PA 17110-9463  
(717) 651-2001  
(717) 651-2040 FAX  
[www.pema.state.pa.us/](http://www.pema.state.pa.us/)

Puerto Rico Emergency Management Agency  
P.O. Box 966597  
San Juan, Puerto Rico 00906-6597  
(787) 724-0124  
(787) 725-4244 FAX

Rhode Island Emergency Management Agency  
645 New London Ave  
Cranston, Rhode Island 02920-3003  
(401) 946-9996  
(401) 944-1891 FAX  
[www.riema.ri.gov](http://www.riema.ri.gov)

South Carolina Emergency Management Division  
2779 Fish Hatchery Road  
West Columbia South Carolina 29172  
(803) 737-8500  
(803) 737-8570 FAX  
[www.scemd.org/](http://www.scemd.org/)

South Dakota Division of Emergency Management  
118 West Capitol  
Pierre, South Dakota 57501  
(605) 773-3231  
(605) 773-3580 FAX  
[www.state.sd.us/dps/sddem/home.htm](http://www.state.sd.us/dps/sddem/home.htm)

Tennessee Emergency Management Agency  
3041 Sidco Drive  
Nashville, Tennessee 37204-1502  
(615) 741-4332  
(615) 242-9635 FAX  
[www.tnema.org](http://www.tnema.org)

Texas Division of Emergency Management  
5805 N. Lamar  
Austin, Texas 78752  
(512) 424-2138  
(512) 424-2444 or 7160 FAX [www.txdps.state.tx.us/dem/](http://www.txdps.state.tx.us/dem/)

Utah Division of Emergency Services and Homeland Security  
1110 State Office Building  
P.O. Box 141710  
Salt Lake City, Utah 84114-1710  
(801) 538-3400  
(801) 538-3770 FAX  
[www.des.utah.gov](http://www.des.utah.gov)

Vermont Emergency Management Agency  
Department of Public Safety  
Waterbury State Complex  
103 South Main Street  
Waterbury, Vermont 05671-2101  
(802) 244-8721  
(802) 244-8655 FAX  
[www.dps.state.vt.us/](http://www.dps.state.vt.us/)

Virgin Islands Territorial Emergency Management - VITEMA  
2-C Contant, A-Q Building  
Virgin Islands 00820  
(340) 774-2244  
(340) 774-1491

Virginia Department of Emergency Management  
10501 Trade Court  
Richmond, VA 23236-3713  
(804) 897-6502  
(804) 897-6506  
[www.vdem.state.va.us](http://www.vdem.state.va.us)

State of Washington Emergency Management Division  
Building 20, M/S: TA-20  
Camp Murray, Washington 98430-5122  
(253) 512-7000  
(253) 512-7200 FAX  
[www.emd.wa.gov/](http://www.emd.wa.gov/)

West Virginia Office of Emergency Services  
Building 1, Room EB-80 1900 Kanawha Boulevard, East Charleston, West Virginia 25305-0360  
(304) 558-5380  
(304) 344-4538 FAX  
[www.wvdhsem.gov](http://www.wvdhsem.gov)

Wisconsin Emergency Management  
2400 Wright Street  
P.O. Box 7865  
Madison, Wisconsin 53707-7865  
(608) 242-3232  
(608) 242-3247 FAX  
[emergencymanagement.wi.gov/](http://emergencymanagement.wi.gov/)

Wyoming Office of Homeland Security  
122 W. 25th Street  
Cheyenne, Wyoming 82002  
(307) 777-4900  
(307) 635-6017 FAX

## **APPENDIX C**

### **DRAFT MEMORANDUM OF UNDERSTANDING**

#### **MUTUAL AID FOR RESOURCES NEEDED DURING LIFE RESCUE PHASE OF A DISASTER (FROM KING COUNTY, WASHINGTON)**

#### **1. BACKGROUND**

No one group has the experience, expertise, or equipment to ensure the safety and health of all workers at a major disaster site. With this in mind the parties agree that minimum training guidelines are needed for emergency service personnel, the construction industry and the skilled trades to work jointly and safely at disaster sites

All professions involved in on-scene disaster management must have established levels of measurable expertise. These skill levels will vary based upon the role of the individual. A training matrix has been established for skilled workers at the site. The basic disaster course recognized by the parties is the OSHA 7600 Disaster Site Worker course.

