



National Institute of
Environmental Health Sciences
Worker Training Program

The National Institute of
Environmental Health Sciences/
Department of Energy

Nuclear Worker Training Program

Accomplishments and Highlights

Sept. 1, 2017 – Aug. 31, 2018



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Overview of the National Institute of Environmental Health Sciences (NIEHS)/Department of Energy (DOE) Nuclear Worker Training Program



HAZWOPER course at Amarillo College for the Pantex Plant, provided by PETE. (Photo courtesy of Amarillo College)

Program Goal

The goal of the NIEHS/DOE Nuclear Worker Training Program is to provide high-quality training to DOE site workers to ensure they are prepared to work safely in hazardous environments. Training aids DOE's commitment to safe work performance, providing skills and knowledge for workers to identify hazardous situations and to take appropriate actions to protect themselves, fellow workers, and the environment. To accomplish this, NIEHS funds programs to deliver both site-specific and trade-specific training that address complicated DOE site missions with ongoing and emerging hazards. The missions often include a combination of nuclear, industrial, chemical, demolition, and construction activities.

Program Overview

Administered since 1993 by the [NIEHS Worker Training Program](#) (WTP), the program provides site-specific, quality health and safety training to workers in a timely and cost-effective manner, with an average cost of \$27 per contact hour. Since the beginning of the program, 622,153 workers have received 8,176,138 contact hours of training in 42,876 courses.

Training is accomplished through a partnership involving government, contractors, and labor organizations. A cornerstone of the program is the use of “worker-trainers”—peer trainers who are experienced employees well-versed in performing a given task in a hazardous environment and who are trained to instruct other workers.

Protecting worker health and safety through training delivery has been a priority of the secretary of energy and is a primary goal of the Office of Environmental Management (EM). As 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.

The training offered under the NIEHS/DOE Nuclear Worker Training Program supports and integrates with DOE safety culture; Title 10 of the Code of Federal Regulations, part 851 (10 CFR 851), “Worker Safety and Health Program”; and other initiatives.



Top photo: Shipments of waste to the Waste Isolation Pilot Plant.

Bottom photo: Storage vessel at the Hanford site.

(Photos courtesy of DOE)

Training Participants

The NIEHS/DOE Nuclear Worker Training Program trains a variety of workers engaged in environmental restoration activities at DOE nuclear weapons sites. Trainees include crane operators, carpenters, welders, laborers, chemical operators, firefighters, construction workers, electricians, environmental technicians, insulators, laboratory technicians, machinists, pipe fitters, and truck drivers.

Additionally, some training is extended to communities surrounding DOE sites, who then gain certifications and skills that increase eligibility for employment at a nearby DOE site or keep them prepared if called upon in an emergency. These “fence line” communities include Native American tribes, as discussed in a 2018 NIEHS WTP [report on training with Native Americans](#) that included examples from the NIEHS/DOE program.

A National Asset in Emergency Response

The NIEHS/DOE program represents a large pool of trained, certified workers who respond in case of accidental or deliberate radiological events. While it was never imagined that this program would result in a capacity to respond to such events, this is a benefit and a national security asset. WTP has developed a mechanism for identifying and mobilizing these pre-trained, experienced workers.

Program Training Data, 2017-2018

Training Summary

For the 2017-2018 program year (Sept. 1, 2017, to Aug. 31, 2018):



