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, 2020 – July 31, 2021

In This Report

This report summarizes the activities of the National Institute of Environmental Health Sciences (NIEHS)/Department of Energy (DOE) Nuclear Worker Training Program (hereafter referred to as the NIEHS/DOE Program) and its grantees in the 2021 program year (Sept. 1, 2020 – July 31, 2021), as well as some program updates from Aug. 2021 to Jan. 2022. The training year included the continued efforts to deliver training during COVID-19. Grantee activities reflect the impacts and necessary adjustments for the pandemic.

Cover photo: Photo courtesy of International Brotherhood of Teamsters

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

HAZMAT Technician Training in Milwaukee (Photo courtesy of IAFF)

Program Goal

The goal of the NIEHS/DOE Program is to provide high-quality training to DOE site workers to ensure they are prepared to work safely in hazardous environments, and to support DOE Office of Environmental Management (EM) mission completion. 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. The training courses address complicated and evolving DOE site missions with ongoing and emerging hazards, often including 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, 694,564 workers have received 9,039,640 contact hours of training in 47,960 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 instructing other workers. All training is completed following the NIEHS Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response (HAZWOPER) (Minimum Criteria) document.

Protecting worker health and safety through training delivery has been a priority of the secretary of energy and is a primary goal of EM. As DOE's mission has shifted from weapons production to environmental restoration and other priorities, the site worker is exposed to new operations and hazards. The training offered under the NIEHS/DOE Program supports and integrates with DOE's Integrated Safety Management and DOE safety culture; Title 10 of the Code of Federal Regulations, part 851 (10 CFR 851), the Worker Safety and Health Program; and other initiatives.

Training Participants

NIEHS training is available to all DOE workers at former government weapons sites and nuclear research facilities, including represented and non-represented individuals. In some circumstances, acceptance of training performed before hire improves project mobilization and can reduce hiring costs.

The NIEHS/DOE 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, fire fighters, 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 fenceline communities include American Indian tribes, as discussed in an Activity Highlight in the 2020 NIEHS/DOE Program Annual Report. The Program is investigating how we can further work with underserved communities surrounding DOE sites.

Collaboration with DOE National Organizations and Programs

NIEHS and grantees collaborate with the DOE Energy Facility Contractors Group (EFCOG) and the DOE National Training Center (NTC) Training Reciprocity program. These efforts can reduce duplication of training, improve consistency in core training content, and improve communications with site contractors.

A National Asset in Emergency Response

The NIEHS/DOE Program represents a large pool of trained, certified workers who can respond to accidental or deliberate radiological events, a benefit and a national security asset. Additionally, NIEHS's network has the capacity to deliver training and respond to infectious disease emergencies, weather-related events, and other disasters. NIEHS WTP has developed a mechanism for identifying and mobilizing these pre-trained, experienced workers.

Program Training Data, 2020-2021

Training Summary

For the 2020-2021 program year (Sept. 1, 2020 – Jul. 31, 2021*):

23,095	1,901	280,377	$9,244,023	$32.97
Workers trained	**Courses provided**	**Contact hours delivered**	**Dollars awarded**	**Average cost per contact hour**

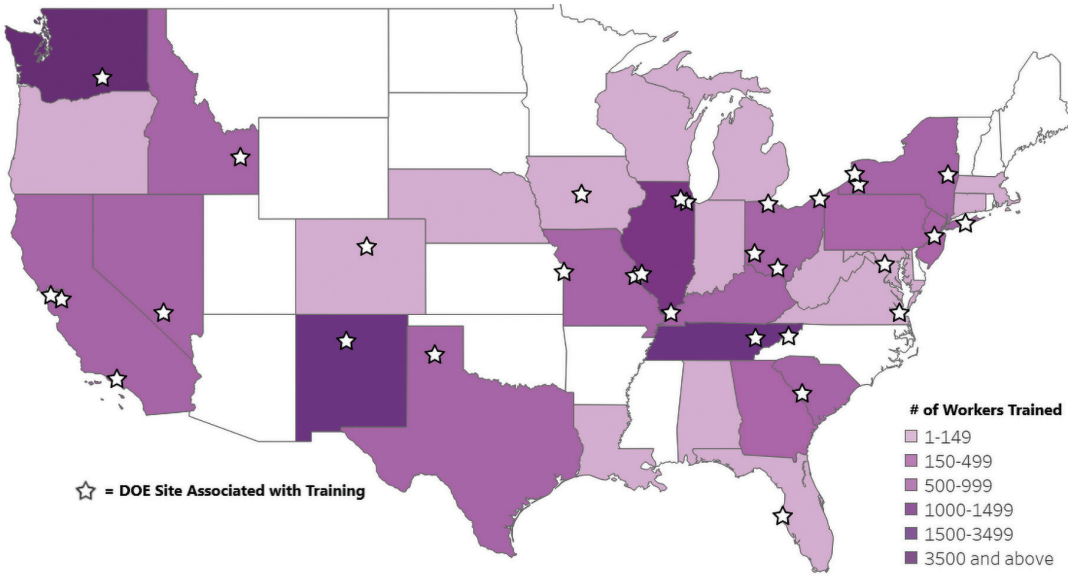
*2021 had an eleven-month grant year due to a shift in project end date by NIEHS

Overall, 2021 training numbers were lower than pre-COVID-19 pandemic years but have increased from 2020. Similarly, the average cost per contact hour is higher compared to pre-pandemic but decreased from 2020. The impacts of COVID-19 and restrictions on training delivery in 2021 are described in the Coronavirus Response section of this report, and the 10-Year Training Summary Table in the Data Tables section of prior year comparisons.

Training Locations

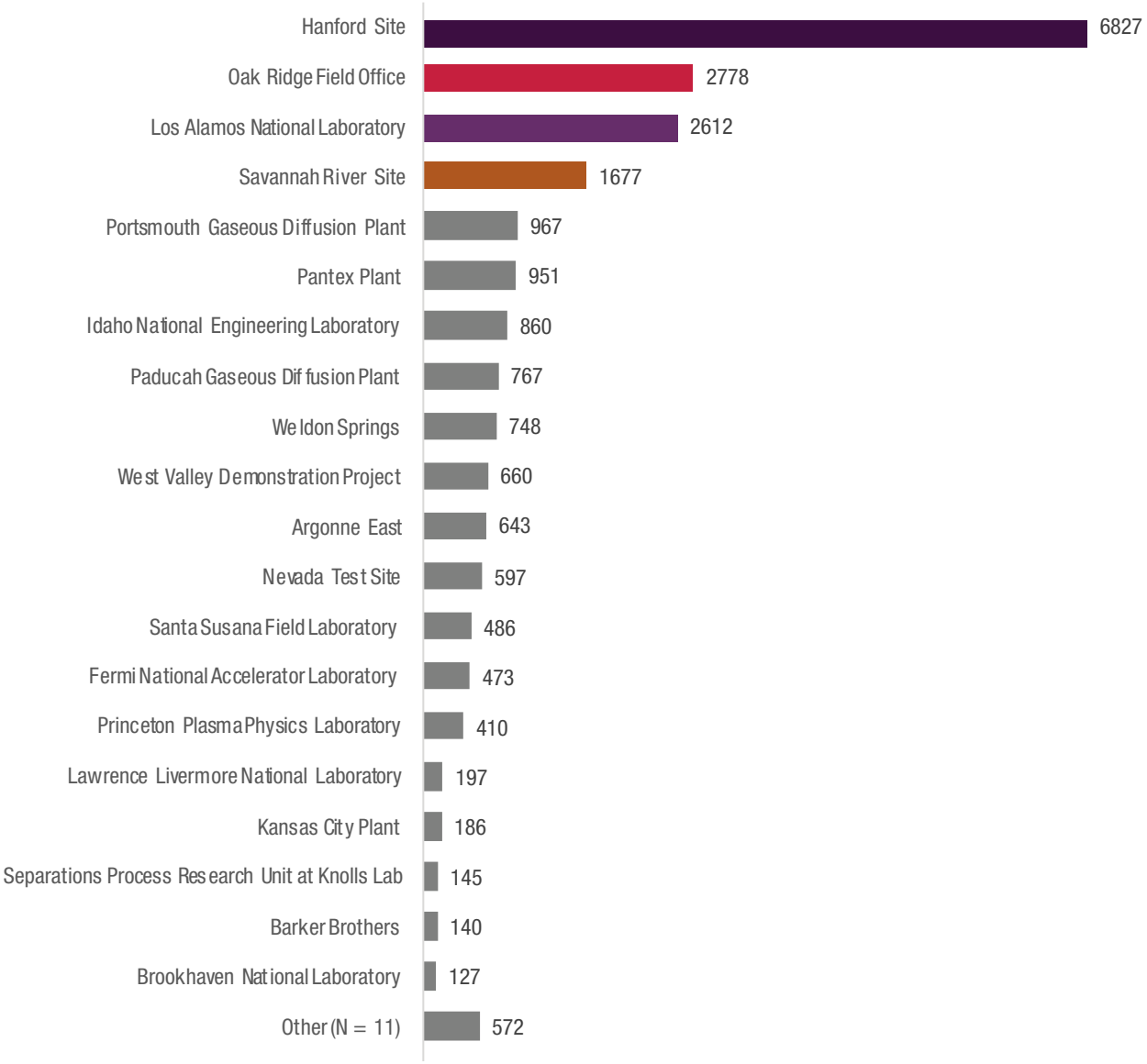
Training was conducted at or around 31 different sites, as shown in the map. The training for many sites, both large and small, demonstrates the national scope of this Program. A full list of DOE sites is available in the Data Tables section of this report.