#### **2. PURPOSE & SCOPE**

This Memorandum of Understanding is to enhance the sharing of resources as well as timely, accurate, and consistent information sharing between the construction industry, skilled trades and emergency response organizations. This agreement also is designed to facilitate cooperation between the construction industry, skilled trades and emergency responders during a disaster, whether manmade or an act of nature. Catastrophic planning has been a major part of the fire service for over fifty years. The initial focus was for large-scale fires or natural disasters, but now includes acts of terrorism. The King County Region is currently attempting to improve a mutually supportive structure. These concerns are specifically amplified by:

- Intense population growth within the region;
- Lack of resources for terrorism in rural areas;
- Cost associated with poor planning for disaster events;
- Increased threats due to natural hazards (earthquakes, fire, flooding, winter storms, and longer forest fire season) throughout the region;
- Increased threats from technological sources and terrorism events that could create large Mass Casualty Incidents;
- Public demands for greater efficacy in emergency services; and
- Department of Homeland Security directives that require regional planning using the National Incident Management System (NIMS) and the National Response Plan (NRP) as part of the basis for agreement design.

#### **3. FIRE SERVICE RESPONSIBILITIES**

This MOU is designed to provide additional resources to the fire service of King County in Washington State by forming agreements with all parties to support each other when resources in a jurisdiction are, or are anticipated to be, depleted in the protection of public health and safety due to catastrophic events.

- The prompt, full and effective utilization of the resources within the region including such resources as may be available from the United States Government or other sources, are essential to the safety, health and welfare of the people. Trained personnel and equipment operators as well as supplies and equipment should be incorporated into mutual aid plans.



- The King County Region shall for the purpose of this MOU use the National Incident Management System (NIMS) for the mitigation of disasters. NIMS was created by the federal Department of Homeland Security in accordance with the Presidential Homeland Security Directive-5. It was to provide a consistent nationwide approach for federal, state, local, and tribal governments to work together more effectively and efficiently to prevent, prepare for, respond to, and recover from disasters, regardless of cause, size, or complexity.

#### **4. SKILLED TRADES RESPONSIBILITIES**

This MOU is designed to provide for the utilization of skilled trades personnel and specialized equipment through their employers in the King County Region of Washington State by agreements with all parties to support each other when resources in a jurisdiction are, or are anticipated to be, depleted in the protection of public health and safety due to catastrophic events, whether man made (terrorism) or naturally-occurring.

- No entity or its officers or employees rendering assistance when requested by the authority having jurisdiction pursuant to this MOU shall be liable on account of any act or omission in good faith on the part of such forces, while so engaged, or on account of the maintenance or use of any equipment or supplies in connection therewith.
- Washington State under the provisions of RCW 38.52.105 and 202c371s903 plus 51.16 RCW shall provide for the payment of compensation and death benefits to injured members in case such members sustain injuries or are killed while rendering aid pursuant to this MOU.
- The parties, when requested, may provide available resources but are not obligated to provide them.
- Employees dispatched to disaster site shall have the appropriate training required in the OSHA 7600 course.

#### **5. AGREEMENT**

It is mutually understood and agreed by and between the parties that:

- Each party agrees, upon request made to such party to furnish on an 'as available' basis manpower, equipment, and resources as may be necessary to assist in the life-rescue phase of a disaster incident of such a magnitude that is, or is likely to be, beyond the capacity of control of a single agency and requires the combined forces of additional agencies.
- Such mutual aid shall be within the geographical boundaries of the membership of the King County Fire Chief Association.
- Any aid extended under this agreement is done with the express understanding that the requesting authority having jurisdiction over the incident requiring assistance shall have a designated incident commander, safety officer, and medical assistance for the safety and health of those responding to help.
- It shall be the policy for the jurisdiction requesting assistance to release the assisting agencies from emergency life-rescue duties as soon as possible.
- This agreement shall not interfere with or replace any operational agreements between agencies signatory to this agreement and in the event of any inconsistency between the provisions of this agreement and any bilateral agreements between participating agencies, the latter shall prevail.
- The King County Fire Chiefs Association shall annually review the stipulations of this agreement with all involved and forward any deletions or additions to involved parties.
- All requests for mutual aid to disasters under this agreement shall be made through established and approved communication channels. Such requests shall be made by a responsible fire official of the agency requesting aid.
- Any party hereto may withdraw from this agreement by giving thirty (30) days prior notice in writing to the other signatory partner(s).
- Annual drills are to be scheduled engaging the parties in simulated disaster scenario

**6. FUNDING**

This MOU has no funding obligations or reimbursement provisions.