27,739

Workers trained



1,678

Courses provided



343,203

Contact hours
delivered



\$9,425,498

Dollars awarded



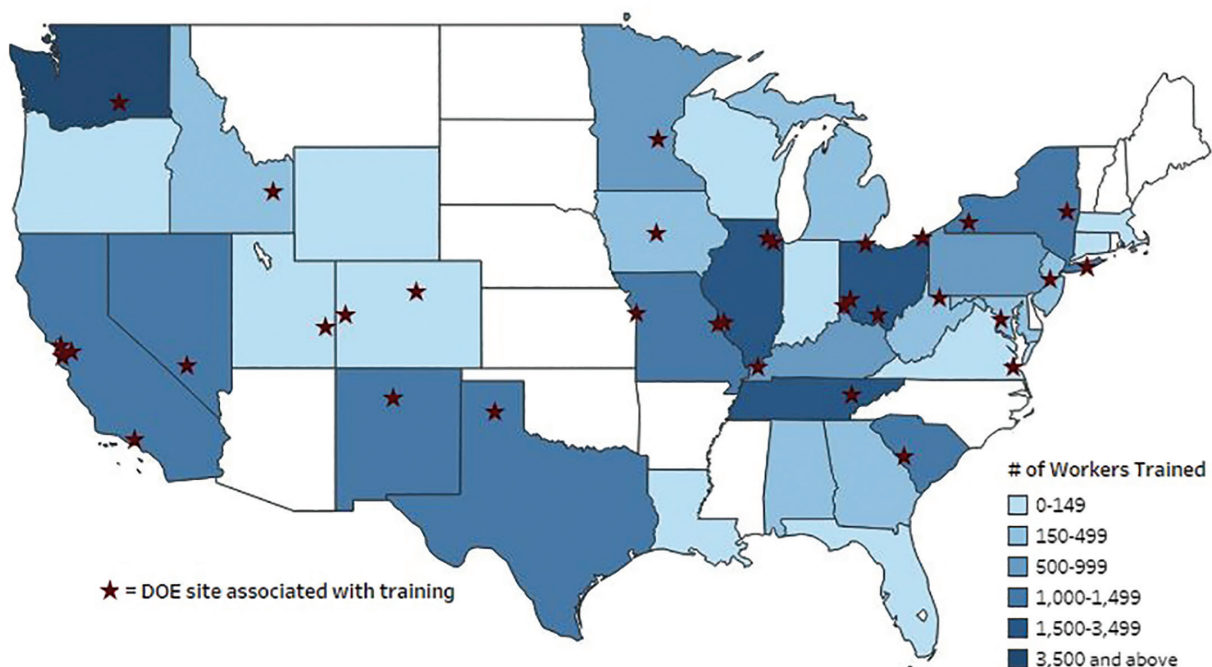
\$27.46

Average cost per
contact hour

Training Locations

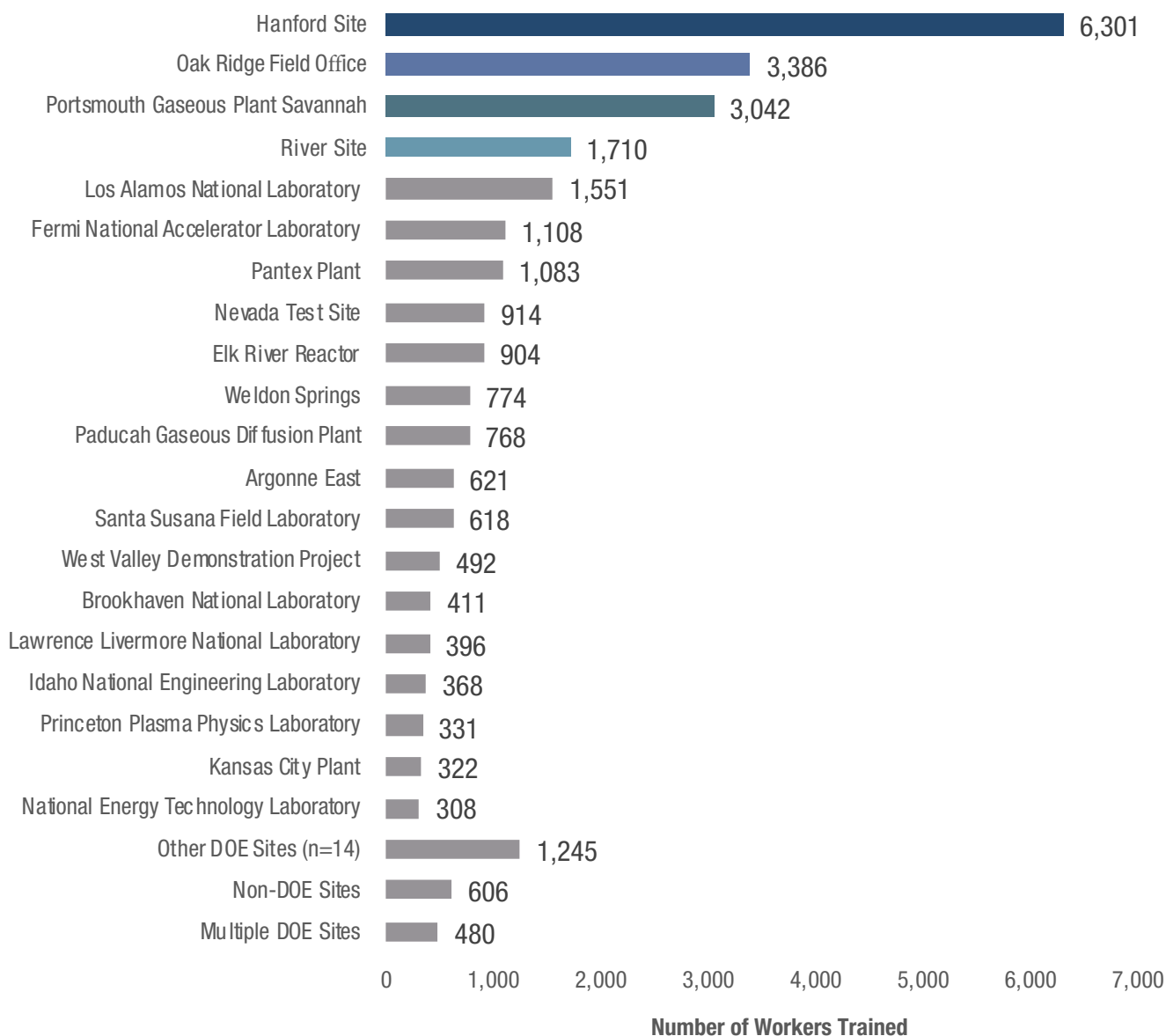
Training was conducted at or around 34 different sites, as shown in the map. The training for so many sites, large and small, demonstrates the national scope of this program. A full list of DOE sites is available in the Data Tables section of this report.

The map also summarizes the number of workers trained across the country. The locations with the highest numbers of workers trained reflect the sites with the largest cleanup operations for DOE EM.



The figure below shows sites with the highest numbers of workers trained.

The **Hanford Site** had the highest number of workers trained, followed by **Oak Ridge**, **Portsmouth**, and **Savannah River**. Overall, grantees trained at or around 34 sites this year. (Sept. 1, 2017 – Aug. 31, 2018)



















Multiple DOE Sites: When trainees are brought in from across various sites to a specific training center for a course.

Non-DOE Sites: When training courses are delivered to potential future workers from communities around a DOE site.

Top Courses at Top Sites

The figure below shows the courses in which the highest numbers of workers received training at the sites with the highest numbers of workers trained during the 2017-2018 program year.

Top Courses, by Workers Trained, by Site

Hanford Site	Oak Ridge Field Office	Portsmouth Gaseous Diffusion Plant	Savannah River Site
 <p>3,886</p> <p>Site Worker Refresher</p>	 <p>1,760</p> <p>Site Worker Refresher</p>	 <p>1,084</p> <p>Radiological Control Technician Training</p>	 <p>1,059</p> <p>Emergency Response for Specific Hazards</p>
 <p>1,502</p> <p>Respiratory Protection</p>	 <p>992</p> <p>Radiation Worker II Training</p>	 <p>929</p> <p>Site Worker Refresher</p>	 <p>134</p> <p>Asbestos Abatement Supervisor Refresher</p>
 <p>387</p> <p>Basic Superfund Site Worker</p>	 <p>196</p> <p>Basic Superfund Site Worker</p>	 <p>389</p> <p>Asbestos Abatement Supervisor Refresher</p>	 <p>122</p> <p>Asbestos Abatement Worker Basic</p>
 <p>131</p> <p>RCRA TSD Site Worker*</p>	 <p>100</p> <p>Asbestos Abatement Supervisor Refresher</p>	 <p>190</p> <p>General Construction Safety</p>	 <p>104</p> <p>Asbestos Operations and Maintenance Refresher</p>

* Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Site Worker

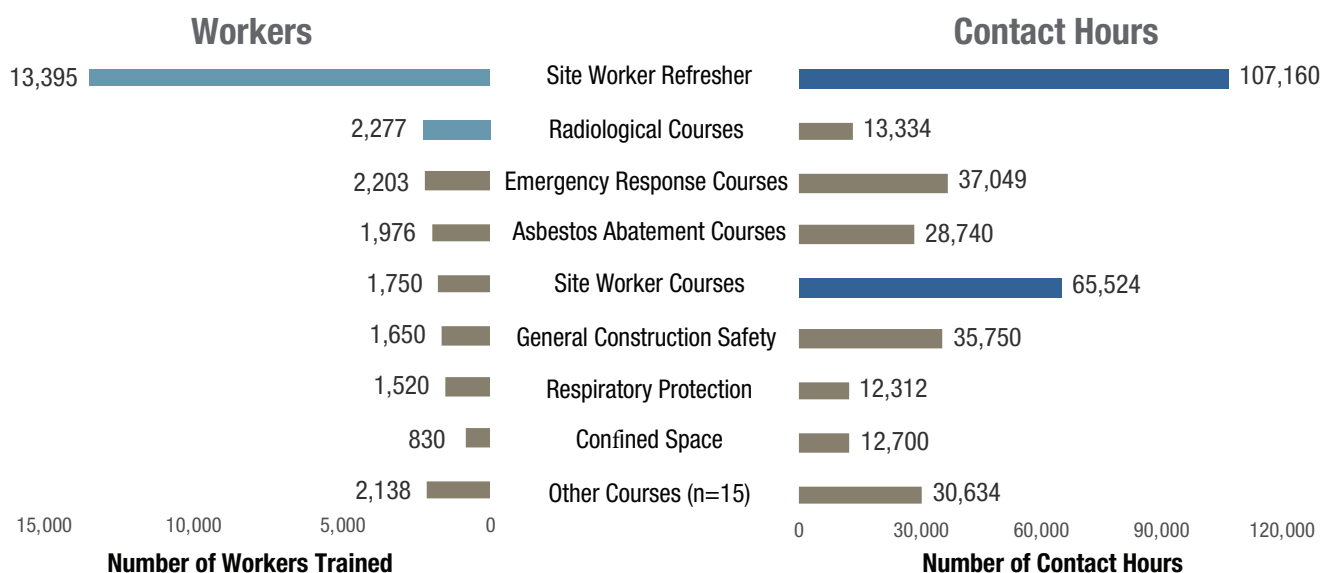
Training Course Categories

The figure below shows the numbers of workers trained and total contact hours for various courses during the 2017-2018 program year. These courses are critical to ensuring DOE worker and site safety, and worker readiness for employment. A full list of training courses, organized by categories, is available in the Data Tables section of this report.

Of the 27,739 **workers trained**, the highest numbers of workers received training in **Site Worker Refresher** and **Radiological Courses**.

Of the 343,203 **contact hours**, grantees delivered the highest numbers of contact hours through **Site Worker Refresher** and **Site Worker** courses.

(Sept. 1, 2017 – Aug. 31, 2018)



The “Other Courses” shown in the chart above includes:

- Adult CPR
- Crane Operators
- Fall Protection
- General Industry Safety
- Lead Abatement Courses
- Load Securement
- Lockout/Tagout
- Microbial Remediation: Mold and Mildew
- Miner Basic
- RCRA/Industrial Courses
- Rigging and Signaling
- Safety Culture/Safety Leadership
- Scaffold
- Training Methods/Trainer Development
- Trench Protection Principles of Pipe Laying

Ongoing, New, and Upcoming Initiatives

NIEHS Program Leadership and Activities

NIEHS WTP staff engage in ongoing work with DOE partners. During the 2017-2018 year, this included:

- Providing a program briefing at DOE EM headquarters in Germantown, Maryland, in July 2018.
- Presenting at the DOE Safety Culture Improvement Panel annual meeting on recent program achievements and curricula developments in May 2018.
- Presenting to the DOE Industrial Hygiene Contractors Meeting at the American Industrial Hygiene Conference and Exposition in Philadelphia, Pennsylvania, in May 2018. During this presentation, WTP Industrial Hygienist Sharon Beard provided an update on training under the NIEHS/DOE program, provided insight into the safety culture training and collaborations, and summarized recent events and reports from WTP.
- Attending and presenting at a joint meeting with the Energy Facility Contractors Group (EFCOG) Training Working Group and the DOE Labor Training Working Group in March 2018.

These meetings, presentations, and discussions allow NIEHS and DOE to continually collaborate, keep each other up-to-date, and receive feedback on initiatives.

Reciprocity through the National Training Center (NTC)

Several grantees have been [certified for reciprocity for multiple training courses](#) by NTC in accordance with DOE policy on health and safety training reciprocity (DOE P 364.1). Additional certifications are planned for 2019.

Course certification allows for portability of worker training between DOE contractors and sites. Reciprocity saves money for DOE by eliminating redundant fundamental training and allowing contractors to redirect resources to site-specific training or other training prior to job qualification. The EFCOG Training Working Group supports this initiative.

An indirect benefit of NIEHS grantee participation in reciprocity has been an ability to help DOE contractors address in-house instructor needs. Examples are discussed under “Grantee Training for Contractor Employees.”

The current NIEHS-funded organizations holding reciprocity certifications are:

- CPWR—The Center for Construction Research and Safety: Hazardous Waste Operations and Emergency Response (HAZWOPER), Confined Space Entry
 - CPWR Consortium Members
 - Ironworkers Apprentice and Journeymen Upgrade Training Program: HAZWOPER, Fire Watch, Aerial Lift Safety, Scaffold Safety
 - United Association of Plumbers, Fitters, Welders, and Service Techs: Confined Space Construction
 - Electrical Training Alliance/International Brotherhood of Electrical Workers (IBEW): National Fire Protection Association (NFPA) 70E Standard for Electrical Safety
- International Union of Operating Engineers: HAZWOPER
- United Steelworkers: HAZWOPER

The Laborers' International Union of North America (LIUNA) has previously been funded under the NIEHS/DOE Nuclear Worker Training Program and has HAZWOPER and Radiological Worker course reciprocity. They currently train workers at DOE sites, including D.C. and Germantown staff, under the [NIEHS Hazardous Waste Worker Training Program](#).

Reviews are in progress, or are planned for later in 2019, to expand participation of United Steelworkers and the International Union of Operating Engineers.

National and Site-Specific Collaborations with the Site Contractor Community

NIEHS grantees have started collaborating with the contractor community. As members of the DOE Labor Training Working Group, they met with the EFCOG Training Working Group in March 2018, and the two groups discussed how to work together to create training efficiencies.

Following this meeting, NIEHS developed a framework to share their program's training capabilities across the complex to facilitate connections between NIEHS training organizations and the EFCOG Training Working Group. This collaboration is helping to meet contractor and subcontractor training needs within the parameters of the National Institutes of Health (NIH) grant, described later in this section.

The desired goal is to develop relationships to facilitate delivery of training by NIEHS WTP grantees at no or reduced cost to the sponsoring contractor, which could reduce redundancy, reduce contractor costs, and fill contractor training gaps. The training delivery could occur through improved use of the DOE Training Reciprocity Program and existing DOE EM funding to NIEHS.

DOE Liaison

To better leverage existing training capacity and educate new DOE contractors, WTP established a part-time liaison with extensive DOE experience, Ted Giltz. Giltz started in the position in October 2018 and will continue to assist with many of the initiatives described in this report.

Grantee Training for Contractor Employees

The following examples show where contractors have started planning for use of NIEHS/DOE grantee training beyond the existing HAZWOPER training delivery that has been in place for several years.

