

# Department of Energy and National Institute of Environmental Health Sciences Nuclear Worker Training Program

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## FY 2004 Accomplishments and Highlights: (September 1, 2003 – August 31, 2004)



*The Superfund Amendments and Reauthorization Act of 1986 (SARA), Section 126(g), authorizes an assistance program for training and education of workers engaged in activities related to hazardous waste generation, removal, containment or emergency response and hazardous materials transportation and emergency response. The Congress assigned responsibility for administering this program to the National Institute of Environmental Health Sciences (NIEHS), an Institute of the National Institutes of Health (NIH) within the Public Health Service (PHS) of the US Department of Health and Human Services (DHHS).*

*The National Defense Authorization Act for fiscal years 1992 and 1993 (42 USC 7274(d)) authorized the Secretary of Energy in section 3131(a)(1)(A)-(B) to make awards: "to provide training and education to persons who are or may be engaged in hazardous substance response or emergency at Department of Energy (DOE) nuclear weapons facilities; and to develop response curricula for such training and education." The Secretary was further authorized in Section 3131(a)(2)(A)-(B) to make the training awards to non-profit organizations demonstrating capabilities in: "implementing and conducting effective training and education programs relating to the general health and safety of workers; and identifying, and involving in training, groups of workers whose duties include hazardous substance response or emergency response."*

*To implement this, DOE entered into an agreement with NIEHS to award and administer the grants and to adapt its existing program to meet the needs of the DOE nuclear weapons complex.*

*Protecting worker health and safety through the delivery of safety and health training is a priority of the Secretary of Energy and is a primary goal of the Office of Environmental Management (EM). As the DOE's mission has shifted from weapons production to environmental restoration, the site worker is exposed to new operations and hazards while conducting restoration activities, many of which are associated with potential exposure to hazardous substances and wastes.*

*To provide protection to workers' health and safety, all workers at DOE sites engaged or potentially engaged in environmental restoration activities, including hazardous substance response or emergency response, are required by CERCLA and respective DOE Orders to meet the requirements of the Occupational Safety and Health Administration's (OSHA) regulations 20 CFR 1910.120 and the EPA Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements (40 CFR 300.150).*

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## 1.0 Introduction: Changing Missions; Changing Workforce

Crane operators, carpenters, welders, laborers, boilermakers, chemical operators, construction workers, electricians, engineers, environmental technicians, environmental engineers, facility managers, health physics technicians, industrial hygienists, insulators, laboratory technicians, machinists, painters, pipe fitters, planners/estimators, project managers, quality assurance engineers, radiation safety officers, scientists, subcontract technical representatives, truck drivers, and waste transportation experts and managers: these are the people who make up the Department of Energy (DOE) workforce being trained under the DOE/National Institute of Environmental Health Sciences (NIEHS) Nuclear Worker Training Program. Because of their commitment to a safe and healthy workplace, and the training that they have received, the DOE complex has one of the best safety and health records of any major industrial site. The development of principles of Integrated Safety Management (ISM) and their incorporation into every training curricula has provided the foundation for this success. The NIEHS Worker Education and Training Program through its eight primary program awardees and their sub-awardees is proud to have assisted in achieving this excellent record, but more, of course, remains to be accomplished.

Eleven years ago, the DOE/NIEHS Nuclear Worker Training Program began. Since then major changes have occurred. As stated by the International Union of Operating Engineers, a DOE/NIEHS awardee: "Downsizing, changing missions and management systems, and increased global volatility, has created a workplace that demands workers not only be knowledgeable of the hazards associated with their jobs and facilities, but be aware of safety and health issues associated with potential terrorist activities. Today's DOE employee must possess a wider range and in-depth knowledge and a more acute level of awareness than ever before. Training programs must be both all encompassing and ever changing to meet the workers' needs."

In the words of DOE Under Secretary Clay Sell, "...all DOE personnel share the common goal of safe operations. Safety includes protection of the environment, protection of worker safety and health, nuclear, and facility safety."

In addition, the DOE complex continues to see a changing workforce with a growing percentage of Hispanic workers. DOE sites are complicated, featuring a combination of nuclear, industrial, demolition, and construction activities; therefore, safety and health training was developed that was both site specific and trade-specific. It is now clear that training must also specifically respond to the language and literacy of needs of this new workforce.

The following report shows how the DOE/NIEHS program is responding to these new challenges. Brief updates are provided for the program as a whole and for each of the eight primary awardees and their consortium of sub-awardees. The report discusses who the awardees are, how many workers they have trained, who benefits from this training, and some anecdotal information from awardee reports that provide specific insights into the nature of this important national training program.

## **2.0 2003- 2004 Program Highlights: Progress to Date**

In completing the eleventh year of the NIEHS/DOE Worker Education and Training Program (September 1, 1993 to August 31, 2004), the NIEHS successfully supported eight primary awardees. Across the DOE complex, the NIEHS awardees trained more than 199,000 workers and presented over 14,000 classroom and hands-on training courses, accounting for 2.8 million contact hours of actual training at an average cost of \$34.14 per contact hour (see Appendix 1).

