



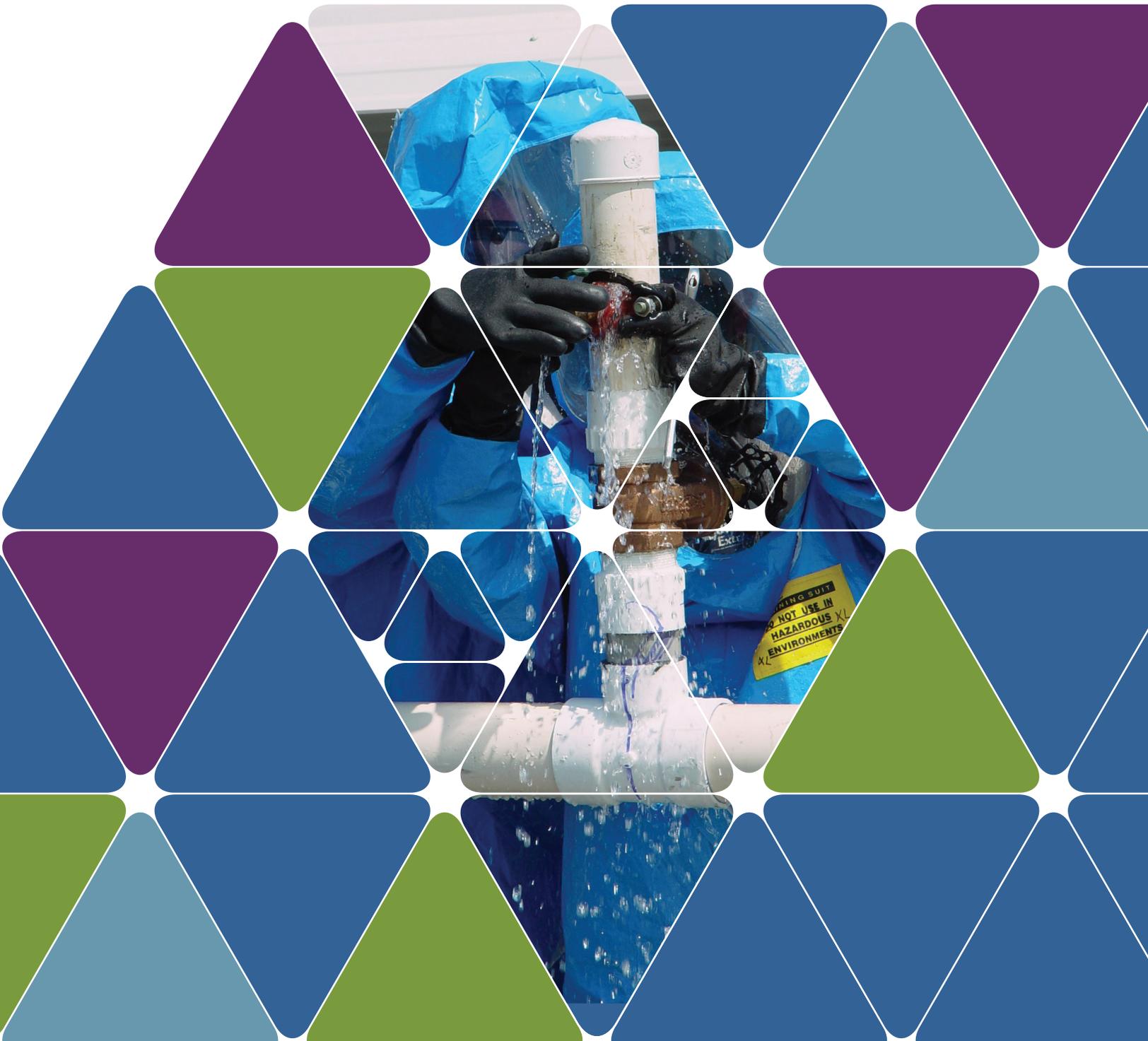
National Institute of
Environmental Health Sciences
Worker Training Program

The National Institute of Environmental Health Sciences/
Department of Energy

Nuclear Worker Training Program

Accomplishments and Highlights

Aug. 1, 2021 – July 31, 2022



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 2022 program year (August 1, 2021 – July 31, 2022), as well as some program updates from Aug. 2022 to Jan. 2023.