- **Idaho National Laboratory (INL):** CPWR consortium member IBEW delivered required NFPA 70E electrical training to Idaho contractors in November 2018. The training was provided at no cost to the contractor, resulting in a savings of over \$100,000 when compared to their previous decision to broker training to general industry vendors. INL and CPWR are making plans for more training in the future.
- **Los Alamos National Laboratory (LANL):** Conversations have started to support training for the new LANL-EM contractor by working with N3B, LLC.
- **EM Consolidated Business Center and Headquarters:** Plans are underway to provide expanded training support to staff, particularly in a 40-hour HAZWOPER course and initial Radiation Worker Training.

Also, due to attrition of contractor experience and knowledge and the costs of maintaining course materials, discussions are in place regarding grantees providing specialized training in areas such as specialty electrical training topics, fire system maintenance, condensate-induced water hammer, crane/rigging, and trenching. This could provide effective peer training, expand access to a workforce that has already completed fundamental safety training in many areas, and avoid retraining and other project mobilization costs.



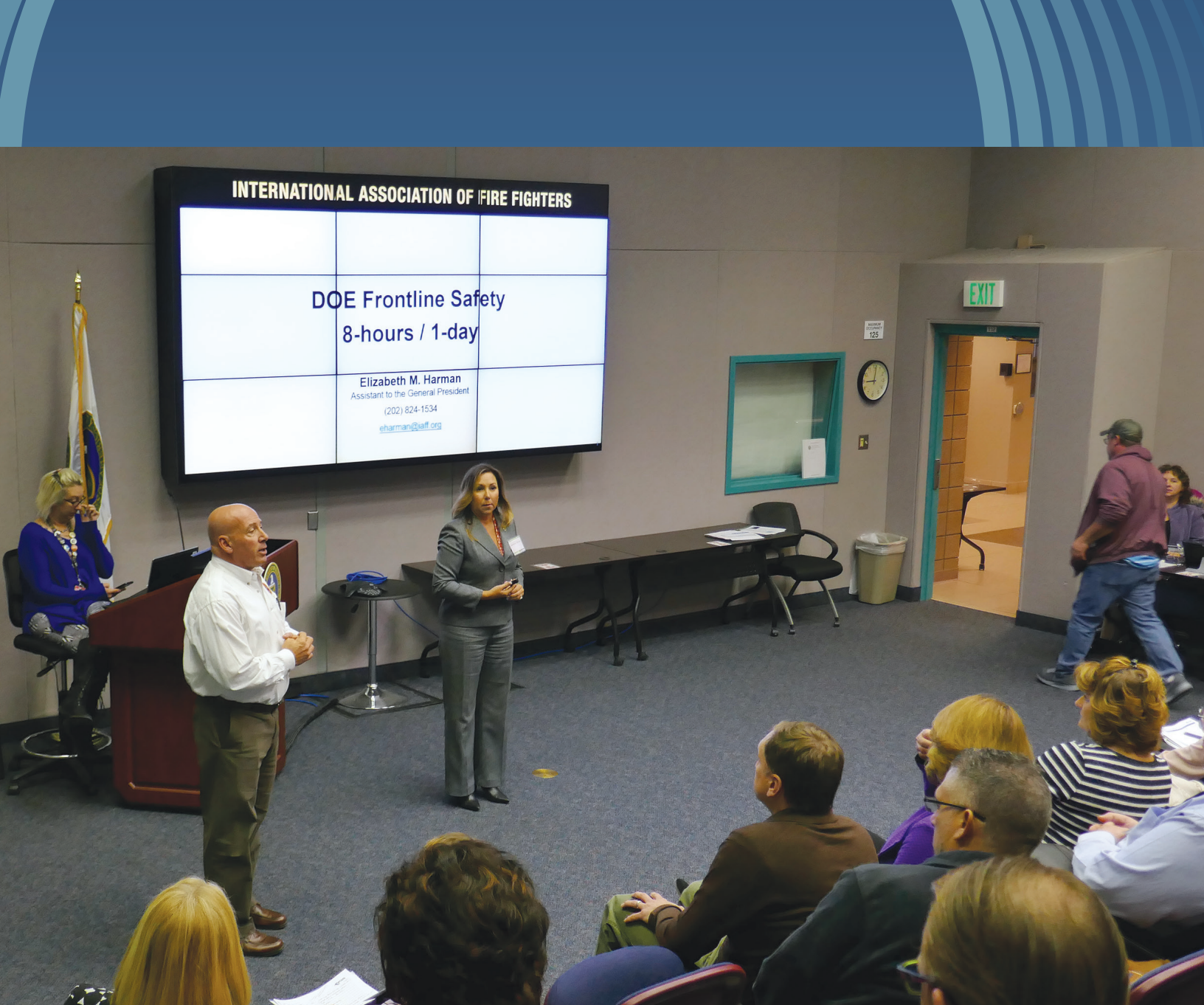
HAZWOPER course at Amarillo College for the Pantex Plant, provided by PETE. (Photo courtesy of Pantex)

Sharing Course Materials

Portsmouth/Paducah Project Office (PPPO): The United Steelworkers Tony Mazzocchi Center was able to use existing DOE Radiological Control Technical training materials provided by NTC to conduct a course for 30 individuals at PPPO, with minimal course development needed. NTC supports sharing of government-owned training materials through the availability of the Course and Related Data System, which reduces development and maintenance costs and will increase consistency in course content over time.

Accepting Apprentice/Journey Training

Discussions took place to identify fundamental health and safety training already provided through national labor union training programs. Union craft and trade workers typically complete a five-year apprentice program that contains an extensive emphasis on health and safety. To increase connections and efficiencies, during the next several months an approach will be developed to review specific apprentice and journey training content and understand how it aligns with DOE requirements. It is anticipated that the use of the reciprocity program as well as other training management tools will be considered. This initiative may require support from DOE staff at EM and the Office of Environment, Health, Safety, and Security.



IAFF presentation of Frontline Safety course to the EFCOG Training Working Group at DOE's NTC. (Photo courtesy of NIEHS)

National Curriculum and Criteria Initiatives

Safety Culture Initiatives

NIEHS and grantees have continued to focus on curricula development that will enhance safety culture at DOE sites, in accordance with the attributes in [DOE G 450.4-1C](#), "Integrated Safety Management System Guide," and Energy Secretary Rick Perry's [safety culture address to the department](#). Both CPWR and the International Association of Fire Fighters (IAFF) have developed safety culture curricula tailored to DOE workers, with supplemental funding provided through the grant.

The curricula developed are described on the following page. All three are available for dissemination, with training delivery and Train-the-Trainer classes ongoing. NTC will maintain information on available course providers and curricula.