The map also summarizes the number of DOE 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, Los Alamos, and Savannah River. Overall, grantees trained at or around 31 sites this year. (Sept. 1, 2020 – Jul. 31, 2021)



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 2020-2021 program year.

Top Courses, by Workers Trained, by Site

Hanford Site	Oak Ridge Field Office	Los Alamos National Laboratory	Savannah River
3,799 Site Worker Refresher	1,183 Site Worker Refresher	770 Site Worker Refresher	892 Emergency Response for Specific Hazards
2,281 Respiratory Protection	256 Basic Superfund Site Worker	407 Hazard Communication	189 Asbestos Abatement Supervisor Refresher
326 Basic Superfund Site Worker	253 Asbestos Abatement Worker Refresher	301 Hazardous Waste Operations	125 Asbestos Operations and Maintenance Refresher
138 Radiological Protection Worker/Basic	224 RCRA TSD Site Worker	277 Confined Space	113 Asbestos Abatement Worker Refresher

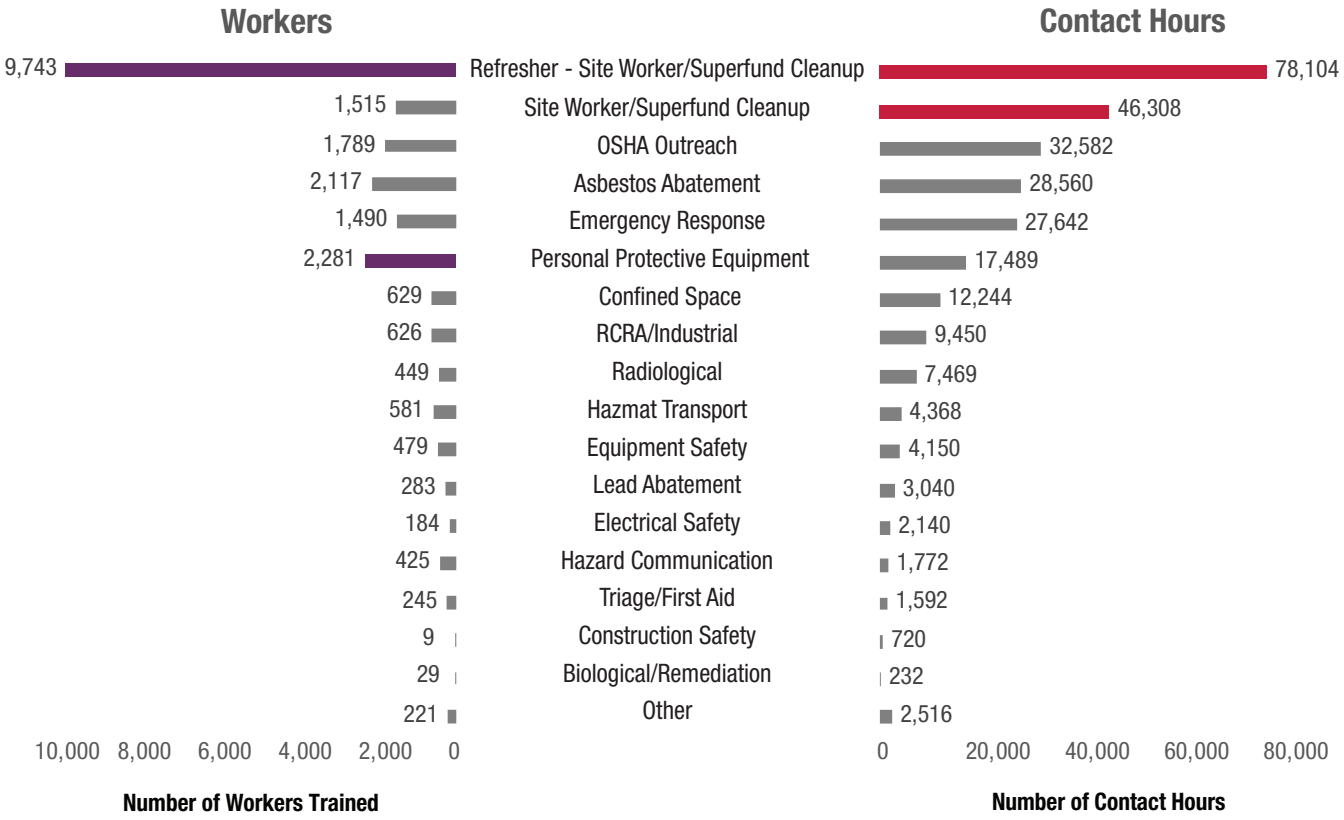
Training Course Categories

The figure below shows the numbers of workers trained and total contact hours for various courses during the 2020-2021 program year. These courses are critical to ensure 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 23,095 **workers trained**, the highest numbers of workers received training in **Refresher for Site Worker** and **Personal Protective Equipment** (PPE) courses. The PPE category included only respiratory protection classes, which all occurred at the Hanford Site. The large amount of respiratory training at the Hanford Site was due to a variety of factors, including the hiring of new workers and a new respiratory requirement from a contractor.

Of the 280,377 **contact hours**, grantees delivered the highest numbers of contact hours through **Refresher for Site Worker** and **Site Worker** courses.

(Sept. 1, 2020 – July 31, 2021)



USW TMC OSHA 503 course for the Yakama (Image courtesy of USW TMC)

Activity Highlight: Developing New Trainers and Keeping Training Skills Fresh

It is a requirement of the NIEHS Minimum Criteria that funded programs assess instructors' competency based on eight criteria, including an annual evaluation. All DOE grantees deliver courses and host meetings to develop new trainers and refresh or provide new skills for existing trainers. It can also be a way for trainers and grant leadership to share challenges and successes encountered and work collaboratively. While it is always important to maintain quality trainers, it has been critical during this second year of the pandemic, due to higher levels of retirements, delays of in-person training opportunities, and less accessibility of worker-trainers generally. Causes include travel restrictions, workloads, and understaffing, etc.

Below are highlights of how some grantees, by working with their existing trainers or implementing activities to qualify new trainers, used trainer development activities this past year to maintain full program capabilities and enhance skills.

United Steelworkers Tony Mazzocchi Center (USW TMC)

In April 2021 an annual Trainer Enhancement Exchange (TEE) was held on a synchronous online platform that allowed sixty worker-trainers to come together for a three-day event, 19 from DOE sites. This event included a Trainers Showcase where worker-trainers presented different training techniques as well as information on finding trusted health and safety information, evaluation of and managing difficult classroom situations, disaster preparedness, and inequities in the workplace.