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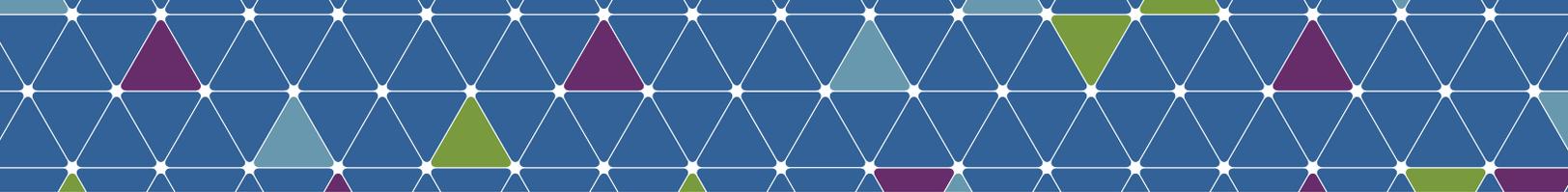
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Overview of the National Institute of Environmental Health Sciences (NIEHS)/Department of Energy (DOE) Nuclear Worker Training Program

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 including basic worker skills such as safety culture and human performance improvement. 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 \$29.33 per contact hour. Since the beginning of the program, 720,727 workers have received 9,367,259 contact hours of training in 49,850 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 Health and Safety Training Criteria: Guidance for Hazardous Waste Operations and Emergency Response \(HAZWOPER\) and HAZWOPER-Supporting Training \(Minimum Criteria\)](#) document. In addition, many grantee organizations hold academic accreditation from third party agencies that directly aids in providing high quality training to workers.

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. Over half of the grantees participate in the DOE Reciprocity Certification Program.

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 was discussed in an Activity Highlight in the [2020 NIEHS/DOE Program Annual Report](#). The United Steelworkers Tony Mazzocchi Center is moving forward with successful efforts to engage with fenceline communities and create career opportunities for nearby residents as discussed in their activity highlight.

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, 2021-2022

Training Summary

For the 2021-2022 program year (Aug. 1, 2021 – Jul. 31, 2022):