NIEHS Grant Recipient: CPWR

Course: Foundations for Safety Leadership (FSL) for DOE

Length: 2.5-3 hours

The CPWR FSL for DOE training course introduces workers at DOE facilities, particularly those with supervisory responsibilities, to critical safety leadership skills and provides specific actions they can take to be an effective safety leader and improve jobsite safety climate. The training was developed by construction industry experts, including experienced Occupational Safety and Health Administration (OSHA) outreach trainers, construction workers, health and safety professionals, and leadership specialists. Participants will explore foundational material on what safety leadership is and why it's critical to improving jobsite safety climate. In addition to learning the foundational material, participants will have the opportunity to apply their new safety leadership skills to real-world worksite scenarios found at DOE facilities.

Contact: CPWR

NIEHS Grant Recipient: CPWR

Course: Safety Orientation for DOE Workers

Length: 8 hours

CPWR has developed an orientation course aimed at helping construction workers who are, or will be, working at a DOE site understand the unique environment working at DOE presents to them. The course is a one-day class and is geared toward new or relatively new construction workers at DOE. It focuses on worker health and safety within the context of existing DOE policies and procedures, such as the Integrated Safety Management System and DOE's 10 CFR 851 Worker Safety and Health Program, which are the fundamental underpinnings for a positive safety culture across the complex and the policies that drive worker health and safety protections at each DOE site. The course is designed so it can also be taught to the existing construction workforce as a TLP-100 Safety Culture course.

CPWR will submit the final course to DOE's NTC for them to adapt for the creation of a TLP-100 course, incorporating it within the NTC reciprocity process.

Contact: CPWR for the course for construction workers, NTC for the TLP-100

NIEHS Grant Recipient: IAFF

Course: Frontline Safety for DOE

Length: 8 hours

This course allows participants to discuss the factors that contribute to worker health and safety, identify causes of worker injuries and fatalities, examine their values, and apply strategies for advancing health and safety. Participants reflect on their own values and actions related to safety and explore the safety culture of DOE and their workers who perform dangerous duties. The trainers consist of worker trainers and manager trainers. Beginning trainers work alongside IAFF master instructors.

Contact: IAFF



Opioids: Prevention of Occupational Exposure, and Workforce Training on Use and Abuse

WTP is at the forefront of addressing the opioid crisis from the worker health and safety perspective, looking at the issue from two viewpoints.

First, there are the workers who may encounter toxic exposures from illicitly-manufactured drugs during their daily work, such as emergency medical services providers, firefighters, environmental cleanup workers, families of users, co-workers, health care providers, and law enforcement personnel. An awareness-level training tool, “[Prevention of Occupational Exposure to Fentanyl and Other Opioids](#),” developed under separate funding, is available from NIEHS and is being delivered by grantees at some DOE sites.

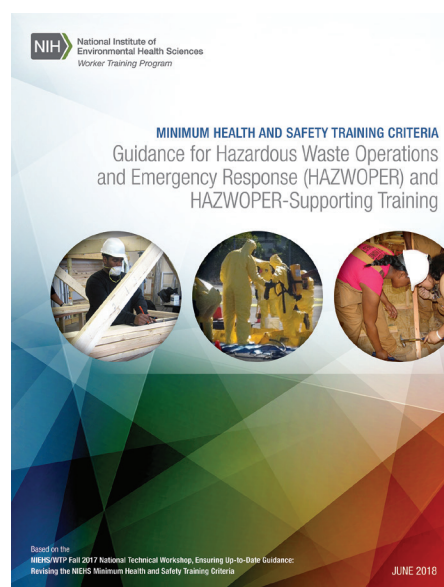
Second, there are the blue-collar workers in the construction, manufacturing, and service industries that have been identified as a primary vulnerable population for both potentially harmful opioid exposure and potentially deadly opioid use and abuse. WTP is developing another training, under separate funding, to address the risks for these workers. This curriculum will also be available for delivery at DOE sites.

NIEHS Minimum Health and Safety Training Criteria

“[Minimum Health and Safety Training Criteria: Guidance for Hazardous Waste Operations and Emergency Response \(HAZWOPER\) and HAZWOPER-Supporting Training](#)” is a national guidance document for training hazardous waste workers and emergency responders. It also serves as the primary quality control foundation for NIEHS WTP training grants; grant recipients are required to follow the guidance in this document on topics such as curriculum review, maximum class size, and instructional staff competency.

In October 2017, WTP held a national technical workshop to develop consensus on proposed revisions to the Minimum Health and Safety Training Criteria, as part of periodic review and updates of the document. The workshop discussions resulted in changes made to the document in the following areas:

- E-learning
- Collateral Duty
- Proficiency Assessment
- Instructor Development
- Evaluation
- Disaster Training
- Infectious Disease
- Evergreening of Curricula



Some of these updates reflect similar ongoing discussions within DOE and EFCOG, such as program evaluation and appropriate use of e-learning and technology.

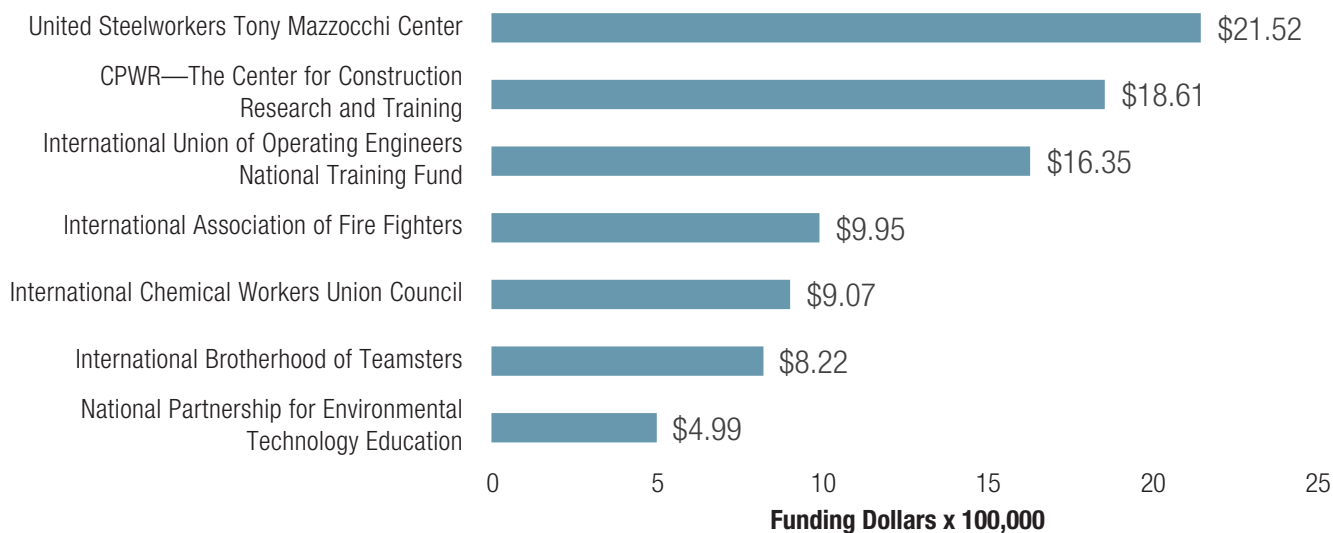
Five-Year Competitive Renewal

The competitive renewal phase for the NIEHS/DOE Nuclear Worker Training Program will occur later in 2019. This will be an open, peer-reviewed NIH funding opportunity announcement (FOA) for the next five years of the cooperative agreement. NIEHS will keep all DOE partners informed of the FOA progress.