Through an Interagency Agreement, NIEHS received \$8.5 million from the FY 2003 DOE appropriations, which provided funding to NIEHS awardees during the past year (September 1, 2003 - August 31, 2004). Of the FY 2003 funds, \$8.0 million was allocated to continue support of the NIEHS/DOE Worker Training Program to provide safety and health training across much of the DOE complex (see Appendix 2). Between the budget period of September 1, 2003 to August 31, 2004, the eight primary worker training awardees and more than thirty sub-awardees delivered 2,367 courses, reaching 29,240 workers, which account for 374,957 contact hours of health and safety training at an average cost of \$21.39 per contact hour (see Appendixes 1 and 3). This training ranged from 4-hour refresher programs to more complex train-the-trainer courses lasting up to 120 hours. Forty-one percent of the training focused on delivering basic HAZWOPER cleanup worker training. This comprises 10,486 workers who received 80-hour training, basic 40-hour training, or 4-8 hour refresher courses (see Appendix 4). While the DOE/NIEHS awardees provided training at more than 24 DOE sites during the past year, over half of the training provided was at two of the largest DOE sites, Hanford and Oak Ridge. Between the two sites, 1,405 (59%) courses were delivered, reaching 18,659 (64%) workers, which account for 188,930 (51%) contact hours of training (see Appendix 5).

## **3.0 Continuation of the Peer-Reviewed DOE Nuclear Worker Training Awards for PY2004**

After completion of the fourth program year of the projected five year long cooperative agreements, eight organizations submitted progress reports, training data, budget requests, and training plans on July 1, 2003. Budget adjustments in the proposed funding plan were based on the training needs of high-risk populations, national geographic coverage in training availability, and the published program priorities for training support. Awards were then made on September 1, 2004 for each of the programs supported with DOE Environmental Management resources.

These awards ran through August 31, 2005.

## **4.0 Highlights from Awardee Progress Reports**

*The following section examines each of the eight DOE/NIEHS awardees and their sub-awardees. It considers who are these consortia? Who benefits from their services? How many benefit? And are there specific examples or anecdotes from their programs that provide useful insights into the nature of health and safety training in this country?*

#### 4.1 The New Jersey/New York Consortium (NJ/NY Consortium)

**Who they are:** The University of Medicine and Dentistry of New Jersey - School of Public Health (UMDNJ); The University at Buffalo.

**Who benefits:** The University of Medicine and Dentistry of New Jersey - School of Public Health (UMDNJ) provided training, as requested, to Brookhaven National Laboratory (BNL) and Princeton Plasma Physics Laboratory (PPPL) employees. At Brookhaven National Laboratory, they have trained personnel from the industrial hygiene, environmental remediation, reactor, waste management and other departments. The University at Buffalo provided training to employees at West Valley Nuclear Services. Each institution provides flexibility in their training programs to accommodate additional training needs that arise each year.

**How many:** The two members of the NJ/NY Consortium during this reporting period, provided 72 courses for a total of 450 workers trained, corresponding to 6,890 contact hours of training .

In the period of September 1, 2003 to August 31, 2004, UMDNJ trained 368 workers for 5,634 contact hours at BNL and PPPL. UMDNJ provided the following courses at BNL: one 40-hour course for a total of six workers; eleven 8-hour Annual Refresher courses for a total of 152 workers; and two Operations and Maintenance Refresher for a total of 16 workers. Two sessions of the 30-hour OSHA Construction and two 30-Hour General Industry courses were also offered at Brookhaven National Lab, a total of 68 workers attended these four days of training.

University at Buffalo, Toxicology Research Center is responsible for training workers at West Valley Nuclear Services. They have trained 73 workers for 1,184 contact hours. Approximately half of the courses were conducted at the West Valley Demonstration Project (WVDP) facility. The other courses were provided at the University at Buffalo training facility.

**OSHA Authorization Upgrades the Program:** UMDNJ became an Authorized OSHA Training Institute (OTI) Outreach Training Provider in January 2003. Through this program, UMDNJ is authorized to offer 25 courses developed by OSHA in construction, general industry, and industrial hygiene. UMDNJ offered a number of these courses on-site at BNL; indeed, the OSHA authorized program has become a critical part of the health and safety training at BNL. The OSHA 301 Excavation, Trenching, and Soil Mechanics course was attended by the plant engineers and crew responsible for radiological and hazardous waste contaminated soil excavation and remediation. The site is also undergoing numerous demolition projects; many of the buildings at the site were constructed prior to World War II and now being demolished for new construction, the OSHA 510 30-hr Construction was attended by the plant engineers who oversee these projects.

## 4.2 Paper, Allied-Industrial, Chemical and Energy Workers (PACE)

**Who they are:** The Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE) represents more than 320,000 workers who manufacture paper, refine oil, and make chemicals, nuclear materials, pharmaceuticals, automobile parts, appliances, small engines, and many other products.

**Who benefits:** PACE continues to provide training as requested at six DOE sites where it has members: 1) Idaho National Environmental & Engineering Laboratories, Idaho Falls, Idaho; 2) Mound Facility, Miamisburg, Ohio; 3) K-25 Facility, Oak Ridge, Tennessee; 4) Paducah Uranium Enrichment Facility, Paducah, Kentucky; 5) Portsmouth Uranium Enrichment Facility, Piketon, Ohio; 6) Hanford Site, Richland, Washington.

**How many:** This represents instruction to 2,678 students, for 30,456 contact hours in 170 classes.

### **Quality Training Through Integrated Safety Management at Integrated Training Sites:**

PACE Integrated Training Sites are model programs that stress site specific training utilizing small group activity training methods that emphasize the DOE Integrated Safety Management principles.

For example, the DOE site in Portsmouth, OH is considered a PACE Integrated Training Site . PACE conducts the Hazardous Waste Operations training at the site as well as the training associated with the PACE Triangle of Prevention program. This training includes 8hr program training, 16 hr Incident investigation training and Lessons Learned training. In addition to the Portsmouth site, PACE's other five DOE sites are targeted to be engaged in training related to the Triangle of Prevention (TOP) Program, the Systems of Safety Initiative (SOSI) and PACE's Weapons of Mass Destruction training program.