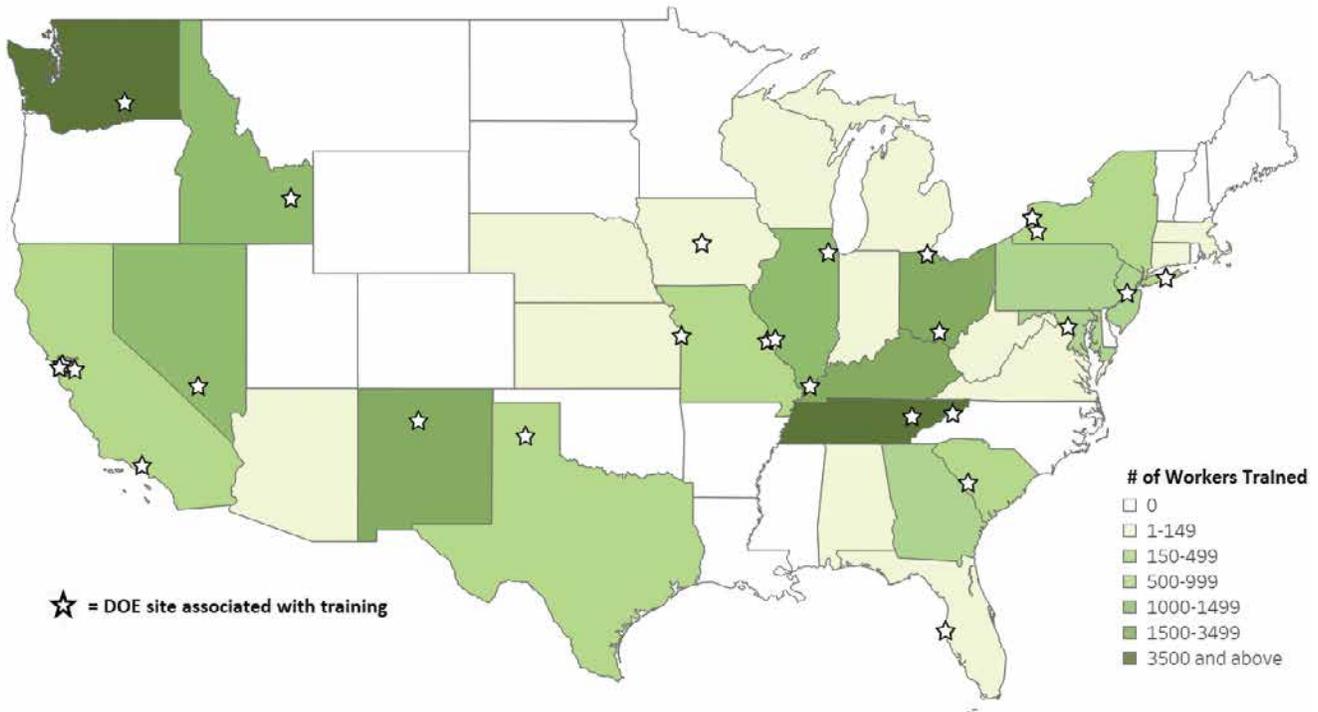


Although slightly fewer courses were provided in FY 2022 (-1% change), total hours trained increased by 17% and total workers trained increased by 13%.

Training Locations

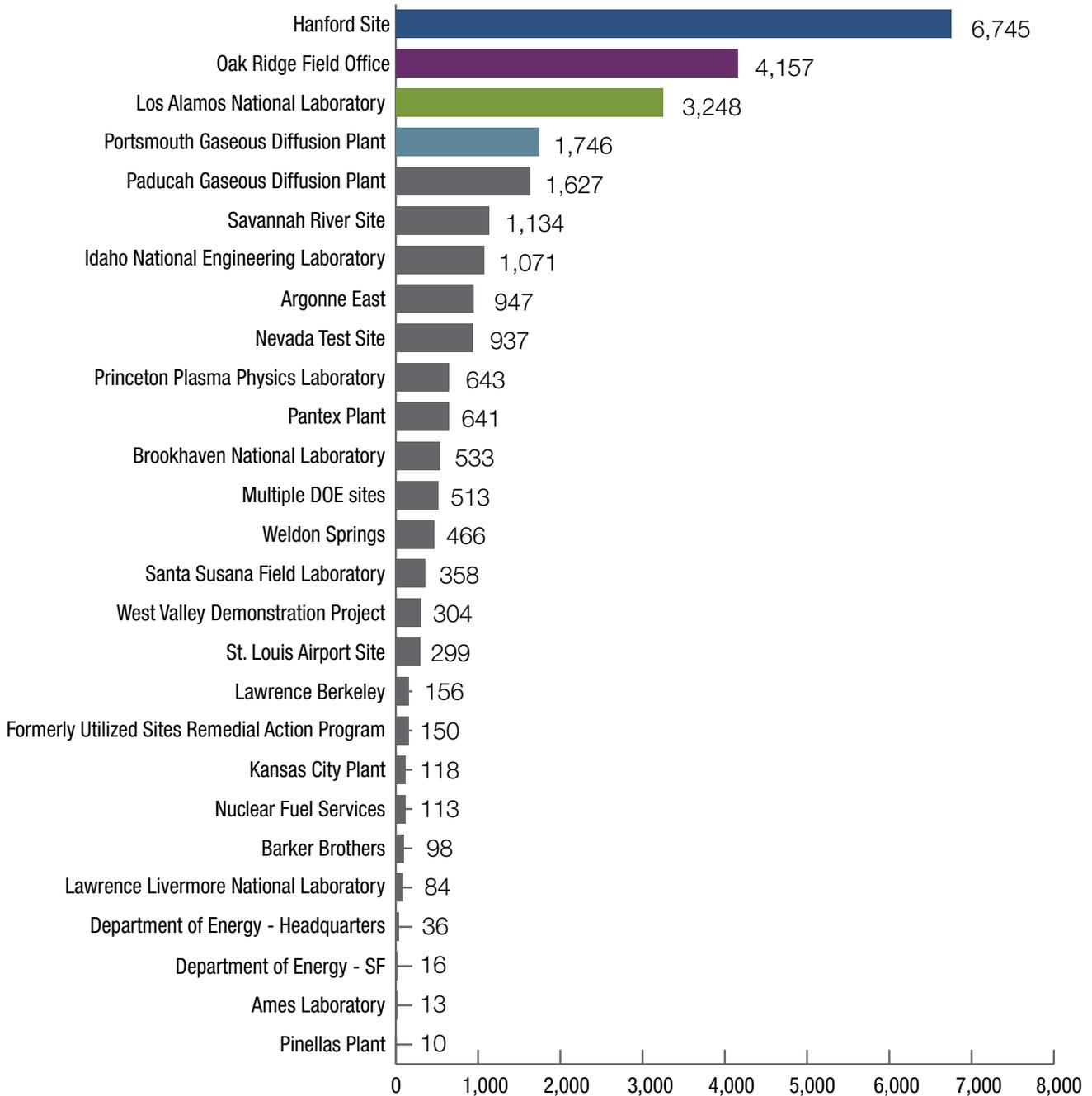
NIEHS/DOE grantees trained in 31 states, as shown in the map. The training for many sites, both large and small, demonstrates the national scope of this Program. A full list of DOE sites is available in the Data Tables section of this report.