TMC's Lead DOE Site Trainer Program includes a worker-trainer from each site that uses TMC training and supports them in taking on a more supportive role. The Program utilizes worker-trainers to help in evaluation, outreach, and reporting. Worker-trainers meet quarterly to stay up to date on grant requirements and share lessons learned.

Additionally, TMC has hosted DOE-wide lead trainer meetings and site-specific trainer enhancement meetings during the pandemic. This year, information and best practices were shared on in-person training and changing health protocols. TMC also

hosted two short skills enhancement trainings; one on air monitoring and understanding chemical exposures, the second on understanding DOE's 10 C.F.R. 851 rule, Worker Safety and Health Program.

Near the Hanford site, TMC is building a trainer cadre within American Indian tribal groups. In January and February of 2021, the TMC initiated a series of planning sessions to build the Occupational Safety and Health Administration (OSHA) Outreach authorizations. Sessions with the Yakama Nation led to several tribal members completing an OSHA 503 class. The purpose of the class is to recertify those members as active General Industry Trainers. Four members have since been reauthorized by the region 10 OSHA Training Institute.

In addition to bolstering the tribe's General Industry training capacities, the TMC and Yakama Nation partnered in January 2021 to plan a two-week course (OSHA 510 & 500) with the aim of creating a corps of OSHA trainers in construction.

LIUNA Training

One of the hallmarks of LIUNA Training's success over the years is their abiding commitment to and support of their instructors. Over the past two years, LIUNA Training developed an innovative curriculum delivery system. This system provides instructors with immediate access to up-to-date and relevant training materials and provides greater flexibility for in-person or virtual training. Training is modified to suit the needs of learners based on various factors including job specifications, geographic considerations, or regulatory issues.

LIUNA Training held several intensive training events to present the new system to training fund officials and to orient instructors and administrative staff to the functionality of this powerful instructional tool. The training events gave Training Directors, administrative staff members, and instructors a review of system implementation and components, examples of the training that would be offered to instructors, an orientation to the system, and how to use it in the classroom.

LIUNA Training also offered a testimonial from one of their instructors

"As an environmental Instructor and subject matter expert in Oregon and Southern Idaho, I teach many of the courses…at our Idaho Falls facility. In addition to being a LIUNA Certified Instructor, my experience working at the Idaho National Laboratory (INL) gives me an even sharper edge and significant insight into the unique demands and requirements of site safety, training requirements, and certifications needed by workers at the INL site.

With the support of the grant, we offer courses such as OSHA 10 & 30, First Aid/CPR/AED, Confined Space, Fall Protection, Hazardous Waste Worker, Hazard Communication, Aerial Lift and Forklift, Hoisting & Rigging, Respiratory Protection, Asbestos Abatement Worker, and other environmental protection and health and safety courses.

At the conclusion of every class, many of the participants express their appreciation for the opportunity to obtain in-depth knowledge and skills training that can immediately be applied on the jobsite.

Participants remark that obtaining certifications helps to increase their confidence and improve their performance and the ability to work safely and effectively, making them more successful, more productive, and safer on the job after participating in the training.

This grant program allows us to support the workforce in our area, fosters a sense of accomplishment, and helps to build and sustain the community at large due to the workers success in the classroom and on the job because of this grant-funded training."

International Brotherhood of Teamsters (IBT)

IBT conducted several instructor development programs (IDPs) this year, conducted virtually April 5-9, 2021, and May 3-7, 2021, respectively. All instructors from IBT training centers that receive DOE funding were required to participate in the IDPs as a qualification of continuing to serve as instructors. Additionally, IBT conducted their annual DOE HAMMER IDP virtually from July 19-23, 2021.

IBT also provided the following Train-the-Trainer courses to continue building skills for the transition to teaching classes on an online platform:

- Zoom/Moodle Learning Management System.
- COVID-19.
- 40-hour HAZWOPER.
- 8-hour HAZWOPER Refresher.
- 8-hour Transportation Awareness.
- OSHA 10 Construction.
- OSHA 10 General Industry.

IBT online HAZWOPER course demonstrating fall protection (Photo courtesy of IBT)

Ongoing, New, and Upcoming Initiatives

Photo courtesy of IAFF

NIEHS Program Leadership and Activities

NIEHS WTP staff engage in ongoing work with DOE partners. During the 2019-2020 year, this included:

- **Briefings and Update Meetings with EM:**
  - Nov. 2020, NIEHS met with EM to provide COVID-19 and general updates.
  - June – Oct. 2021, Regular check-in meetings to review the NIEHS/DOE Partnership Communication Plan and other matters supporting the Memorandum of Understanding.
- **Aug. 2021, Annual Program Briefing with Grantees.**
- **Strategic Meetings with Partners:**
  - Multiple meetings were held with Los Alamos National Laboratory to discuss status updates and future needs for grantee training.
  - Apr. 2020, Sharon Beard, Demia Wright, and contractor Timothy Fields met with DOE's Shalanda Baker and Melissa Downing to discuss possibilities for connecting DOE Environmental Justice activities to the NIEHS Environmental Career Worker Training Program and the NIEHS/DOE program fenceline training.

- **Conferences, Workshops, and Webinars:**
  - **Visioning Workshop, Sept. 2020:** NIEHS held a visioning workshop for the next five-years of the overall NIEHS WTP, which included visioning for the DOE Program. Invited speakers for the DOE portion were Rochelle Zimmerman from DOE EM; Shayne Eyre, co-lead of the EFCOG Training Working Group; and Patricia Aldridge, ANR Group, Inc. at HAMMER Volpentest Training Center.
  - **EFCOG Training Working Group meeting, Nov./Dec. 2020:** NIEHS and the Labor Training Working Group (LTWG) gave an update on training available under the NIEHS/DOE Program and shared NIEHS COVID-19 response tools.
  - **Industrial Hygiene Meeting, June 2020:** NIEHS presentation at the DOE and DOE Contractor Industrial Hygiene Meeting. Sharon Beard, Demia Wright, and Ted Giltz provided an overview of the NIEHS/DOE Program and discussed training opportunities for DOE sites.
  - **Grantee presentation:** Staff from CPWR – The Center for Construction Research and Training (CPWR) presented as part of the DOE Office of Worker Safety and Health Policy (AU-11) Worker Safety and Health WebEx series on CPWR's Exposure Control Database. Nearly 200 people participated in the presentation. The presentation is available by AU-11 as a valuable resource for the entire DOE Safety and Industrial Hygiene community.

Additionally, since the end of the program year, NIEHS has done the following with DOE partners:

- **Office of Environment, Health, Safety & Security (EHSS) Meeting:** NIEHS WTP met with Kevin Dressman and Jim Dillard from AU Office of Health and Safety to provide an overview of the NIEHS/DOE Program, discuss training opportunities for DOE sites, and discuss current health and safety challenges for AU.
- **HAMMER Federal Training Center Steering Committee Meeting:** Sharon Beard attended the HAMMER Steering Committee meeting on Oct. 28 as a member of the committee.
- **Safety Culture Improvement Panel (SCIP) Meeting:** NIEHS grantees CPWR and the International Association of Firefighters (IAFF) presented to SCIP during the Jan. 2022 meeting. CPWR and IAFF described their safety culture curricula, which is available to be delivered through grant-funded training.
- **Idaho Environmental Coalition (IEC) call:** Ted Giltz spoke with a contact for Idaho National Laboratory's (INL) new contractor IEC in Jan. 2022 to discuss grantee training capabilities and continuation of grantee National Fire Protection Association (NFPA) 70e training at INL.
- **Los Alamos National Laboratory (LANL):** In addition to maintaining and adjusting support to historical training delivery in response to COVID-19, LANL requested delivery support for five additional courses in 2022. Ted Giltz worked with stakeholders to understand LANL desired support and initiate conversations with appropriate grantee leadership in 2021. IBT will be delivering crane training and other grantees will be delivering compressed gas bottle training, ladder safety, and Department of Transportation (DOT) shipper training. LANL Institutional Training is coordinating delivery of these courses in 2022.