### **4.3 Laborers/Associated General Contractors Education and Training Fund (L-AGC)**

**Who they are:** This consortium is headed by the Laborers/Associated General Contractors Education and Training Fund (L-AGC) and includes the International Brotherhood of Teamsters.

**Who benefits:** The DOE worker training courses were conducted by seven regional and two mobile training centers. They include: Augusta, GA (for Savannah River), Brighton, CO (for Rocky Flats), Edgewood, NM (for Los Alamos), Idaho Falls, ID (for Idaho National Environmental and Engineering Laboratory), Las Vegas, NV (for Nevada Test Site), Oak Ridge, TN (for Oak Ridge), Pasco, WA (for Hanford), Iowa Mobile Unit (for assistance at Oak Ridge, Nevada Test Site, Rocky Flats, and Los Alamos), West Virginia Mobile Unit (for DOE Headquarters).

**How many:** During the time period September 1, 2003 to August 31, 2004, the Laborers-AGC Education and Training Fund (Laborers-AGC) and the International Brotherhood of Teamsters (IBT) combined programs conducted 806 courses under the DOE Environmental Worker Education and Training Program (EWTEP). This accounts for 172,761 contact hours of training.

**Training Is Critical for Workers and for our Country:** At the request of a contractor at the Los Alamos Laboratory, the New Mexico Laborers' Training Fund was able to conduct a number of OSHA 30-hour safety courses for workers who faced the possibility of losing their jobs during the site stand down. The contractor wanted to use the shut down time to train their employees and avoid having to lay them off. The New Mexico Laborers' Training Fund was able to provide almost 3 weeks of training to keep workers employed and develop their health and safety knowledge.

At the same time, the West Virginia Mobile Unit continued to provide training for DOE Headquarters personnel and for law enforcement personnel from several federal and local agencies charged with providing federal and local protection services. During the winter of 2004, ricin was discovered in the Washington DC area. The U.S. Capitol Police Special Alert Team and DC Metro Police Alert Team who were first to respond after ricin was discovered in Senator Frist's office, received their hazardous response training from the Laborers-AGC. The West Virginia Mobile Unit trained many of the law enforcement agencies responding to the incident.

*"Without the Laborers-AGC, we would not have a foundation from which to go by,"* said Sergeant Frank Edwards, DC Metro Police, *"the trainings provided by the Laborers-AGC have made our nation's capital safer."*

#### 4.4 International Union of Operating Engineers (IUOE)

**Who they are:** The International Union of Operating Engineers (IUOE) represents 360,000 workers including operating engineers (heavy equipment operators, mechanics, and surveyors), stationary engineers who maintain buildings and industrial complexes, nurses and other health workers, and a variety of public employees.

**Who benefits:** The diverse student roster for the IUOE DOE Training Program includes employees of Y-12 National Security Complex, ORNL, East Tennessee Technology Park (ETTP) all of the Oak Ridge Tennessee facility; INEEL, Battelle, Bechtel National and Fluor-Hanford. Managing Contractors for the sites listed above are BWXT (Y-12), UT-Battelle (ORNL), Bechtel Jacobs (ETTP), Bechtel BWXT Idaho (INEEL), Battelle, Bechtel National and Fluor-Hanford (Hanford). In addition, the IUOE DOE Program trains workers from hundreds of subcontractors throughout the DOE complex including British Nuclear Fuels Limited Inc. (BNFL) – the largest decontamination and decommissioning (D&D) contractor in the world.

The IUOE DOE Training Program is available to all personnel affiliated with a DOE contract. This creates a diverse class makeup consisting of individuals with extensive talents, experience, and responsibilities, which greatly enhance the educational environment. In FY 2004, the training classes consisted of boilermakers, chemical operators, construction workers, electricians, engineers, environmental technicians, environmental engineers, facility managers, health physics technicians, industrial hygienists, insulators, laboratory technicians, laborers, carpenters, machinists, painters, pipe fitters, planners/estimators, project managers, quality assurance engineers, radiation safety officers, scientists, subcontract technical representatives, truck drivers, and waste transportation experts and managers.

**How many:** From September 1, 2003, through August 31, 2004, the International Union of Operating Engineers (IUOE) trained 2,126 trainees under the DOE Training Program at various DOE locations. There were 245 workers trained in the 40-Hour Basic Superfund Site Worker courses, and 1,643 in 8-Hour Site Worker Refreshers.

**Preparing students through homeland security awareness:** The world is becoming increasingly volatile. Coupled with the work that takes place at DOE facilities, it is imperative that employees recognize terror threat awareness as a fundamental aspect of their job responsibilities. Heightened, effective Homeland Security (HS) has become an individual responsibility and must be incorporated into the safety and health training programs. The IUOE DOE training program confronts this challenge by conducting subject research, instructor awareness sessions, interaction with state and federal HS directors, and inclusion of HS information in 8-Hour and 40-Hour HAZWOPER units.

In FY 2004, IUOE Training Program personnel attended and conducted HS seminars, researched, developed, and revised new HS training modules, and interacted with State and Federal HS Officials and experts. Weapons of Mass Destruction (WMD) and Chemical and Biological Weapons module instruction are now commonplace in IUOE taught HAZWOPER units. Emergency Response units will be further bolstered in the coming months to address not only site specific issues but include general terror threat concerns, response to these concerns and how they can be recognized.