Program Funding and Grantees

Funding

Through an interagency agreement, NIEHS provided \$9,425,498 in funding to NIEHS/DOE program grantees (\$8,870,655 in the primary grant, as shown below, and \$554,843 in supplemental funds) during the 2017-2018 program year. Funding was from fiscal year 2018 DOE appropriations. Seven grantees were funded to implement training during the year.



Program Grantees

CPWR—The Center for Construction Research and Training

CPWR is sponsored by North America's Building Trades Unions, which represents 14 international/national building trades unions. Their training consortium includes the following international and national construction unions: Insulators and Asbestos Workers; Iron Workers; Boilermakers; Painters; Bricklayers; Plasterers and Cement Masons; Carpenters; Plumbers and Pipe Fitters; Electrical Workers; Roofers; and Sheet Metal Workers. CPWR provides training for many DOE sites across the country.

International Association of Fire Fighters (IAFF)

IAFF represents full-time professional firefighters and paramedics in more than 3,200 affiliates. Its members protect more than 85 percent of the population in communities throughout the United States and Canada. IAFF implements national training programs for all-hazards emergency response and recovery, meeting or exceeding minimum requirements of federal regulations and national industry standards. IAFF provides training at or around many DOE sites across the country.

International Brotherhood of Teamsters (IBT)

Through partnerships with major trucking and rail unions, IBT works with: 1) remediation site workers and supervisors at DOE facilities; 2) construction workers and supervisors involved in the remediation of DOE facilities, including drivers of specialized off-road and waste hauling vehicles; 3) truck transportation workers and supervisors who are involved in the transportation of radioactive and chemical waste from DOE facilities; and 4) railroad workers and supervisors involved in the transportation of radioactive and chemical hazardous waste from DOE facilities. IBT delivers training for many DOE sites, bringing in members to their regional training centers across the country.

International Chemical Workers Union Council (ICWUC) Center for Worker Health and Safety Education

The ICWUC Center for Worker Health and Safety Education provides training on the dangers of hazardous materials and waste at nuclear facilities and includes the following consortium partners for the DOE program: International Association of Machinists and Aerospace Workers and the University of Cincinnati. ICWUC primarily trains workers at Hanford, Kansas City, LANL, and Oak Ridge.

International Union of Operating Engineers (IUOE) National Training Fund (NTF)

The workers IUOE represents include 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. IUOE provides training for many DOE sites across the country.

National Partnership for Environmental Technology Education (PETE)

The Community College Consortium for Health and Safety Training (CCCHST) is administered by PETE. There are over 150 training organizations represented in CCCHST, including colleges and universities, community-based organizations, governmental units, independent training providers, and a union. These groups offer hazardous waste training in most states in the nation. PETE primarily provides training at colleges near Oak Ridge, Pantex, and Savannah River.

United Steelworkers Tony Mazzocchi Center (USW TMC) for Health, Safety, and Environmental Education

USW TMC has established health and safety training programs and has more than 200 national and site-specific trainers who recruit and train workers. Many USW members are concentrated in the paper, petroleum, chemical, rubber, plastics, and primary metals industry groups, all of which contain large quantities of hazardous waste and experience large quantities of toxic releases. USW TMC primarily provides training at Hanford, INL, Oak Ridge, Paducah Gaseous Diffusion Plant, and Portsmouth Gaseous Diffusion Plant.

Additionally, LIUNA Training and Education Fund provides some training at DOE sites under the [NIEHS Hazardous Waste Worker Training Program](#). They were previously funded under the NIEHS/DOE Nuclear Worker Training Program.

Trainee and Contractor Feedback

USW TMC

From Portsmouth Gaseous Diffusion Plant: *"Because of the HAZWOPER training provided by the Tony Mazzocchi Center, our crew paused a job until we get the right equipment for the job task. An example is obtaining the right attachment for the forklift before proceeding with the job. In most cases, it just takes a few minutes to change one or two things to make the job safer and easier for the worker."*

CPWR

From Hanford/Volpentest HAMMER Federal Training Center (HAMMER) Hazardous Waste Refresher 8-hour courses:

"Instructors are enthusiastic about the program and work to keep the material interesting, help us to understand the material, and apply it to our jobs."

"I really like the info about radiological hazards being added in; it created a fuller picture for what is encountered at this site."

IAFF

Trainee evaluation comments:

"This [Confined Space] class is one of the best fire department classes I have taken. I am very thankful for the opportunity to attend this class. I just want to express my thanks for this class being put on by the IAFF and all the instructors who were there."

"It was refreshing to have instructors who were all very qualified and competent in hazmat. They all did a fantastic job."

"They did a lot of scenarios and experiences which helped paint a realistic picture for us. They used language and jargon to simplify a complicated subject and made [it] so much easier to grasp."

PETE

Contractor feedback from Portsmouth Gaseous Diffusion Plant: *"The Fluor-B&W Portsmouth Engineering team is a major user of the Online Health and Safety training provided by the Partnership for Environmental Technology Education (PETE) Training program at the Portsmouth, Ohio D&D site. The quality and flexibility offered by the PETE online training allows engineering to efficiently train our full time and contractor support engineers to better serve the needs of the project. The continued availability of this unique service will help assure a continuous cadre of qualified technical support personnel at the site."*



Hands-on exercise during ICWUC's HAZWOPER training at HAMMER. (Photo courtesy of HAMMER)

Training Highlights

IBT

Building Trainer Capacity Across the Complex: IBT was able to build the capacity of health and safety instructors through several additional courses this year. They held an Instructor Development Program at HAMMER, a 40-hour HAZWOPER Train-the-Trainer class, a Radiological Train-the-Trainer, a trainers' workshop at HAMMER for the rail instructors, and an OSHA 5600 – Disaster Site Worker course for trainers. These training courses provided the instructors with additional knowledge and tools that they can use to improve their teaching abilities in the classroom. The new instructors benefitted from learning effective teaching techniques, developing new training skills, and being mentored by other trainers.

ICWUC

Hanford Site: Trainers at Hanford and HAMMER make sure that training has direct relevance to the ongoing projects at Hanford. For example, the trainers created a module for the 8-hour HAZWOPER Refresher that used the partial PUREX tunnel collapse as a scenario. Participants discussed how to respond to an emergency situation, reviewing who should do what tasks, who to contact, who is in charge, and more, based on various job roles.