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 **Portsmouth Gaseous Diffusion Plant**. Overall, grantees trained at or around 27* sites this year. (Aug.1, 2021 – Jul. 31, 2022)

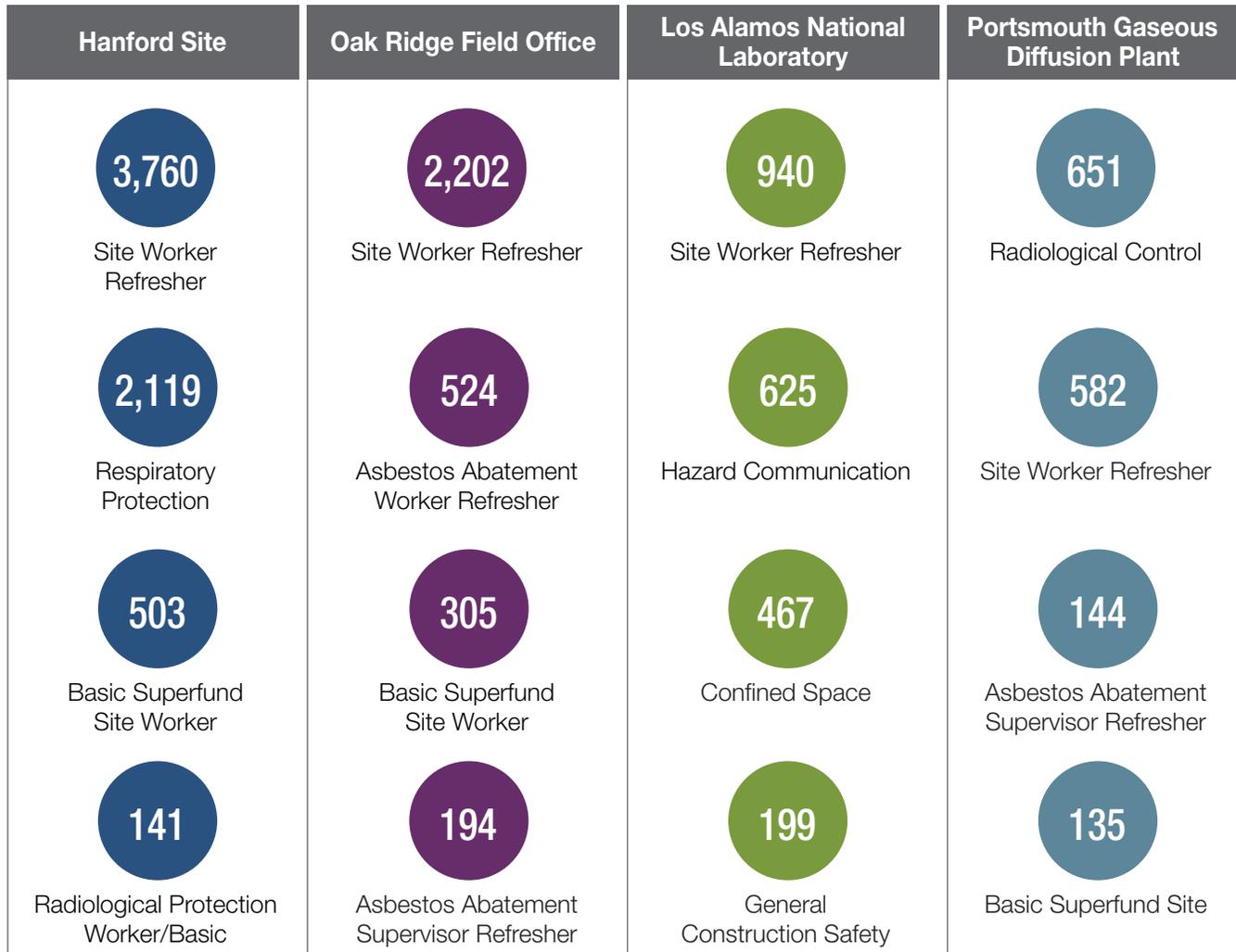


* The 27 sites includes “multiple sites” which includes sites in Arizona, California, District of Columbia, Georgia, Illinois, Maryland, Michigan, Missouri, Ohio, Pennsylvania, Texas, Virginia and Washington.

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 2021-2022 program year.