#### 4.5 International Chemical Workers Union (ICWU)

**Who they are:** This consortium is based at the Center for Worker Health & Safety Education which is operated by the International Chemical Workers Union (ICWU) in cooperation with the United Steelworkers of America (USWA), the International Association of Machinists and Aerospace Workers (IAM), the American Flint Glass Workers (AFG), the Rubber Plastics Industry Conference of the USWA (R/PIC), the Aluminum, Brick and Glass Workers Division of the USWA (ABGWD), the Coalition of Black Trade Unionists (CBTU), the United Food and Commercial Workers Union (UFCW) and the American Federation of Teachers (AFT). The consortium also includes the University of Cincinnati and the Greater Cincinnati Occupational Health Center.

**Who benefits:** Workers at Hanford, Oak Ridge, Rocky Flats, and Kansas City DOE sites.

**How many:** The total number of persons trained at all DOE sites through August 31, 2004 is 2,639 persons at 209 sessions (24,276 person hours)., an increase of approximately 27% over last year.

**Shop Floor Trainers Key to Success:** The key to this training has been an experienced and seasoned group of thirty nine (39) DOE trainers from the shop floor who have completed the ICWU Chemical Emergency Response program followed by the train-the-trainer program, with most having completed a further apprentice type program under the guidance of the Director of Trainer Development. The Center improved these trainer sessions during the year by designing all advanced trainer courses to meet the specific needs of each DOE site as well as each trainer. ICWU trainers efficiently wrote new curriculum, developed class modules and produced a new workbook for the refresher classes.

For example, in the newly developed eight hour refresher for the Hanford plant site, special emphasis was placed on the complex's changing mission. With several areas of the Hanford reservation entering into the Decontamination and Decommissioning phase, the importance of engineering controls and working safely during this transition were stressed. A module detailing the Occupational Safety and Health Administrations CFR 1910.120 HAZWOPER standard was developed to inform the trainees of the requirements under the Hazwoper standard and to explain the new monitoring equipment and engineering controls in use on the Hanford reservation.

In addition, considering the enormous amounts of chemicals stored on the plant site, a module was developed on chemical incompatibility. A real life case study was used in the toxicology module to emphasize the long term chronic health effects associated with some chemical exposures. The new 8 hour refresher ends with a module addressing WMD (Weapons of Mass Destruction).

#### 4.6 International Association of Firefighters (IAFF)

**Who they are:** The International Association of Fire Fighters (IAFF) has more than 2,700 affiliates, representing 263,000 fire fighters and paramedics in more than 3,500 communities in the U.S. and Canada.

**Who benefits:** The IAFF continues to address the hazardous materials training needs of emergency responders in those geographical areas proximate to sites within the DOE Nuclear Weapons Complex. This includes Hanford, Savannah River, Oak Ridge, Rocky Flats, Lawrence Livermore, Nevada Test Site, Argonne National Labs, West Valley, Yucca Mountain and Sandia National Laboratories.

**How many:** IAFF trained 920 students on seven hazardous materials emergency response levels: First Responder Operations, Confined Space Operations, Confined Space Rescue, Clandestine Drug Labs, Incident Management, Technician, and Instructor Development.

**Types of Training and Keeping It Up-To-Date:** IAFF hazardous materials training can be divided into two categories: (1) Direct delivery to specific fire departments (direct training) and (2) Instructor training (indirect training) for fire service trainers from many different fire departments. Direct training provides expertise when skilled instructors are not available at the local level. For example, an untrained fire fighter, upon completing a series of training programs, could effectively respond to radiation incidents using selected offensive, as well as defensive, tactics. Instructor training enables IAFF/DOE trainees to educate other response personnel at DOE sites in defensive emergency response operations. Regional instructor training educates and equips instructor candidates, and is more costly to deliver than direct training.

The IAFF conducts regular refresher training for its instructor staff. Annual refresher training programs, called Instructor Development Conferences (IDC), significantly improve the quality of field training events. They also remain their primary medium to directly convey course updates, administrative changes and new training technologies.

IAFF works constantly to keep it's curricula up-to-date. An example of this is their First Responder Operations (FRO) Course. This course is the cornerstone of their training mission. Not only does the IAFF conduct direct deliveries of the FRO, they also use it in numerous instructor training events. During the past year, IAFF HazMat staff and instructors worked diligently to revise the program. Using a newly-developed web portal, IAFF was able to survey all HazMat instructors for suggestions as to how to improve the program. Based on this instructor feedback, they assembled a focus group which incorporated the suggested changes into the FRO. This version was released at the 2004 Instructors Development Conference (IDC).

#### 4.7 Center to Protect Workers' Rights (CPWR)

**Who they are:** The Center to Protect Workers' Rights (CPWR) and its Construction Consortium for Hazardous Waste Worker Training includes the following international-national construction unions: Insulators & Asbestos Workers, Iron Workers, Boilermakers, Painters, Bricklayers, Plasterers & Cement Masons, Carpenters, Plumbers & Pipe Fitters, Electrical Workers, Sheet Metal Workers. These unions represent over 2,000,000 workers.

**Who benefits:** Workers at Hanford, Oak Ridge, Kansas City, Princeton, Stanford, Nevada, DOE headquarters, Paducah, Fernald, Argonne East, and Savannah River.

**How many:** CPWR's consortium conducted 396 courses and trained 5,556 workers, technicians and support staff in 63,158 training contact hours.

**"Bridging" a Training Gap at Hanford:** During the year, CPWR implemented the 24-hour "Bridge" Hazardous Waste Worker course. The Bridge course was developed to provide a training opportunity for those individuals who had already taken a 24-hour Hazardous Waste Worker course without the hands-on portion, and who subsequently decided they needed the full 40-hr HazWoper training. The Bridge training was designed to provide workers with the hands-on simulation training not received originally in a three-day course delivered concurrently with a full 40-hr Hazardous Waste Worker course. While everyone in the combined course participates in approximately 2 days of simulated hands-on training, those in the "Bridge" training are required to participate in 1 additional day of classroom instruction to refresh them on the content of their original course, and to provide a preliminary day of training to prepare them for the hands-on portion. The 24-hour "Bridge" training has been very positively received by their training partners, in particular by those training at the HAMMER training center in Hanford, Washington.