**7. EFFECTIVE DATE AND SIGNATURE**

This MOU shall be effective upon the signature of the Parties.

Signatures and dates

Between

\_\_\_\_\_ [insert name of Party A]

and

\_\_\_\_\_ [insert name of Party B]

and

\_\_\_\_\_ [insert name of Party C]

## **APPENDIX D**

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### **Links**

#### **State Government Resources**

Connecticut Commission on Fire Prevention and Control Web Site (Urban Search and Rescue link): [www.ct.gov/cfpc](http://www.ct.gov/cfpc)

Connecticut Department of Emergency Management/Homeland Security Web Site (Urban Search and Rescue Link): [www.ct.gov/demhs](http://www.ct.gov/demhs)

National Association of County and City Health Officials (NACCHO) <http://mapp.naccho.org/ofsapd/index.asp>

#### **Federal Government Resources**

##### ***Center for Disease Control (CDC)***

CDC anthrax publication <http://www.bt.cdc.gov/agent/anthrax/anthrax-hcp-factsheet.asp>

CDC FAQs on anthrax <http://www.bt.cdc.gov/agent/anthrax/faq/index.asp>

CDC, Bioterrorism Preparedness & Response <http://www.bt.cdc.gov/>

Chemical Agents: Facts About Personal Cleaning and Disposal of Contaminated Clothing. CDC  
<http://www.bt.cdc.gov/planning/personalcleaningfacts.asp>

U.S. Department of Health and Human Services, Centers for Disease and Prevention, Emergency Preparedness and Response <http://www.bt.cdc.gov/>

##### ***CDC-Agency for Toxic Substances and Disease Registry (ATSDR)***

Agency for Toxic Substances and Disease Registry, Public Health Service, US Department of Health and Human Service  
<http://www.atsdr.cdc.gov/>

Public Information. A Primer on Health Risk Communication Principles and Practices. ATSDR  
<http://www.atsdr.cdc.gov/HEC/primer.html>

##### ***CDC-National Institute for Occupational Safety and Health (NIOSH)***

“Guidance for Protecting Building Environments from Airborne Chemical, Biological, or Radiological Attacks”, NIOSH, May, 2002 <http://www.cdc.gov/niosh/bldvent/2002-139.html>

International Chemical Safety Cards <http://www.cdc.gov/niosh/ipcs/icstart.html>

NIOSH Emergency Response Resources <http://www.cdc.gov/niosh/topics/emres/>

NIOSH Pocket Guide <http://www.cdc.gov/niosh/npg/npg.html>

Protecting Emergency Responders (Volume 3): Safety Management in Disaster and Terrorism  
<http://www.cdc.gov/niosh/docs/2004-144/Response> National Institute for Occupational Safety and Health/ RAND. NIOSH Publication Number 2004-144 (May 2004)

Recommendations for Chemical Protective Clothing, NIOSH <http://www.cdc.gov/niosh/ncpc/ncpc2.html>

Traumatic Incident Stress, Information for Emergency Response Workers, NIOSH  
<http://www.cdc.gov/niosh/unp-trinstrs.html>

***Department of Health and Human Services (DHHS)***

National Disaster Medical System, Department of Health and Human Services (DHHS)

<http://ndms.dhhs.gov/index.html>

***Department of Homeland Security (DHS)***

Homeland Security Presidential Directive/HSPD-8, National Preparedness. December 2003

<http://www.whitehouse.gov/news/releases/2003/12/20031217-6.html>

National Incident Management System (NIMS). Department of Homeland Security. March 2004

[http://www.fema.gov/emergency/nims/nims\\_compliance.shtm](http://www.fema.gov/emergency/nims/nims_compliance.shtm)