Top Courses, by Workers Trained, by Site



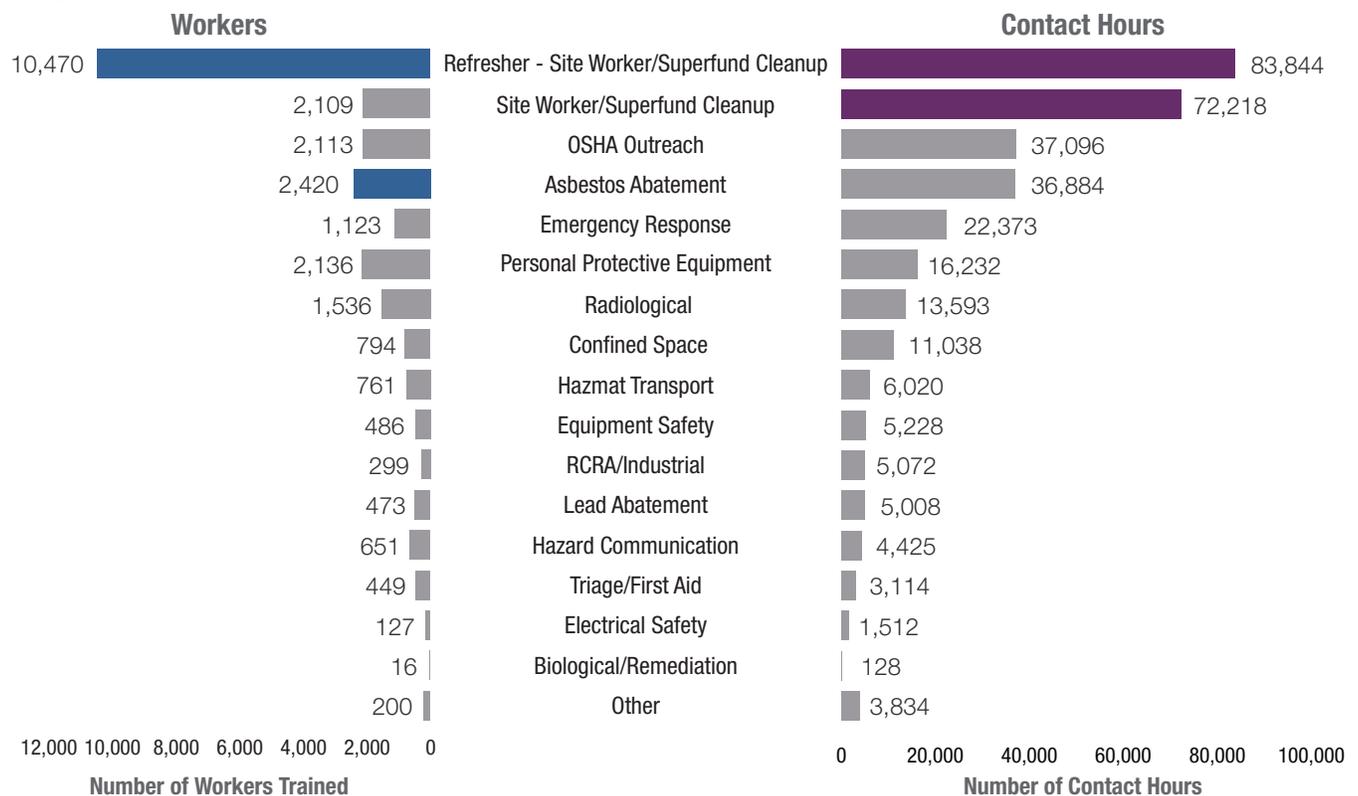
Training Course Categories

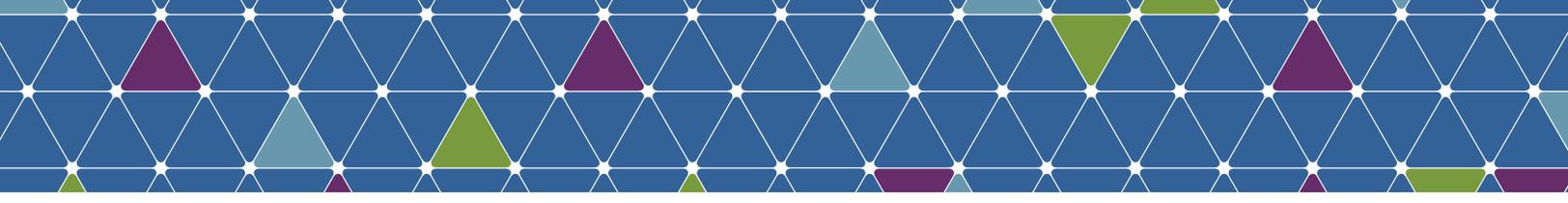
The figure below shows the numbers of workers trained and total contact hours for various courses during the 2021-2022 program year. These courses are critical to ensure DOE worker and site safety, and worker readiness for employment. A full list of training courses, organized by categories, is available in the Data Tables section of this report.

Of the 26,163 workers trained, the highest numbers of workers received training in **Site Worker Refresher** and **Asbestos Abatement** courses.

Of the 327,619 contact hours, grantees delivered the highest numbers of contact hours through **Site Worker Refresher** and **Basic Superfund Site Worker** courses.

(Aug. 1, 2021 – July 31, 2022)





Activity Highlights

Below are highlights from three grantees: the Community College Consortium for Health and Safety Training, CPWR- The Center for Construction Research and Training, and The Steelworkers Charitable and Educational Organization. Each highlight provides an example of how the grantees are making a difference in DOE sites and in surrounding communities.

Community College Consortium for Health and Safety Training

The National Partnership for Environmental Technology Education (PETE), in partnership with local community colleges, the University of Tennessee and the Hazardous Materials Training and Research Institute (HMTRI), oversees the Community College Consortium for Health and Safety Training (CCCHST). Support to DOE contractors has been in place since 1995 and has undergone expansion supporting DOE site workers.

The CCCHST supports the DOE environmental restoration and waste management sites at Oak Ridge Operations, TN; Portsmouth Site, OH; Savannah River Site, SC; Pantex, TX; and Los Alamos National Lab, NM. The training partners include Amarillo Community College (TX), Roane State Community College (TN), Greenville Technical College (SC), and Santa Fe Community College (NM). The University of Tennessee (TN) provides follow-up student and employer evaluation for CCCHST.