#### 4.8 Hazardous Materials Training and Research Institute (HMTRI)

**Who they are:** This consortium is lead by Kirkwood Community College's Hazardous Materials Training and Research Institute (HMTRI) and includes the Community and College Consortium for Health and Safety Training (CCCHST). There are 93 colleges and universities, five community-based organizations, eight governmental units, 12 independent training providers and one union in CCCHST, representing 32 states and one territory.

**Who benefits:** Workers, technicians, and supervisors at Savannah River, Pantex, Oak Ridge, Paducah, Portsmouth, and Idaho National Engineering Laboratory.

**How many:** CCCHST institutions delivered 589 courses to 5,926 students for a total 27,379 contact hours of instruction

**Excellence in Blended Learning:** HMTRI provides hazardous materials curriculum in an open-entry, open-exit format that is electronically delivered to students by CCCHST-DOE colleges. Member colleges complement this electronic curriculum with required hands-on training and local instructor support for students. At Aiken Technical College, in South Carolina, the College's Safety Resource Center offers regularly scheduled environmental health and safety training programs. Many DOE-Savannah River Site subcontractors and service suppliers contract with the training center for services. The Safety Resource Center, has an extensive array of training equipment for haz-mat, safety, environmental remediation and industrial fire. The center is staffed by three full time instructors and over 15 part-time trainers who have over a total 300 years of work experience.

Liz Pulver is the lead EHS instructor at Aiken. Ms. Pulver began her career in 1976 as the training coordinator for Cumberland County (Maine) Emergency Management. She attended the National Emergency Management Institute and the State of Maine Fire Academy, the National Fire Academy. and was invited to sit on the curriculum committee to develop a hazardous materials training course for National Emergency Management Institute. A member of the US Naval Reserves, she taught general safety, leadership, hazardous materials and Naval doctrine and was also employed at Portsmouth Naval Shipyard, a nuclear submarine overhaul and repair facility. A member and spill investigator for the Region One Regional Response Team, she was on the training team that developed and implemented the bi-annual emergency response training between the United States and Canada. In 1996, Ms. Pulver joined the Aiken staff and in 2002, she received the SCAHCE outstanding continuing education non-credit instructor award.

## 5.0 NIEHS National Clearinghouse for Worker Safety and Health Training Update

The National Clearinghouse for Worker Safety and Health Training provides strong technical support to the NIEHS awardees that conduct hazardous waste worker training around the DOE weapons complex. The Clearinghouse has regularly featured articles in its electronic newsletter that is distributed weekly to 700 people about chemical and radiological issues around the complex, focusing on particularly critical challenges like the Hanford tank farms. The Clearinghouse's website, [www.wetp.org](http://www.wetp.org), has a library that houses numerous reports on environmental, health and safety topics specifically related to DOE, including documents of limited distribution like the February 2004 Final Report on Vapor Concerns produced by the PACE union. DOE, with technical support from WETP, produced innovative communication tools called Technology Safety Data Sheets for workers. The Clearinghouse website contains numerous TSDS example and also houses a database of ES&H curricula developed for DOE workers by NIEHS awardees with DOE funds that are available to professional trainers. The following screen from the Clearinghouse website lists key subjects that the 234 different curricula cover.



Part of the Clearinghouse support includes attending and presenting at DOE technical meetings. In September 2004 Dr. Bruce Lippy, the Director of the Clearinghouse, attended a meeting of the NIEHS DOE trainers as well as the HAMMER medical surveillance and steering committee meetings in Richland, Washington.

Dr. Lippy served on the advisory board for the Department of Energy's Special Interest Group for Industrial Hygiene and spoke to that organization in October of 2004 about the NIEHS

mold training guidance. He also worked with members of the DOE Topical committee on integrating safety into design to determine if there was interest in reconstituting the group. He also submitted a suggested panel to DOE for the Chemical Management workshop.

On March 8<sup>th</sup>, 2005 Joseph "Chip" Hughes, Jr. MPH, Director of the Worker Education and Training Branch, National Institute of Environmental Health Sciences and Bruce Lippy, Ph.D., CIH, CSP, Director, National Clearinghouse for Worker Safety and Health Training presented at the joint EFCOG/DOE Chemical Management Workshop. The topic of their presentation was "Reducing Vulnerability to Chemical Facility Terrorism by Training Workers: Effective Models from the NIEHS Hazardous Waste Worker Community." Hughes noted that over the last 17 years his program had trained over a million workers to safely handle hazardous materials and respond to emergencies in workplaces as diverse as hospitals and nuclear weapons plants. He pointed out that a major thrust has been to empower workers at chemical plants through training that meets the requirements of the OSHA 1910.120. The PACE union has used NIEHS funds to develop an innovative Systems of Safety (SOS) program that employs peer trainers to teach other

workers to evaluate accidents and near misses for root causes and to participate on management-labor teams performing system safety analyses, such as Failure Modes and Effects Analysis.

Dr. Lippy noted that the International Chemical Workers Union Center for Worker Health and Safety Education has offered a chemical emergency response course for workers who respond to industrial leaks and spills. Their four-day course on chemical emergency response focuses on prevention through preplanning and good standard operating procedures. Whenever possible, they attempt to work with management to include a major simulation of a plant emergency to help the community better prepare, as they did at Cabot Chemical.