IUOE

Native American Training: IUOE NTF conducted 40-hour and 8-hour HAZWOPER courses for members of the Spokane Tribe of Indians in May 2018. Tribal members learned marketable skills that can support activities at the Hanford site or INL. NTF established this training connection through its Local 302 in Spokane, Washington, and has provided HAZWOPER every year for the past six years with the Spokane Tribe.



Man down exercise during an IBT training at HAMMER. (Photo courtesy of IBT)

Members cover a wide range of occupations, including several workers from the Midnite Mine, several from Tribal Housing on the reservation, two working for the Tribal Environmental Department, one working for the Tribal Forestry Department, and several aiming to gain employment on the reservation at the Midnite Mine or for the tribal government.

USW TMC

Community Outreach in Ohio: USW TMC continues to pursue opportunities to enhance employment opportunities for potential DOE employees and provide needed community outreach training. They are currently working with the Morgan County Vocational Center in Wartburg, Tennessee; the Collins Career Center in Chesapeake, Ohio; and the Ross County Safety Council in Chillicothe, Ohio.

One example is how USW TMC and USW Local 1-689 partnered with the Ross County Safety Council and Portsmouth Mission Alliance to provide OSHA 10-hour General Industry training in Chillicothe, Ohio. The training reached 25 attendees from surrounding communities; they successfully completed the class and obtained their OSHA 10-hour cards. The training was so successful that a waiting list was needed for future classes. Several attendees are expected to ultimately support activity at Portsmouth.

Clearinghouse Activities

Clearinghouse Overview

The [National Clearinghouse for Worker Safety and Health Training](#) (Clearinghouse), operated by MDB, Inc. and directed by Deborah Weinstock, provides technical support to NIEHS grantees that conduct hazardous waste worker training for the DOE weapons complex. The Clearinghouse regularly features articles about chemical and radiological issues around the complex in its electronic newsletter, the [Worker Training Program Weekly e-Newsbrief](#), which is distributed to more than 1,500 subscribers. Newsbrief articles cover critical issues such as cleanup completion at sites, include links to recently released DOE reports, and feature upcoming DOE health and safety meetings.

The Clearinghouse website houses numerous reports on environmental, health, and safety topics specifically related to DOE. The website contains many resources and a database of [health and safety training curricula](#) developed for DOE workers by NIEHS/DOE grantees.

Evaluation of the NIEHS/DOE Nuclear Worker Training Program

Following the July 18, 2018, NIEHS/DOE Interagency Annual Training Summary meeting, the Clearinghouse proposed to do an evaluation of the NIEHS/DOE training program that would update the common evaluation program elements of all of the grantee programs and review all evaluation reports submitted by grantees. A report is now underway that will provide an overview of the work performed by grantees during the past three years, and an analysis of common themes, challenges, and successes. The report will be completed during the 2018-2019 program year.

Participation in the Labor Training Working Group

Weinstock participates in DOE Labor Training Working Group meetings. Two of these meetings were held during the 2017-2018 program year (Oct. 3, 2017, and March 14, 2018). In March 2018, the group met with the EFCOG Training Working Group. Following a discussion on training evaluation and identification of EFCOG's interest in this topic, Weinstock provided several evaluation-related resources to Karen Boardman to share with EFCOG participants.

HAMMER Steering Committee Meetings

Weinstock participated in the October 2017 and April 2018 HAMMER Steering Committee and Medical Surveillance Subcommittee meetings.

WTP/DOE Annual Report

The Clearinghouse provides the graphic design for the annual interagency report submitted by WTP to DOE.

Background of the NIEHS/DOE Program Partnership

WTP Authorization

Section 126(g) of the Superfund Amendments and Reauthorization Act of 1986 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. Congress assigned responsibility for administering this program to NIEHS.

Defense Authorization

Section 3131(a)(1)(A)-(B) of the National Defense Authorization Act for fiscal years 1992 and 1993 (42 USC 7274(d)) authorized the secretary of energy to award grants “to provide training and education to persons who are or may be engaged in hazardous substance response or emergency at Department of Energy nuclear weapons facilities; and to develop curricula for such training and education.” The secretary was further authorized in section 3131(a)(2)(A)-(B) to award grants to nonprofit 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.”

NIEHS/DOE Agreement

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.

OSHA Regulations

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 the Comprehensive Environmental Response, Compensation, and Liability Act and respective DOE directives to meet the requirements of OSHA regulation 20 CFR 1910.120 and the Environmental Protection Agency HAZWOPER training requirements (40 CFR 300.150).

For more information on the NIEHS/DOE Nuclear Worker Training Program, visit https://www.niehs.nih.gov/careers/hazmat/about_wetp/doe/index.cfm.

Data Tables



Transuranic waste transport at Argonne National Laboratory. (Photo courtesy of DOE)

Total Training by NIEHS Grantee, Sept. 1, 2017 – Aug. 31, 2018

Grantee	Courses Completed	Workers Trained	Contact Hours
CPWR - The Center for Construction Research and Training	331	5,232	86,090
International Association of Fire Fighters	37	752	36,272
International Brotherhood of Teamsters	217	3,120	32,890
International Chemical Workers Union Council	228	2,971	28,310
International Union of Operating Engineers	399	7,861	88,978
National Partnership for Environmental Technology Education	179	3,362	24,627
United Steelworkers Tony Mazzocchi Center	287	4,441	46,036
Totals	1,678	27,739	343,203

Courses Provided through the DOE Program by NIEHS Grantees, Sept. 1, 2017 – Aug. 31, 2018

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Site Worker	Basic Superfund Site Worker	109	1,497	58,304
	Hazardous Waste Operations	1	9	36
	Hazard Communication	2	64	1,536
	Site Worker Train-the-Trainer	3	41	2,600
	Superfund Bridge Training	27	139	3,048
	Site Worker Totals	142	1,750	65,524
Site Worker Refresher	Site Worker Refresher	680	13,395	107,160
	Site Worker Refresher Totals	680	13,395	107,160
RCRA/Industrial	Industrial Emergency Responder Tech.	1	9	216
	Process Safety Management	2	13	328
	RCRA Site Train-the-Trainer	1	6	240
	RCRA TSD Site Worker	19	173	4,360
	RCRA/Industrial Totals	23	201	5,144
Emergency Response	Computer-Aided Management of Emergency Operations (CAMEO)	1	1	40
	Emergency Response for Specific Hazards	50	1,207	5,049
	Emergency Response/HazMat Technician	21	456	28,240
	HazMat Transportation Awareness	1	17	136
	HazMat Transporter/Basic	18	522	3,584
	Emergency Response Totals	91	2,203	37,049
Radiological	Radiation Worker II Training	56	1,007	6,798
	Radiation Worker Refresher	10	186	1,488
	Radiological Control Technician Training	57	1,084	5,048
	Radiological Totals	123	2,277	13,334
Lead Abatement	Lead Abatement Worker Refresher	1	5	40
	Lead Abatement Totals	1	5	40