CCCHST partners generally train only those employees who have been assigned training by their DOE training office. Recruitment, worker qualifications and selection are handled by the respective DOE facility. Amarillo Community College, Santa Fe Community College, Roane State Community College, Greenville Tech and Santa Fe Community College have campuses located within close proximity of the DOE sites but they have also provided online coursework for the past ten years as well as Zoom courses since the outbreak of COVID.

The classes conducted for Oak Ridge Operations are held at Roane State College, classes offered for Pantex are held at Amarillo College campus, classes offered for Savannah River are offered on site, and Los Alamos National Lab classes are conducted at Los Alamos National Lab's White Rock Training Center. In the case of Pantex, Amarillo Community College and the Pantex training office have established a five-year training plan based on the needs of employees.

Most grantee delivery is done with grantee prepared training materials and grantee certified instructors. A different model, supporting the desires of the DOE contractor, are being provided at Los Alamos National Laboratory (LANL). PETE and Santa Fe Community College have a Los Alamos National Lab - approved trainer who teaches Employee Health and Safety classes using LANL approved curriculum both face-to-face and via Zoom. Classes are determined by LANL training coordinators. LANL is satisfied with this approach.

At Oak Ridge Operations, Roane State Community College has established a network of section managers and training coordinators to establish a yearly training plan and classes to be offered off-site and at the college.