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

Delivering Training during the COVID-19 Pandemic

The 2020-2021 program year took place in the midst of the COVID-19 pandemic. While training delivery was not impacted as much as during shut-down of DOE sites across the country in March 2020, there were still many implications on training. The pandemic also brought new training methods and lessons learned.

NIEHS introduced a new training delivery method question to their data collection for the 2020-2021 Program year. As shown below, most training courses occurred in-person (76%). Another 16% were delivered as synchronous online only. Therefore, almost all courses were instructor led, whether in-person or virtual.

76.4%
In-person only

15.8%
Synchronous online only

6.9%
Asynchronous online only

The remaining 0.8% of courses used a hybrid format.

In-person training did bring challenges, as described by grantees:

- Decreased class sizes were needed to have less crowded classrooms, leading to increased class delivery to serve the same number of workers.
- Inability to hold some classes due to pandemic restrictions.
- Holding cross-site trainer enhancement sessions virtually.

Examples provided below show how the pandemic has continued to affect grantee training or how grantees have responded with meeting site needs. Course delivery during the pandemic has helped workers who need immediate training and ensured the vital operations at sites are conducted in a safe manner.

All COVID-19 resources developed by NIEHS are available on the COVID-19 Resource page and the COVID-19 Webinars and Presentations page.

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

The International Association of Operating Engineers (IUOE) integrated mental health as “special emphasis” training into various training courses. Content related to the COVID-19 pandemic was included when peer training resumed in Fall 2020 and the IUOE NTF conducted a series of three webinars during April and May 2021 on the topic. This emphasis on mental health training was for peer instructors and included managing the symptoms of post-traumatic stress and availability of resources for stress and anxiety, but other participants such as business managers and training administrators also joined. The three webinars were:

- Using the NIEHS COVID-19 Response Training Tool for Trainers.
- Keeping our Members & Families Healthy from Stress and Anxiety.
- The New Normal for Essential Workers and How to Deal with COVID-19 Crisis Issues.

International Chemical Workers Union Council (ICWUC)

After initial COVID-19 shutdowns, the sites wanted to conduct training as rapidly as possible. They cooperated with management to build robust safety protocols to ensure the safety of the trainers and the participants during classes. Their safety protocols included:

- ICWUC no longer sets up classes with books; each participant has a fully charged iPad to use.
- Reduced class size from an average of 35 to 20 per class to maintain six-foot distance between participants.
- If participants refuse to follow guidelines, they are denied entry to the training center. This supports safety established during the closing of classes and can be adapted as necessary.

ICWUC did note more flexibility by employers to release trainers to deliver classes. This was likely due to pressure from the backlog in training needs paired with a reduction in trainers overall because of attrition from retirements during the past year and limited ability to conduct Train-the-Trainer programs.

ICWUC DOE HAMMER course using safety protocols for COVID-19 (Photo courtesy of ICWUC)

CPWR

During this grant period and due to the COVID-19 pandemic, CPWR contracted with Dr. Sue Ann Sarpy and Associates to evaluate the effectiveness of the use of distance learning training. The study was designed to compare the effectiveness of a worker health and safety training course delivered in a traditional face-to-face format with the same course delivered in a synchronous online format.

According to the report, "Results of analyses revealed that participants in the face-to-face courses reported, on average, statistically significantly higher ratings of: (1) Instructor Effectiveness; (2) Teaching/Learning Methods; and (3) Overall Effectiveness in developing the knowledge, skills, and confidence to work safely. However, it should be noted that while face-to-face delivery was rated more highly, respondents indicated that, on average, both delivery formats were highly effective. Importantly, no significant differences in specific safety-related knowledge and skills were reported by participants in the face-to-face versus distance learning formats, suggesting that high levels of learning occurred regardless of format."

For a copy of the full report click on the following link: https://www.cpwr.com/wp-content/uploads/RR2021-OHST-distance-learning-COVID.pdf

CPWR also received the following feedback during the year:

> *"...Instructors did a fantastic job with course material implementing COVID required changes to the method of delivery. I cannot wait to return to the training that helps retain and apply the material provided." (Trainee from Washington)*

> *"COVID-19 conditions make teaching a course tough. Instructors did well with it." (Trainee from Washington)*

National Partnership for Environmental Training and Education (PETE)/Community College Consortium for Health and Safety Training (CCCHST)

PETE regularly offers a hybrid format for the 40-hour HAZWOPER course for Oak Ridge contractor UCOR through their training partner Roane State Community College. The first 24 hours of content are online.

As part of their evaluation, PETE receives feedback from employers on the training. Regarding this online training, one employer stated:

> *"With the onset of the COVID-19 Pandemic, the online training was more appropriate and complied with State and Local Health Department Guidelines. This method of online training also helped employees who were not familiar with computers to upgrade their technology skills as they progressed through the HAZWOPER online courses."*

Santa Fe Community College offered 62 online instructor-led classes serving 1,158 workers and 4,365 contact hours at Los Alamos National Laboratory. Across seven randomized sets of evaluation instruments for the online courses, the results consistently showed high satisfaction with the course content and instructor. Under COVID-19, the college was also able to offer 18 face-to-face courses for 87 students.

Reciprocity through the National Training Center (NTC)

Several grantees have been certified for reciprocity for multiple training courses by NTC in accordance with the DOE policy on health and safety training reciprocity (DOE P 364.1). NIEHS is working with grantees and the NTC to complete DOE reciprocity course evaluations and expand use by DOE contractors.

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

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

The current organizations funded by the NIEHS/DOE Program that have reciprocity certifications are:

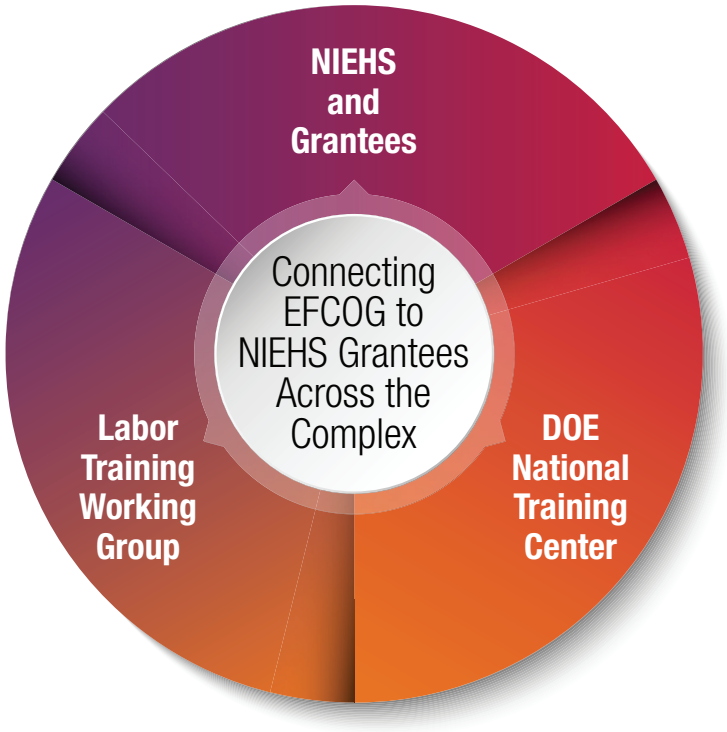
- CPWR: HAZWOPER, Confined Space Entry.
  - CPWR Consortium Members:
    - National Ironworkers and Employers Apprenticeship Training and Journeyman Upgrading Fund: HAZWOPER, Fire Watch, Scaffold Safety.

- United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada: Confined Space Construction.
- Electrical Training Alliance/International Brotherhood of Electrical Workers (IBEW): National Fire Protection Association (NFPA) 70E Standard for Electrical Safety, NFPA 70 Code Update.