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Asbestos Abatement	Asbestos Abatement Supervisor	15	284	11,360
	Asbestos Abatement Supervisor Refresher	75	1,023	8,184
	Asbestos Abatement Worker Basic	17	183	4,064
	Asbestos Abatement Worker Refresher	24	278	2,224
	Asbestos Awareness	1	44	1,760
	Asbestos Inspector Refresher	5	38	152
	Asbestos Management Planner	3	22	164
	Asbestos Operations & Maintenance Refresher	9	104	832
	Asbestos Abatement Totals	149	1,976	28,740
Other Courses	Adult CPR	88	548	3,344
	Confined Space	65	830	12,700
	Crane Operators	6	89	1,256
	Fall Protection	12	121	1,224
	General Industry Safety	28	353	5,782
	General Construction Safety	106	1,650	35,750
	Load Securement	11	115	920
	Lockout/Tagout	5	45	212
	Microbial Remediation: Mold and Mildew	2	24	192
	Miner Basic	1	20	480
	Respiratory Protection	88	1,520	12,312
	Rigging and Signaling	25	223	3,062
	Safety Culture/Safety Leadership	4	60	240
	Scaffold	1	19	608
	Training Methods/Trainer Development	22	252	7,356
	Trench Protection Principles of Pipe Laying	5	63	774
	Other Courses Totals	469	5,932	86,212
Overall Totals		1,678	27,739	343,203

Total NIEHS Training by DOE Site, Sept. 1, 2017 – Aug. 31, 2018

Site Name	Courses Completed	Course Percentage	Workers Trained	Workers Percentage	Contact Hours	Contact Hours Percentage
Ames Laboratory	16	1%	230	1%	2,466	1%
Argonne East	39	2%	621	2%	15,430	4%
Ashtabula	6	0%	118	0%	5,112	1%
Barker Brothers	5	0%	56	0%	1,340	0%
Brookhaven National Laboratory	27	2%	411	1%	7,852	2%
Department of Energy - Headquarters	5	0%	83	0%	2,104	1%
Elk River Reactor	43	3%	904	3%	9,792	3%
Fermi National Accelerator Laboratory	25	1%	1,108	4%	11,456	3%
Fernald Integrated Demonstration Site	1	0%	19	0%	1,520	0%
Grand Junction	2	0%	30	0%	300	0%
Hanford Site	364	22%	6,301	23%	67,332	20%
Idaho National Engineering Laboratory	30	2%	368	1%	3,032	1%
Kansas City Plant	48	3%	322	1%	4,268	1%
Lawrence Berkeley	13	1%	237	1%	5,540	2%
Lawrence Livermore National Laboratory	25	1%	396	1%	5,176	2%
Los Alamos National Laboratory	86	5%	1,551	6%	11,972	3%
Mound Plant	2	0%	34	0%	2,090	1%
Multiple DOE Sites	35	2%	480	2%	17,074	5%
National Energy Technology Laboratory	14	1%	308	1%	4,872	1%
Nevada Test Site	81	5%	914	3%	11,772	3%
Non-DOE Sites	42	3%	606	2%	11,454	3%
Oak Ridge Field Office	197	12%	3,386	12%	36,494	11%
Paducah Gaseous Diffusion Plant	53	3%	768	3%	7,408	2%
Pantex Plant	59	4%	1,083	4%	12,284	4%
Portsmouth Gaseous Diffusion Plant	193	12%	3,042	11%	31,368	9%
Princeton Plasma Physics Laboratory	12	1%	331	1%	9,816	3%
Rocky Flats Office	2	0%	45	0%	2,720	1%
Santa Susana Field Laboratory	55	3%	618	2%	7,224	2%
Savannah River Site	100	6%	1,710	6%	13,491	4%
Separations Process Research Unit at Knolls Lab	12	1%	175	1%	1,528	0%
St. Louis Airport Site	7	0%	113	0%	2,942	1%
Stanford Linear Accelerator Center	2	0%	26	0%	208	0%
Thomas Jefferson National Accelerator Facility	4	0%	63	0%	888	0%
Umtra Project Office	1	0%	16	0%	128	0%
Weldon Springs	40	2%	774	3%	9,520	3%
West Valley Demonstration Project	32	2%	492	2%	5,230	2%
Totals	1,678	100%	27,739	100%	343,203	100%

10-Year Training Summary: NIEHS/DOE Nuclear Worker Training Program, 2009-2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of Grantees	8	8	8	8	8	8	8	7	7	7
Courses Completed	2,265	2,188	1,987	1,963	1,797	1,900	1,830	1,927	2,066	1,678
Workers Trained	36,266	35,329	31,238	29,842	27,755	28,334	26,396	28,162	32,202	27,739
Contact Hours	530,271	523,287	405,556	365,083	310,369	311,412	323,316	368,680	389,786	343,203
Dollars Awarded	\$9,510,125	\$9,670,474	\$9,577,000	\$9,599,741	\$8,760,715	\$8,760,685	\$9,543,426	\$8,827,223	\$8,852,400	\$9,425,498
Cost Per Contact Hour	\$17.93	\$18.48	\$23.61	\$26.29	\$28.26	\$28.13	\$29.52	\$23.94	\$22.71	\$27.46

Summary of NIEHS Training at DOE Sites, 1994-2018

Training Year	Total Courses	Total Workers	Total Contact Hours
1994	486	7,107	184,604
1995	1,091	13,566	249,704
1996	1,199	18,642	290,938
1997	1,277	18,394	244,212
1998	983	15,048	217,666
1999	922	14,049	202,997
2000	1,152	15,860	218,087
2001	1,379	18,833	245,436
2002	1,954	25,399	302,723
2003	1,959	23,187	303,633
2004	2,367	29,240	374,957
2005	1,961	25,442	329,840
2006	2,044	26,365	325,533
2007	2,283	34,074	400,491
2008	2,225	33,702	414,746
2009	2,265	36,266	530,271
2010	2,188	35,329	523,287
2011	1,987	31,238	405,556
2012	1,963	29,842	365,083
2013	1,797	27,755	310,369
2014	1,900	28,334	311,412
2015	1,830	26,396	323,316
2016	1,927	28,162	368,680
2017	2,066	32,202	389,786
2018	1,678	27,739	343,203
Totals	42,876	622,153	8,176,138



National Institute of
Environmental Health Sciences
Worker Training Program