Dr. Lippy noted that the International Association of Fire Fighters also trains their members about the unique hazards of chemical plant fires including those intentionally set by foreign terrorists or homegrown arsonists. This training, too, was made possible by funding from DOE.





## 6.0 Training Partnerships for Prevention, Protection and Preparedness

The Worker Education and Training Branch of the National Institute of Environmental Health Sciences (NIEHS) conducted a major national technical workshop in the spring of 2004 in Washington, D.C at the Loews L'Enfant Plaza. **The conference was titled “Training Partnerships for Prevention, Protection and Preparedness” and was held on April 22nd and 23rd.**

NIEHS, in conjunction with the Office of Domestic Preparedness within the Department of Homeland Security (ODP/DHS) and the Occupational Safety and Health Administration (OSHA), sponsored the workshop to focus on building stronger relationships for the training of disaster responder populations most at risk of illness and injury, particularly fire fighters, health care workers, and the construction trades needed at disaster responses. NIEHS is one of 27 Institutes and Centers of the National Institutes of Health (NIH), which is a component of the Department of Health and Human Services (DHHS). The Director of the NIEHS is Dr. Kenneth Olden. NIEHS has been a leading force for training workers to safely respond to terrorist actions. A detailed workshop report is posted on the NIEHS National Clearinghouse website at <http://www.wetp.org/wetp/1/04meeting/index.html>.



The goal of this workshop was to strengthen the partnerships that NIEHS has created with other federal agencies to better protect workers and coordinate resources. Representatives from DHS, OSHA, EPA, and the National Response Team spoke at several plenary sessions. Each agency reviewed its respective role in homeland security and its relation to response training and preparedness. In addition, to provide an opportunity for interaction between speakers and participants, several breakout sessions focused on the lessons learned by current awardee partners and their potential contributions to WETP’s emergency activation plan. Finally, keynote speakers highlighted policy, training, and preparedness issues for the chemical industry and for public health in response to terrorism.

The Technical Workshop began on Thursday with a Department of Homeland Security Plenary. The DHS plenary addressed two issues: 1) how the new National Response Plan, National Incident Management System and Incident Command System will deal with response training; and 2) how the Office for Domestic Preparedness views the relationship between homeland security and HAZMAT training and preparedness.

Speakers pointed out that response training is being addressed by incorporating FEMA into the new DHS. The Agency is tasked with preventing, responding to, and planning for disasters. In addition, the DHS developed a National Response Plan (NRP) and a National Incident Management System (NIMS). The need for a standard approach and common terminology across all disaster incidents, regardless of size and location was emphasized. The NRP is the

Federal Government's "recipe book" for emergency planning and the NIMS is the structure of the command and control system. The DHS speakers addressed the importance of a credentialing system for responders, but noted that the strategy had not been worked out yet.

In addition, the Office for State and Local Government and Preparedness (OSLG), formerly the ODP, has been expanded and transitioned to the DHS from the Department of Justice. Its Training and Technical Assistance Division (TTAD) funds comprehensive training to prevent, deter, respond to and recover from threats and incidences of terrorism. Individual states and localities have also coordinated emergency services and skilled trades so they can work together in case of an event. Seattle's First Response and the Skilled Trade (FIRST) program is one of the most active groups, as A.D. Vickery and Charles Soros, the group leaders, explained. FIRST has established a strong working relationship among all the key groups that will be needed in Seattle if there is a terrorist action or a natural disaster. Their focus has been on the first 24-36 hours of an event.



Keynote speaker, Dr. James Carafano, a Senior Fellow at the Heritage Foundation, then addressed some of the challenges of establishing national preparedness. One challenge is that neither DHS nor OSLG have the capacity to directly conduct training, so they must rely on other organizations, through contracts and agreements. Consequently, the integration of training is a problem. In addition, there are no systems in place to identify the needs of individual communities or the effectiveness of programs. Carafano feared that federal money may be going towards building a national system that is not meeting the needs of communities.

Another panel addressed the successful development of the Disaster Site Worker course, a joint effort of OSHA and NIEHS and its grantees. Materials developed by NIEHS awardees were provided to OSHA, along with expertise from master instructors, to create a 16-hour course for the construction trades that addresses the key problems discovered at Ground Zero: misunderstandings of the Incident Command System and insufficient hands-on training with respirators. The joint effort also created a 24-hour Train-the-Trainer program. OSHA and NIEHS officials are hopeful that the cards issued by the OSHA Training Institute under these courses will be recognized by DHS as part of the national credentialing program. OSHA has aggressively begun training teams of specialists in every region across the country to deal with the safety and health aspects of responses to terrorist actions. OSHA, NIEHS, and its grantees pledged to continue to work together protecting those who protect our homeland security.

Erich "Pete" Stafford, the Director of the Center to Protect Worker's Rights (CPWR), noted that his organization, which is the safety and health research arm of the Building and Construction Trades Department of the AFL-CIO, has developed an interactive DVD training program for skilled support personnel. As an OSHA Education Center, CPWR and its 4000 instructors in affiliated building trade unions will train thousands of their members and prepare them to support first responders; however, not enough skilled support personnel are currently receiving training.

The need for these training programs was highlighted in the EPA Keynote Speech given by Marianne Horinko, who at the time of her presentation was the Assistant Administrator for the EPA Office of Solid Waste and Emergency Response. She explained how, given the nature of terrorism, it is nearly impossible to fully prepare for the repercussions of an attack. The best ways to deal with these uncertainties is to prepare for many possible scenarios and to promote coordination among agencies.



Breakout sessions concluded Thursday's activities. The common theme that bridged these breakout sessions was "partnerships."