- IUOE: HAZWOPER, Bloodborne Pathogens, Fall Hazard Recognition and Prevention, HAZCOM.
- Laborers' International Union of North America (LIUNA) Training and Education Fund: HAZWOPER, Radiological Worker I and II, Hazard Communication (HAZCOM), Asbestos Awareness, Excavation/Trenching Awareness, Basic Crane and Basic Rigging Safety, Fire Watch, Scaffold Safety for Inspectors, Silica Awareness, Heat Stress Prevention and First Aid, Lead Worker Initial, Mobile Crane Hazard Awareness, Portable Metal Ladders for Construction, Rad Worker I&II, Construction Occupational Noise Awareness, and Apprenticeship Certification.
- USW TMC for Health, Safety, and Environmental Education: HAZWOPER and RCT Academics. USW is working with the NTC to update their Resource Conservation and Recovery Act (RCRA) Initial course for reciprocity certification.

National and Site-Specific Collaborations with the DOE Site Contractor Community

The NIEHS/DOE Program continued their collaborations with the contractor community. The desired goal is to develop relationships that facilitate training delivery by grantees at no or reduced cost to the sponsoring contractor, which could reduce redundancy and contractor costs and fill contractor training gaps.



Expanding training delivery at DOE sites through partnership and collaboration.

DOE Liaison

To better leverage existing training capacity and educate new DOE contractors, NIEHS established a part-time liaison with extensive DOE experience, Ted Giltz. Giltz started in the position in October 2018 and has continued into 2022 to assist with many of the initiatives described in this report. Glitz is leading discussions with the EFCOG Training Working Group and NTC to better understand contractor needs and educate them on grantee capabilities.

Grantee Training for Contractor Employees

NIEHS WTP continues to engage in communicating our training capabilities and availability to DOE staff and contractors at sites. DOE and contractor leadership are often unaware of the skills and services offered through grant-funded training, due to DOE personnel changes, attrition of both DOE and contractor leadership, and routine promotion and changes in DOE contractor organizations. The DOE liaison has increased participation with the EFCOG Training Working Group to improve their knowledge of grantee capabilities.

Collaboration and partnership with the DOE contractor community is being pursued through several efforts.

- Development of materials that help explain how DOE sites can partner with NIEHS grantees for training delivery:
  - NIEHS/DOE partnership fact sheet, providing information for sites and contractors to partner with grantees for training at DOE sites.
  - NIEHS/DOE partnership process and roles and responsibilities document, to provide guidance and facilitate discussions with new or ongoing NIEHS grantee/DOE site contractor partnerships.
- Approaching sites already using NIEHS/DOE Program grantees for training to maintain and expand training support as their contractor organizations undergo continued fiscal and attrition pressure.
- NIEHS staff, grantees, and the LTWG participation in EFCOG Training Working Group meetings, including EFCOG COVID-19 Lessons Learned and Monthly Learning Sessions webinars, while continuing to educate EFCOG members on available training options.

Benefits of using NIEHS/DOE Program grant training include:

- Using worker-trainers, who are highly qualified instructors that deliver the training material as a peer and as an experienced and skilled employee in their specific trade.
- Assisting with issues of staff attrition, particularly smaller contract organizations. NIEHS/DOE Program grantees offer the benefits of providing quality training materials, staff, and in some cases, safety, and health subject matter experts (SMEs), including mobile training, to organizations that do not have full time training staff. Many organizations no longer have the depth and competencies in topics such as specialty electrical training topics, scaffold awareness, fire system maintenance, condensate-induced water hammer, crane/rigging, and trenching. However, more effective safety training is provided by instructors who are experts and who have worked in the field on the topic.
- Providing specialty training by expert trainers from around the country through grantee mobile training support, particularly once COVID-19 travel restrictions are lifted.
- Expanding training access to a workforce that has already completed fundamental safety training in many areas through improved contractor acceptance of certified reciprocity and grantee safety and health training.
- Assisting with DOE initiatives and programs such as safety culture.
- Avoiding retraining and other project mobilization costs through reciprocity certifications.

The following examples show ongoing work with site contractors to provide health and safety training using grantee capabilities.

- **Los Alamos National Laboratory (LANL):** CPWR worked with the LANL training department to provide virtual and in-person Hazardous Waste Refresher training. The virtual classes used an interactive lesson plan that provides students the opportunity to engage with their instructor and content. In-person training at the site follows the comprehensive COVID-19 protocols implemented by the site to protect both the students and trainers. Both courses are helping LANL train workers who need immediate training to ensure the vital operations at the site are conducted in a safe manner.
- **Portsmouth Gaseous Diffusion Plant:** The USW is continuing their work to provide Radiological Control Technical (RCT) Training to job seekers around the Portsmouth site. This training program is in collaboration with USW Union Local 1-689; the TMC for Health, Safety, and Environmental Education; The Village of Piketon; and the Pike County Career Technology Center. The course helps fill a shortage of RCTs to do cleanup work at the Portsmouth site. The training opportunity was covered by the Pike County News Watchmen and the early training activities were highlighted in the NIEHS Environmental Factor.
- **Paducah Gaseous Diffusion Plant:** The USW will do the same kind of community training program for the Paducah community starting in spring 2022, beginning with RCT training, as highlighted in The Paducah Sun. Additionally, USW TMC has worked with Four Rivers Nuclear Partnership, West Kentucky Community and Technical College, and local and state civic leaders to build a RCRA training program, based on needs by site contractors. USW TMC developed a curriculum, built trainer capacity, and submitted the curriculum for reciprocity with the NTC.
- **Oak Ridge National Laboratory (ORNL):** All grantees support training needs for Oak Ridge contractors or the laboratory. Two examples this year are:
    - The International Chemical Workers Union Council (ICWUC) continues to work closely with the HAZWOPER program administrator at Consolidated Nuclear Security (CNS) to schedule classes and meet CNS needs, including adding three 40-hour HAZWOPER courses with hands-on components for 23 participants and 920 training hours, with participants from ORNL, UCOR, the Tennessee Department of Conservation and Environment, and the immediate community. ICWUC met all last-minute requests for training and equipment to support the facility's restart of programs. These requests were far more frequent given the smaller class sizes, the rescheduling of annual training from pandemic postponements, and the need to train new hires due to attrition during the pandemic.
    - In a November 2019 CPWR webinar, UCOR representative, Travis Watson discussed how their company has utilized and built off CPWR resources, training programs, and campaigns in order to improve the safety and health of their workers.

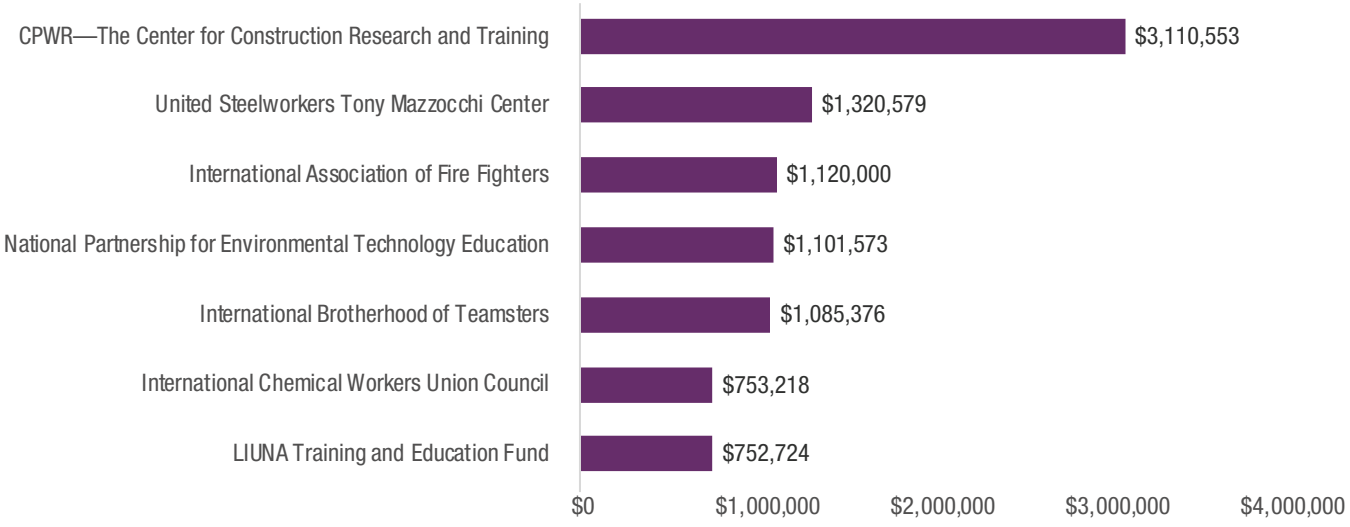
As NIEHS WTP has engaged in these interactions and partnerships, each site has brought unique situations and challenges, and the lessons learned are applied as NIEHS moves forward. These lessons learned have allowed the refinement of the process to begin conversations with a site (see figure below).