PETE's third-party evaluator, Steve Fenton, reviews student evaluations and student/employer follow-up surveys and prepares a report for the Advisory Board and for inclusion in the annual report. Fenton determined that Amarillo College, Greenville Technical College, Roane State Community College and Santa Fe Community College are premier training providers delivering high quality training to their students. The expertise and knowledge of their instructors is well documented, the course content was determined as excellent and at the appropriate level, and students were very well satisfied with their learning experience.

CPWR - The Center for Construction Research and Training

Construction is one of the most dangerous industries in the US, with over 1,000 fatal injuries each year since 2016. About two-thirds of those injuries were caused by the [Construction Focus Four](#) hazards, including fall to lower level, struck-by, electrocution, and caught-in/between. The March 2023 issue of CPWR's [Data Bulletin](#) examined fatal and nonfatal Focus Four injuries in construction by injury type and detailed event/exposure. It found that falls to a lower level accounted for a majority of fatal Focus Four injuries, while struck-by injuries comprised a majority of nonfatal Focus Four injuries. In response to these ongoing injuries and fatalities, CPWR's training courses incorporate discussions and activities to help students better recognize these hazards and discuss ways to protect themselves on the jobsite. While many students who take Hazardous Waste training think that hazardous waste is the greatest hazard, the data show the more common worksite hazards such as falls to lower level, struck-by, electrocution, and caught-in/between lead to more injuries and fatalities.

Grantee Highlight: A visit from DOE Secretary Jennifer Granholm

In recognition of DOE's safety-first approach to cleaning up hazardous waste sites, DOE Secretary Jennifer Granholm visited a CPWR 40-hour Hazardous Waste Worker class at the Volpentest HAMMER Federal Training Center at DOE's Hanford Site in Richland, Washington. The class was conducted by CPWR's worker trainers, led by Ed Seitz. The training is funded by the National Institute of Environmental Health Sciences (NIEHS). It focuses on protecting construction workers by preparing them to handle hazardous waste cleanup at the Hanford site.



Ed Seitz, CPWR (left) and Jennifer Granholm, DOE Secretary (right) visiting a CPWR 40-hour Hazardous Waste Worker class at the Volpentest HAMMER Federal Training Center at DOE's Hanford Site in Richland, Washington. (Photo courtesy of CPWR)

The Steelworkers Charitable and Educational Organization



Tony Mazzocchi Center Radio Control Technicians Course Participants. (Photo Courtesy of USW TMC)

At DOE sites, radiation is a hazard to health, safety, and the environment. Radiological Control Technicians (RCTs) perform strict and routine monitoring of potential radiation contamination at the site to help protect workers and the community from this hazard. To become an RCT, workers must undergo specific technical training outlined by the DOE's applicable handbook and pass a practical exam.

Radiological Technician Workers are hard to retain. To counter this challenge, the **United Steelworkers (USW) Tony Mazzocchi Center (TMC)** sought to collaborate with the [Four Rivers Nuclear Partnership](#) and shared their [plan to train and retain workers](#). Part of USW's mission is to benefit the community through environmental cleanup and creating local jobs for residents. With the buy-in from Four Rivers Nuclear Partnership, recruitment for the training improved. In the most recent class of trainees, there were 20 candidates for the 240-hour class. Once the candidates passed this class, they were immediately eligible for work. Eighteen of the candidates graduated and also certified with the 40-hour HAZWOPER training at the start of their employment. Additional, RCT courses are being planned for 2023.

The program was so successful, in continued collaboration with the Four Rivers Nuclear Partnership, USW is looking to expand and fill other jobs needed in the community with local community members.

The Paducah site has facilitated a handful of [Resource Conservation and Recovery Act \(RCRA\)](#) initial classes throughout this program year and plans on starting RCRA Refresher training by the end of 2022. The HAZWOPER 40-Hour and Refresher classes remain at the core of the Paducah collaboration with TMC.

Grantee Highlight: Ashlee Fitch, United Steelworkers Tony Mazzocchi Center

On November 8, 2022, at the American Public Health Association Annual Meeting and Expo, the Occupational Health and Safety Section hosted their annual awards luncheon.

Ashlee Fitch, MS, CSP, OHST, Principal Investigator for the Steelworkers Charitable and Educational Organization was awarded the 2022 Lorin Kerr Award.

Lorin Kerr (1909-1991) was a life-long activist and served for over 40 years as a physician for the United Mine Workers. He was dedicated to improving access to health care for coal miners and other workers and to obtaining compensation for and preventing black lung disease. This award recognizes a younger activist for their sustained and outstanding efforts and dedication to improve the lives of workers.