Breakout session 1 focused on Federal and Tribal Partnerships and was highlighted by the success of the partnership between University of Alabama and the Poarch Band of Creek Indians. They have created a mutual aid agreement between their responders. John Kovach from the Operating Engineers National HAZMAT Program discussed the partnerships the program has been pursuing with other organizations concerned with preventing or mitigating biological or chemical attacks released inside buildings.

Speakers from breakout session 2 shared insights into current training at hospitals and other first receiver/emergency response organizations, focusing on WMD modules about working with contaminated patients and strengthening the ER capabilities of fire and other emergency response entities. In particular, the breakout examined the characteristics of four successful partnerships around hospital, WMD and emergency response training. These partnerships include:

1. Brookdale University Hospital and the Service Employees International Union, Local 1199 NY;
2. Lutheran Hospital (NY), the Federation of Nurses/United Federation of Teachers and the International Chemical Workers Union;
3. The Commonwealth of Kentucky and Office of Applied Innovation; and
4. The Chicago Fire Department, International Association of Fire Fighters, and the OAI.

Breakout session 3 focused on the partnerships between Industry and Trade Associations that have increased the number and quality of courses available for responding to WMD incidents and other emergencies. NIEHS awardees such as the Midwestern Consortium and the International Chemical Workers Union have built strong relationships with various organizations.

Breakout session 4 concentrated on state, local and bi-national partnerships and closely examined the Massachusetts approach to preparing communities for a public health emergency as well as the Arizona effort to partner with several Mexican states to train emergency responders along their long border.

Friday began with the second OSHA plenary, which reviewed OSHA's newly emerging role in disaster response and homeland security and the actions the agency has taken to prepare for its new challenges. The focal point of the agency's efforts is the development of a National Emergency Management Plan (NEMP) and Regional Emergency Management Plans (REMPs). Part of these plans involve Specialized Response Teams (SRTs) which are made up of teams of toxic chemical, biological agent, ionizing radiation and structural collapse specialists. In addition, OSHA has drafted a Safety and Health annex to the National Response Plan that is currently being reviewed by the other federal partners.

Next, the EPA plenary panelists reviewed the role of the National Response Team (NRT), EPA's participation on the team and the changes anticipated under the NIMS. First, it was explained that response planning and coordination is accomplished at the federal level through the NRT, which is comprised of the Response, Preparedness and Science committees.



John Ferris, Special Assistant for Homeland Security to John Henshaw, the head of OSHA, highlighted the importance of linking training exercises to the National Contingency Plan (NCP). The NCPs contains regulations developed to ensure that federal resources and expertise are available immediately for hazardous material releases that are beyond the capabilities of local or state responders. John Ferris also noted that all emergency response programs should be consistent with each other and the EPA's Response Operations Center (OEPPR) has developed criteria to measure consistencies among programs.

Other successful programs include The NRT's Hazardous Materials Emergency Preparedness (HMEP) grant program and the collaboration between the EPA and inter-agency personnel. The HMEP provides financial and technical assistance as well as national direction and guidance to enhance State, Territorial, Tribal and Local hazardous materials emergency planning and training.

Friday concluded with more breakout sessions. For these sessions, participants were broken up into groups reflecting their sector of industry. These groups included: transportation, hospital and public health, chemical facilities and construction trades. The purpose of these sessions was to provide the WETP with enough information to develop an Emergency Support Activation Plan that will allow NIEHS to support OSHA with trainers, facilities, and specialists during an event of national significance. Information was gathered by questionnaire from all participants. The surveyed revealed that the WETP community has numerous professionals, including health physicists, industrial hygienists, and occupational physicians who could be activated for an emergency. There are thousands of instructors who could also train responders during an event in hundreds of facilities located throughout the country. All awardees offered HAZWOPER training, but also many specialty courses.

The consensus of respondents also believed that not only should each WETP-funded organization have one special person to contact in case of an incident (with a back-up person), but there needs to be one person that coordinates communication between organizations and agencies.

# Appendices

**Appendix: I: Training Parameters**  
**Final Eleven Year Summary: DOE\NIEHS Worker Education and Training Program**

TRAINING PARAMETERS <sup>1</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL
Number of Awardees	8	8	8	7	7	7	7	8	8	8	8	
Courses Completed	486	1,091	1,199	1,277	983	922	1,152	1,379	1,954	1,959	2,367	14,769
Workers Trained	7,107	13,566	18,642	18,394	15,048	14,049	15,860	18,833	25,399	23,187	29,240	199,325
Contact Hours	184,604	249,704	290,938	244,212	217,666	202,997	218,087	245,436	302,723	303,633	374,957	2,834,957
Dollars Awarded	\$11,887,000	\$9,891,526	\$9,719,474	\$8,935,000	\$7,996,000	\$8,436,000	\$7,423,500	\$8,200,000	\$8,076,971	8,201,000	\$8,022,138	96,788,609
Cost Per Contact Hours	\$64.39	\$39.61	\$33.41	\$36.59	\$36.74	\$41.56	\$34.04	\$33.41	\$26.68	\$27.01	\$21.39	\$34.14

<sup>1</sup>Data based on program years of training, which begin on September 1, 1993 through August 31, 1994; and continues this pattern for the next years.