Figure shows the process used to connect grantees to DOE site contractor training needs.

Program Funding and Grantees

Funding

Through an interagency agreement, NIEHS WTP provided $9,244,023 in funding to NIEHS/DOE Program grantees. No supplements were awarded during the 2020-2021 program year. Funding was from fiscal year 2021 DOE appropriations. Seven grantees were funded to implement training during the 2020-2021 program year.



Program Grantees (Sept. 2020 – July 2025)

CPWR - The Center for Construction Research and Training (CPWR)

CPWR is sponsored by North America's Building Trades Unions, which represents 14 international and 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 fire fighters and paramedics in more than 3,200 affiliates. Its members protect more than 85% of the population in communities throughout the U.S. 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.

‡ IOUE participated in the program this year through a no-cost extension.

Laborers International Union of North American Training and Education Fund (LIUNA Training)

LIUNA Training services the training needs of hundreds of LIUNA local unions and thousands of construction-related contractors by providing relevant and necessary training to LIUNA members and apprentices. Each year thousands of LIUNA members and apprentices receive training at one of the state-of-the-art training facilities that comprise the Laborers' training network.

National Partnership for Environmental Training and Education (PETE)/Community College Consortium for Health and Safety Training (CCCHST)

CCCHST is administered by PETE. There are more than 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. 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, the training body of the Steelworkers Charitable and Educational Organization, 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.

Activity Highlight: Examples of Use of Skills and Utility of Courses by Training Participants and DOE Site Contractors

CPWR

CPWR provides training for building trades union members across the DOE complex. The following comments were received after training.

> *"Teachers were great, fun and encouraging people. Took the material very seriously to equip us for the hazards we face every day. They were able to package some of the dryer material in a digestible way that kept us involved." (Hazardous Waste Worker 40-hour. Trainee from Washington)*
>
> *"The interaction in this course - instructor to student & within our groups was greater than ANY Hanford training I have had. Mixing planners, engineers and 1st responders was clever and got even the quiet folks engaged." (RCRA TSD Site Worker 24-hour. Trainee from Washington)*

IAFF

Under the NIEHS/DOE Program grant, IAFF delivers training to first responder agencies located within a perimeter around DOE sites who could be called upon in case of a disaster or emergency at a site. The following comments were received after training:

> *"The most valuable part of the course was the ability of the instructors to take a very complicated subject and make it understandable at a basic level. The instructors did a great job explaining all aspects of the [HazMat] technician class."*
>
> *"The ability to practice identifying a placard with the UN (United Nations) number and going through the entire process of identifying, isolating, picking the correct PPE, and mitigating that hazard during the final scenario was extremely beneficial."*

IBT

IBT delivers training through partnerships with major trucking and rail unions. Below are comments from 8-hour HAZWOPER classes, when asked what the most important thing was they learned from the course.

> *"How to be safer around all types of jobsites. I feel more confident about returning to work and being around materials that I thought I knew about. I now have more confidence and information about the resources that are at my disposal."*
>
> *"Be safer in workplace, identifying hazards, learned a great deal about radiation and atoms. Also was excited to know more about Oak Ridge and its history."*

ICWUC

ICWUC continues to implement evaluation methods that use site-specific tests developed by the site trainers, with technical support provided by ICWUC staff. The trainers identify learning needs at the beginning of the program and measure fundamental skills related to each module. ICWUC has worked closely with DOE to develop tests that are consistent with DOE regulations and orders. ICWUC repeatedly shows an increase in test scores from pre-test to post-test.

- Looking at a single 40-hour HAZWOPER course, testing at Hanford had an average increase of 24% (from 74% to 98%), with example questions including chemical protective clothing and levels of protection (26%), confined space (49%), and decontamination (40%).
- Looking at a single 40-hour HAZWOPER course, testing at Oak Ridge had an average increase of 25% (from 72% to 97%), with example questions including chemical protective clothing and levels of protection (42%), respirators (27%), and labels and placards (38%).

LIUNA Training

LIUNA Training and Education Fund provides training for local unions and construction-related contractors and apprentices. The following course evaluation information was received:

- 99% of respondents strongly agree or agree that the course materials were useful and easy to understand and positively responded to level of difficulty.
- 95% believe they understand the materials well enough to explain the information to others.
- 98% of all participants believe the training will help make their work practices and life safer and 94% agree the course made them aware of safety issues they hadn't considered before the training.

The frequently identified items that participants liked about the training are noted below:

- Well informed instructors, kept training interesting.
- Focus on safety was outstanding.
- Practical application to job will be beneficial.
- Hands-on training made the subject easy to understand.

PETE/CCCHST

Examples of the feedback are as follows for key sites:

Amarillo College, supporting the Pantex Site

A total of nineteen employer follow-up evaluations for HAZWOPER Refreshers were completed and received. Based on the responses to the questions below, the employers view the training their employees received to have been of a significant benefit to them and also benefited the overall workplace. A five-point rating scale was used, with a 5 meaning Doesn't Apply, 4 meaning Strongly Agree, 3 meaning Agree, 2 meaning Disagree, and 1 meaning Strongly Disagree.

When asked to what extent their employees' HAZWOPER training **benefit the workers**:

- 89% Agreed or Strongly Agreed with this statement: The training helped employees recognize physical hazards on the job; for chemical hazards, 79% Agreed or Strongly Agreed.
- 84% Agree or Strongly Agreed Helped employees during response operations.

When asked to what extent did their employees' HAZWOPER training **benefit the supervisors**:

- 89% Agreed or Strongly Agreed with this statement: Helped employees recognize and then prevent physical hazards and chemical hazards on the job in order to protect themselves.

When asked to what extent did their employees' HAZWOPER training **benefit the overall workplace**:

- 89% Agreed or Strongly Agreed with this statement: Helped create a safer workplace through employee recognition of physical hazards and chemical hazards.

Roane State Community College, supporting the Oak Ridge Site

University of Tennessee Institute for a Secure and Sustainable Environment evaluates the training provided by Roane State for the Oak Ridge site under PETE/CCCHST. Site prep, safe demolition, and remediation is currently in process across three facilities under UCOR.

In this evaluation, they focus on employer feedback. The following examples were received from employers on how the skills employees learned in training are needed for these active job duties:

- Some sites occasionally need employees to dress out.
- Digging out the earth and filling containers during a DOE cleanup operation.
- Taking precautions during a move from K-25 to Y-12 facility; training was required before they could enter a building.
- PPE is utilized in areas of confined space with special precautions in areas containing asbestos.
- Processing transuranic debris and sludge, constructing a Mercury Treatment Facility, and constructing the Environmental Management Disposal Facility.

USW TMC

United Steelworkers TMC trains current and potential workers across the DOE complex. The following examples were provided about how training helped with specific safety situations in the workplace:

- A Paducah site trainer reported that the collegial atmosphere created in the Refresher classes enabled participants to discuss issues they had previously not reported. A recent example is a woman who is petite and was using duct tape to adjust the sizing of the disposable coveralls and shoe covers she was issued. The makeshift alterations were not adequate and were creating a tripping hazard for her. When the issue was raised in class, the worker trainer brought it to the proper officials at the plant and they have located better-fitting PPE for her.
- Another lead trainer expressed pride in the fact that whenever the site's full-time safety and health representative wants additional information concerning HAZWOPER, he is consulted. This demonstrates how the TMC worker trainers serve as SMEs in addition to performing their classroom duties.