U.S. Department of Homeland Security, Emergencies and Disasters

[http://www.dhs.gov/dhspublic/interapp/editorial/editorial\\_0566.xml](http://www.dhs.gov/dhspublic/interapp/editorial/editorial_0566.xml)

U.S. Department of Homeland Security, Office of Grants and Training

<http://www.ojp.usdoj.gov/odp/>

***Department of Energy (DOE)***

U.S. Department of Energy, Emergency Response

[http://www.energy.gov/engine/content.do?BT\\_CODE=NS\\_SS5](http://www.energy.gov/engine/content.do?BT_CODE=NS_SS5)

***Department of the Interior (DOI)***

U.S. Department of the Interior, Office of Environmental Policy Compliance <http://www.doi.gov/oepe/response/a00.htm>

Emergency Preparedness: Guidance and General Preparation. Dpt of Justice. Feb 2003.

<http://www.usdoj.gov/jmd/ps/dojepm.htm>

***Department of Transportation (DOT)***

Department of Transportation, Office of Hazardous Materials Safety <http://hazmat.dot.gov/>

Federal Transit Administration, Department of Transportation

<http://transit-safety.volpe.dot.gov/>

North American Emergency Response Guidebook (NAERG96)

<http://www.tricornet.com/nioshdbs/naerg96/guidebook.htm>

U.S. Department of Transportation, Hazardous Material Safety

[http://hazmat.dot.gov/training/state/hmep/hmep\\_hmep.htm](http://hazmat.dot.gov/training/state/hmep/hmep_hmep.htm)

***Environmental Protection Agency (EPA)***

Environmental Protection Agency, Chemical Emergency Preparedness and Prevention Office

<http://www.epa.gov/swercepp/>

<http://www.epa.gov/ceppo>

Environmental Protection Agency/Emergency Response Program

<http://www.epa.gov/superfund/programs/er/index.htm>

### ***Federal Emergency Management Agency (FEMA)***

Federal Emergency Management Agency (FEMA), Community Hazards Emergency Response Capability Assurance Process <http://www.fema.gov/preparedness/abrca.shtm>

State Offices of Emergency Management: <http://www.fema.gov/about/contact/statedr.shtm>

National Incident Management System: [http://www.fema.gov/pdf/emergency/nims/nims\\_doc\\_full.pdf](http://www.fema.gov/pdf/emergency/nims/nims_doc_full.pdf)

### ***National Response Team (NRT)***

Incident Command System, Forms and Guides <http://www.uscg.mil/hq/g-m/nmc/response/>

The National Response Team, HAZMAT & Chemical Spills <http://www.nrt.org>

### ***Occupational Safety and Health Administration (OSHA)***

Hazardous Waste Operations and Emergency Response, 29 CFR 1910.120. Occupational Safety and Health Administration (OSHA).

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9765](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9765)

OSHA Emergency Preparedness and Response Resources

<http://www.osha.gov/SLTC/emergencypreparedness/index.html>

OSHA's Best Practices for Hospital-Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances. January 2005

[http://www.osha.gov/dts/osta/bestpractices/firstreceivers\\_hospital.html](http://www.osha.gov/dts/osta/bestpractices/firstreceivers_hospital.html)

### ***Office for Domestic Preparedness (ODP)***

Metropolitan Medical Response System, DHHS, ODP, <https://www.mmrs.fema.gov/default.aspx>

## **Non-government and Research Organizations**

Chemical Emergencies, American Red Cross Family Information Brochure

<http://www.redcross.org/services/disaster/keepsafe/readychemical.html>

CHEMTREC, American Chemistry Council Emergency HAZMAT Information

<http://www.chemtrec.org/Chemtrec/Resources/>

Communications. Talking About Disaster: Guide for Standard Messages by the National Disaster Education Coalition, Washington, D.C., 1999

<http://www.redcross.org/disaster/safety/guide.html>

NFPA 1500- Fire Department Occupational Safety and Health Program. National Fire Protection Association. 2002 Edition

<http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1500>

NFPA 472- Professional Competence of Responders to Hazardous Materials Incidents. National Fire Protection Association. 2002 Edition

<http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1500>

The National Mass Fatalities Institute <http://www.nmfi.org/>