**Appendix 2: FY 2003 Funding**

**DOE/NIEHS Worker Education and Training Awards for Budget Period 09/01/2003-08/31/2004**

<b>AWARDEE</b>	<b>DOE AWARD</b>
International Chemical Workers Union Council	\$466,941
International Association of Fire Fighters	\$635,777
Laborers-AGC Education and Training	\$2,712,562
Paper, Allied-Industrial, Chemical and Energy Worker International Union	\$1,136,022
University of Medicine & Dentistry of New Jersey	\$522,469
International Union of Operating Engineers	\$1,083,662
Center to Protect Workers' Rights	\$1,254,823
HMTRI Kirkwood Community College	\$209,882
<b>TOTAL</b>	<b>\$8,022,138</b>

**APPENDIX 3: Total Training By NIEHS Awardee**

**DOE/NIEHS Worker Education and Training Total Training for Budget Period 09/01/2002-08/31/2003**

<b>AWARDEE</b>	<b>COURSES COMPLETED</b>	<b>WORKERS TRAINED</b>	<b>CONTACT HOURS</b>
Center to Protect Workers' Rights	396	5,556	63,158
HMTRI Kirkwood Community College	589	5,926	27,379
International Association of Fire Fighters	41	920	24,942
International Chemical Workers Union Council	209	2,639	24,276
International Union of Operating Engineers	84	2,126	25,095
Laborers-AGC Education and Training	806	8,945	172,761
University of Medicine & Dentistry of New Jersey	72	450	6,890
Paper, Allied-Industrial, Chemical and Energy Worker International Union	170	2,678	30,456
<b>TOTAL</b>	<b>2,367</b>	<b>29,240</b>	<b>374,957</b>

## APPENDIX 4: Target Populations

### DOE/NIEHS Target Populations 09/01/2002 – 08/31/2003

TARGET POPULATIONS	COURSES COMPLETED	% COURSES COMPLETED	# WORKERS TRAINED	% WORKERS TRAINED	# CONTACT HOURS	% CONTACT HOURS
CERCLA Cleanup <sup>1</sup>	630	27%	10,486	36%	155,485	41%
RCRA/Industrial Emergency Response	75	3%	834	3%	10,056	3%
	48	2%	924	3%	22,494	6%
Radiation	598	25%	5,597	19%	30,456	8%
Lead Abatement	5	0%	43	0%	440	0%
Asbestos Abatement	227	10%	2,911	10%	61,736	16%
Hazardous Material	5	0%	84	0%	908	0%
Other	779	33%	8,361	29%	93,382	25%
<b>TOTALS</b>	<b>2,367</b>	<b>100%</b>	<b>29,240</b>	<b>100%</b>	<b>374,957</b>	<b>100%</b>

<sup>1</sup>The overall majority of training remains in the CERCLA Cleanup training.



**APPENDIX 5: Percent and Total of NIEHS Courses Completed, Workers Trained, and Contact Hours, by Site**

**DOE/NIEHS Worker Education and Training Program Percent and Total of NIEHS Courses Completed, Workers Trained, and Contact Hours, by Site for Budget Period 09/01/2002-08/31/2003**

SITE	COURSES COMPLETED		WORKERS TRAINED		CONTACT HOURS	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Argonne East	16	1%	391	1%	5,334	1%
Brookhaven National Laboratory	21	1%	269	1%	4,140	1%
Department of Energy - Headquarters	18	1%	326	1%	6,508	2%
Fernald Integrated Demonstration Site	6	0%	120	0%	2,088	1%
Hanford Waste Vitrification Plant	713	30%	9,008	31%	73,372	20%
Idaho National Engineering Laboratory	217	9%	1,275	4%	13,691	4%
Kansas City Plant	11	0%	158	1%	1,968	1%
Lawrence Livermore National Laboratory	32	1%	712	2%	18,320	5%
Los Alamos National Laboratory	49	2%	924	3%	32,502	9%
Mound Plant	9	0%	118	0%	1,568	0%
Multiple DOE sites	9	0%	110	0%	3,304	1%
Nevada Test Site	48	2%	644	2%	9,634	3%
Non-DOE Sites	52	2%	739	3%	12,725	3%
Oak Ridge Field Office	692	29%	9,651	33%	115,558	31%
Paducah Gaseous Diffusion Plant	91	4%	1,200	4%	10,037	3%
Pantex Plant	50	2%	806	3%	10,186	3%
Portsmouth Gaseous Diffusion Plant	122	5%	644	2%	6,314	2%
Princeton Plasma Physics Laboratory	37	2%	250	1%	4,822	1%
Rocky Flats Office	62	3%	709	2%	15,090	4%
Sandia Albuquerque	1	0%	15	0%	2,550	1%
Santa Susanna Field Laboratory	2	0%	33	0%	664	0%
Savannah River Site	79	3%	976	3%	21,590	6%
Stanford Linear Accelerator Center	3	0%	47	0%	976	0%
Weldon Springs	2	0%	20	0%	448	0%
West Valley Demonstration Project	25	1%	95	0%	1,568	0%
<b>TOTAL</b>	<b>2,367</b>	<b>100%</b>	<b>29,240</b>	<b>100%</b>	<b>374,957</b>	<b>100%</b>

<sup>1</sup> Includes: Department of Energy – Headquarters and others

**APPENDIX 6: FY 2004 Funding**

**DOE/NIEHS WORKER EDUCATION AND TRAINING AWARDS FOR BUDGET PERIOD 09/01/2004 - 08/31/2005**

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<b>AWARDEE</b>	<b>DOE AWARD</b>
International Chemical Workers Union Council	\$466,941
International Association of Fire Fighters	\$635,777
Laborers-AGC Education and Training	\$2,712,562
Paper, Allied-Industrial, Chemical and Energy Worker International Union	\$1,136,022
University of Medicine & Dentistry of New Jersey	\$522,469
International Union of Operating Engineers	\$1,083,662
Center to Protect Workers' Rights	\$1,254,823
HMTRI Kirkwood Community College	\$218,882
<b>TOTAL</b>	<b>\$8,031,138</b>

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