ICWUC HAZWOPER course using plume tracking software at HAMMER (Photo courtesy of ICWUC)

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/DOE Program 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 [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 DOE health and safety meetings in the Calendar of Events section.

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 program grantees.

Partnership Activities

To continue improving NIEHS's partnership with EM and EFCOG, the Clearinghouse participated in several virtual leadership meetings and check-in calls. These meetings were used to share DOE grantee updates, information regarding how the agencies were each handling training during COVID-19, and lessons learned.

- NIEHS/DOE grantee update meeting (November 5, 2020).
- NIEHS/DOE EM check-in meeting (November 20, 2021).
- NIEHS/DOE EM annual briefing (August 18, 2021).

In addition, there was a Labor Training Work Group meeting held September 15-16, 2020, that the Clearinghouse Director, Deborah Weinstock participated in. The Clearinghouse also worked with leadership of the EFCOG training group to discuss the possibility of standing up a joint EFCOG webpage on the Clearinghouse webpage.

New Materials

The Clearinghouse continues to work with NIEHS WTP program staff to develop reports, fact sheets, and other communication products to support the NIEHS/DOE Nuclear Worker Training Program. This includes the following:

- 2019-2020 NIEHS/DOE Nuclear Worker Training Program Annual Report: The Clearinghouse published a report to showcase the program's accomplishments and highlights for the 2019-2020 training year. The report highlights training data (e.g., workers trained, top sites, top course categories), along with new and upcoming initiatives. Clearinghouse staff also generated a map for the report.
- NIEHS/DOE Nuclear Worker Training Program fact sheet: The Clearinghouse worked with Demia Wright to update the fact sheet with 2019-2020 training data. From September 1, 2019 – August 31, 2020, NIEHS/DOE grantees trained 19,925 workers at or around 31 sites. The fact sheet also included recent collaborations and advancements, including the grantees' achieving certification for reciprocity for multiple training courses by the DOE National Training Center.
- Partnership fact sheet and process document for contractors: The Clearinghouse worked with Demia Wright and NIEHS Contractor and DOE Liaison Ted Giltz to develop the partnership fact sheet and partnership process and roles and responsibilities document described previously. These documents were created to facilitate more engagement with DOE contractors and provide information on how DOE sites can partner with NIEHS-funded training organizations for course delivery.

Background of the NIEHS/DOE Program Partnership

NIEHS 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 DOE 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.

Annual Funding

Every year, Congress directs the transfer of $10 million from DOE to the NIEHS hazardous waste worker training program in the Energy and Water Development and Related Agencies Appropriations language.

NIEHS/DOE Agreement

To implement this, DOE entered into an Interagency 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. A memorandum of understanding supports ongoing communication and requirements between the federal partners.

OSHA Regulations and DOE Directives

To provide protection for 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 DOE directives 10 CFR 850 and 851 to meet the requirements of OSHA regulation 20 CFR 1910.120 and the Environmental Protection Agency HAZWOPER training requirements (40 CFR 300.150).

Additionally, NIEHS and grantees support the implementation of DOE's 10 C.F.R. 851: Worker Safety and Health Program and Integrated Safety Management as described in DOE P 450.4, Safety Management System Policy. These policies provide a framework for health and safety training for grantees and are included in curriculum where appropriate. Lastly, NIEHS/DOE grantees CPWR and IAFF are active supporters of training courses developed to support the Safety Culture Improvement Panel annual work plan.

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

Data Tables

Total Training by NIEHS Grantee, Sept. 1, 2020 – July 31, 2021

Grantee	Courses Completed	Workers Trained	Contact Hours
CPWR - The Center for Construction Research and Training	600	7,417	96,547
International Association of Fire Fighters	26	524	32,320
International Brotherhood of Teamsters	175	2,553	22,978
International Chemical Workers Union Council	152	1,879	18,725
International Union of Operating Engineers (IUOE)*	150	2,902	26,624
Laborers' International Union of North America	204	1,701	32,631
Partnership for Environmental Technology Education	362	3,597	24,002
United Steelworkers Tony Mazzocchi Center	232	2,523	26,750
Totals:	**1,901**	**23,096**	**280,577**

*** IUOE participated in the program this year through a no-cost extension*

Courses Provided through the DOE Program by NIEHS Grantees, Sept. 1, 2020 – July 31, 2021

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Asbestos Abatement	Asbestos Abatement Supervisor	25	232	9,280
	Asbestos Abatement Supervisor Refresher	88	883	7,064
	Asbestos Abatement Worker Basic	20	196	5,744
	Asbestos Abatement Worker Refresher	63	640	5,312
	Asbestos Inspector Certification	2	8	192
	Asbestos Inspector Refresher	5	30	152
	Asbestos Operations & Maintenance Refresher	12	129	1,016
	Asbestos Abatement Total	**215**	**2,118**	**28,760**
Biological/Remediation	Microbial Remediation: Mold and Mildew	3	29	232
	Biological/Remediation Total	**3**	**29**	**232**
Confined Space	Confined Space	57	629	12,244
	Confined Space Total	**57**	**629**	**12,244**
Construction Safety	Tunnel/Shaft	1	9	720
	Construction Safety Total	**1**	**9**	**720**

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Electrical Safety	Basic Electrical Training	5	40	412
	Electrical Safety	11	144	1,728
	Electrical Safety Total	**16**	**184**	**2,140**
Emergency Response	Emergency Response Train-the-Trainer	5	115	8,320
	Emergency Response for Specific Hazards	60	1,184	4,042
	Emergency Response/HazMat Technician	9	191	15,280
	Emergency Response Total	**74**	**1,490**	**27,642**
Equipment Safety	Fall Protection	21	274	1,294
	Forklift Operator Training Program	2	20	320
	Rigging and Signaling	13	121	2,024
	Scaffold	6	64	512
	Equipment Safety Total	**42**	**479**	**4,150**
Hazard Communication	Hazard Communication	17	425	1,772
	Hazard Communication Total	**17**	**425**	**1,772**
Hazmat Transport	HazMat Transporter/Basic	20	482	3,972
	Load Securement	13	99	396
	Hazmat Transport Total	**33**	**581**	**4,368**
Lead Abatement	Lead Abatement Supervisor	4	30	1,016
	Lead Abatement Supervisor Refresher	20	169	1,352
	Lead Awareness	9	84	672
	Lead Abatement Total	**33**	**283**	**3,040**
OSHA Outreach	General Construction Safety	145	1,639	31,538
	General Industry Safety	10	150	1,044
	OSHA Outreach Total	**155**	**1,789**	**32,582**
Other	Persistent Bioaccumulative Toxics	4	51	153
	Training Methods/Trainer Development	9	170	2,363
	Other Total	**13**	**221**	**2,516**
Personal Protective Equipment	Respiratory Protection	154	2,281	17,489
	Personal Protective Equipment Total	**154**	**2,281**	**17,489**

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Radiological	Radiation Protection Worker/Basic	18	138	1,104
	Radiation Worker II Training	10	103	2,088
	Radiation Worker Refresher	16	177	1,098
	Radiological Control Technician Training	7	31	3,179
	Radiological Total	**51**	**449**	**7,469**
RCRA/Industrial	Fire Watch	6	51	220
	Industrial Emergency Response Awareness	4	89	712
	Process Safety Management	15	73	146
	RCRA TSD Site Worker	54	413	8,372
	RCRA/Industrial Total	**79**	**626**	**9,450**
Refresher - Site Worker/ Superfund Cleanup	Site Worker Refresher	739	9,743	78,104
	Refresher - Site Worker/Superfund Cleanup Total	**739**	**9,743**	**78,104**
Site Worker/Superfund Cleanup	Basic Superfund Site Worker	146	1,129	43,352
	Hazardous Waste Operations	15	301	1,204
	Site Supervisor Basic	3	17	136
	Superfund Bridge Training	19	68	1,616
	Site Worker/Superfund Cleanup Total	**183**	**1,515**	**46,308**
Triage/First Aid	Adult CPR	11	100	800
	Basic First Aid	25	145	792
	Triage/First Aid Total	**36**	**245**	**1,592**
	Grand Total	**1,901**	**23,096**	**280,577**

Total NIEHS Training by DOE Site, Sept. 1, 2020 – July 31, 2021

Site Name	Courses Completed	Course Percentage	Workers Trained	Workers Percentage	Contact Hours	Contact Hours Percentage
Ames Laboratory	6	0%	80	0%	960	0%
Argonne East	59	3%	643	3%	15,288	5%
Ashtabula	1	0%	12	0%	120	0%
Barker Brothers	6	0%	140	1%	8,320	3%
Brookhaven National Laboratory	10	1%	127	1%	4,560	2%
Department of Energy - Headquarters	2	0%	27	0%	756	0%
Fermi National Accelerator Laboratory	10	1%	473	2%	4,296	2%
Formerly Utilized Sites Remedial Action Program	15	1%	79	0%	1,228	0%
Hanford Site	460	24%	6,827	30%	70,026	25%
Idaho National Engineering Laboratory	99	5%	860	4%	8,952	3%
Kansas City Plant	20	1%	186	1%	4,044	1%
Lawrence Berkeley	2	0%	33	0%	808	0%
Lawrence Livermore National Laboratory	16	1%	197	1%	1,640	1%
Los Alamos National Laboratory	192	10%	2,612	11%	17,300	6%
Mound Plant	4	0%	74	0%	5,000	2%
Multiple DOE sites	16	1%	272	1%	3,949	1%
Nevada Test Site	40	2%	597	3%	7,686	3%
Nuclear Fuel Services	8	0%	105	0%	840	0%
Oak Ridge Field Office	388	20%	2,778	12%	40,877	15%
Paducah Gaseous Diffusion Plant	87	5%	768	3%	10,740	4%
Pantex Plant	66	3%	951	4%	9,924	4%
Pinellas Plant	4	0%	28	0%	234	0%
Portsmouth Gaseous Diffusion Plant	90	5%	967	4%	13,954	5%
Princeton Plasma Physics Laboratory	37	2%	410	2%	8,166	3%
Rocky Flats Office	3	0%	72	0%	5,760	2%
Santa Susana Field Laboratory	21	1%	486	2%	3,960	1%
Savannah River Site	124	7%	1,677	7%	12,626	5%
Separations Process Research Unit at Knolls Lab	12	1%	145	1%	1,160	0%
St. Louis Airport Site	5	0%	55	0%	1,332	0%
Thomas Jefferson National Accelerator Facility	1	0%	7	0%	280	0%
Weldon Springs	58	3%	748	3%	8,192	3%
West Valley Demonstration Project	39	2%	660	3%	7,600	3%
Totals	**1,901**	**100%**	**23,096**	**100%**	**280,577**	**100%**

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

10-Year Training Summary: NIEHS/DOE Nuclear Worker Training Program, 2011-2021

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020***	2021****
Number of Grantees**	8	8	8	8	8	7	7	7	7	7	7
Courses Completed	1,987	1,963	1,790	1,900	1,830	1,927	2,066	1,679	1,795	1,387	1,901
Workers Trained	31,238	29,842	27,737	28,334	26,396	28,162	32,202	27,769	29,714	19,572	23,096
Contact Hours	405,556	365,083	309,977	311,412	323,316	368,680	389,786	343,923	368,276	214,129	280,577
Dollars Awarded	$9,577,000	$9,599,741	$8,760,715	$8,760,685	$9,543,426	$8,827,223	$8,852,400	$9,425,498	$9,346,048	$8,365,309	$9,244,023
Cost Per Contact Hour	$23.61	$26.29	$28.26	$28.13	$29.52	$23.94	$22.71	$27.46	$25.39	$38.98	$32.95

*** Number of grantees does not include those in a no-cost extension status*

***** 2020 numbers were impacted by COVID-19 and restrictions on training delivery.*

***** 2021 had an eleven-month grant year due to a shift in project end date by NIEHS*

Summary of NIEHS Training at DOE Sites, 1994-2021

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	1,679	27,769	343,923
2019	1,795	29,714	368,276
2020	1,387	19,572	214,129
2021	1,901	23,095	280,377
Totals:	**47,960**	**694,564**	**9,039,640**

This table includes some corrected numbers from prior years' reports.

Projected Versus Actual Training, Sept. 1, 2020 – July 31, 2021

Grantee	2021 Projected Courses	2021 Courses Completed	Percentage of projected courses that were delivered	2021 Projected Workers to be Trained	2021 Workers Trained	Percentage of projected workers that were trained
CPWR - The Center for Construction Research and Training	642	600	93%	11,411	7,417	65%
International Association of Fire Fighters	16	26	163%	320	524	164%
International Brotherhood of Teamsters	195	175	90%	3,040	2,553	84%
International Chemical Workers Union	205	152	74%	2,806	1,879	67%
Laborers International Union of North America Training and Education Fund	159	204	128%	1,590	1,701	107%
Partnership for Environmental Technology Education	412	362	88%	7,183	3,597	50%
United Steelworkers of America	290	232	80%	4,552	2,523	55%
Totals:	**1,919**	**1,901**	**99%**	**30,902**	**23,096**	**75%**

Projected Training Courses for Aug. 1, 2021 – July 31, 2022

Course Name	Number of Courses Projected	Total Course Hours Projected
15-Hour Disaster Site Worker	1	15
Adult CPR	34	242
Asbestos Abatement Supervisor	12	480
Asbestos Abatement Supervisor Refresher	30	240
Asbestos Abatement Worker Basic	15	536
Asbestos Abatement Worker Refresher	28	224
Asbestos Awareness	1	4
Asbestos Control Certification	4	96
Asbestos Inspector Certification	4	82
Asbestos Inspector Refresher	10	40
Asbestos Management Planner	6	112
Asbestos Operations & Maintenance Refresher	13	152
Basic First Aid	33	276
Basic Superfund Site Worker	126	5,080
CAMEO	2	48
Community-Level Infectious Disease Awareness	2	8
Confined Space	60	680
Crane Operators	6	196
Cutting & Burning	6	48
Disaster Site Worker Train-the-Trainer	2	80
Electrical Safety	26	318
Emergency Response Awareness	2	11
Emergency Response Incident Command	3	56
Emergency Response Train-the-Trainer	1	40
Emergency Response for Specific Hazards	75	190
Emergency Response/HazMat Technician	9	720
Ergonomics (DOE)	1	16
Evaluation of Industrial Ventilation	5	156
Fall Protection	48	383
Fire Watch	7	28
Forklift Operator Training Program	4	32
GHS-Hazard Communication	2	23
General Hazardous Waste Train-the-Trainer	2	136

Course Name	Number of Courses Projected	Total Course Hours Projected
General Construction Safety	97	1,988
General Industry Safety	44	624
Hazardous Waste Operations	30	120
HazMat Transportation Awareness	16	116
HazMat Transporter/Basic	23	320
Hazard Communication	30	120
Hazardous Waste Operations Awareness	20	80
Incident Management Systems Awareness	3	48
Industrial Emergency Response Awareness	2	32
Industrial Emergency Responder Tech.	2	32
Lead Abatement Instructor	1	40
Lead Abatement Supervisor	4	128
Lead Abatement Supervisor Refresher	9	72
Lead Abatement Worker Basic	1	32
Lead Awareness	9	68
Load Securement	13	104
Lockout/Tagout	23	46
Off Road Equipment	24	96
Process Safety Management	1	24
RCRA TSD Site Worker	52	664
Rad. Protection Worker/Basic	23	46
Radiation Worker II Training	23	528
Radiation Worker Refresher	11	98
Respiratory Protection	103	616
Rigging and Signaling	37	498
Scaffold	8	192
Scissor Lift/Aerial Lift	1	8
Site Supervisor Refresher	14	112
Site Worker Refresher	657	5,256
Site Worker Train-the-Trainer	4	96
Superfund Bridge Training	24	480
Training Methods/Trainer Development	25	572
Trench Protection Principles of Pipe Laying	5	128
Totals:	**1,919**	**24,132**

National Institute of
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Worker Training Program

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