Ashlee Fitch is the youngest principal investigator in the history of the NIEHS WTP. Her passion for worker justice, safety and health, education and leadership abilities have taken the USW Tony Mazzochi Center to a new level. Her leadership will benefit the safety and health movement for years to come.



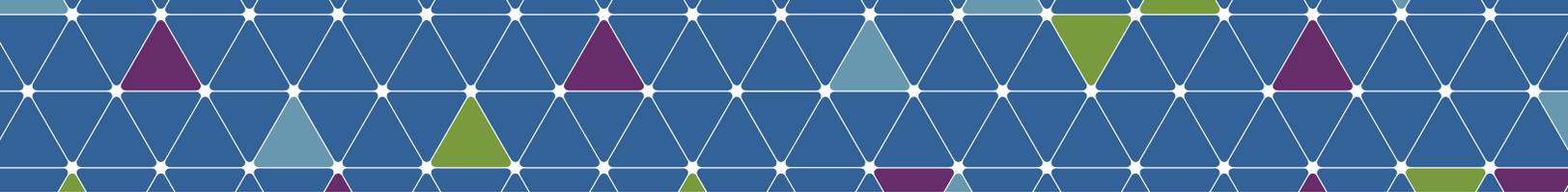
Ashlee Fitch receiving the 2022 Lorin Kerr Award. (Photo courtesy of Allison Weingarten)

Ongoing, New, and Upcoming Initiatives

NIEHS Program Leadership and Activities

NIEHS WTP staff engage in ongoing work with DOE partners. During the 2021-2022 year, this included:

- **Briefings and update meetings with EM**
 - August 2021 NIEHS met with EM to provide general updates.
 - June – Oct. 2022, Regular check-in meetings to review the NIEHS/DOE Partnership Communication Plan and other matters supporting the Memorandum of Understanding.
 - September 2022, Annual program briefing with grantees.
- **Strategic meetings with partners**
 - October 2022 – HAMMER Steering Committee
 - April and September - Two conference calls between NIEHS Federal Staff, the NTC Special Project Manager (Evan Dunne) and Ted Giltz.
 - February 2022 - Strategy conference call with representatives from LANL Institutional Training, CPWR, Demia Wright and Ted Giltz to discuss course expansion due to planned hiring at LANL.
 - August 2022 - Conducted meeting to expand use of existing DOE lessons learned data using the CAIRS reporting system. Conference call was conducted with the EHSS coordinator, Demia Wright and Ted Giltz.
- **Conferences, Workshops, and Webinars:**
 - **October 2022 - EFCOG Training Working Group meeting:** NIEHS and the Labor Training Working Group (LTWG) gave an update on training available under the NIEHS/DOE Program.
 - **Grantee Presentations:**
 - The **Spring 2022 workshop** took place May 18-19, 2022. During the workshop, Gavin West of CPWR presented on “Heat.”
 - The **Fall 2022 workshop** took place October 20-21, 2022. The following DOE grantees made presentations:
 - Ashlee Fitch, of the United Steelworkers Tony Mazzocchi Center presented on “Radiological Technician Worker Training at Paducah;”
 - Charles Austin of the International Brotherhood of Teamsters presented on “Preventing Heat Stress for Truck Drivers;”
 - Jamie Burgess of the International Association of Fire Fighters presented on “Lithium-ion Batteries and the Hazards Facing the Fire Service;”
 - Mary Vogel of Building Pathways, a subgrantee of CPWR, presented on “Building Pathways: An Apprenticeship Readiness Model for Workforce Development.”



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

- **May 2022** - Sharon Beard attendance at DOE meeting at AIHA.
- **Jan 2022 - Safety Culture Improvement Panel (SCIP) Meeting:** NIEHS grantees CPWR and the International Association of Firefighters (IAFF) presented to SCIP. CPWR and IAFF described their safety culture curricula, which is available to be delivered through grant-funded training.
- **Jan 2022 - Idaho Environmental Coalition (IEC) call:** Ted Giltz spoke with a contact for Idaho National Laboratory's (INL) new contractor IEC to discuss grantee training capabilities and continuation of grantee [National Fire Protection Association \(NFPA\) 70e training](#) at INL. Continuation of NFPA-70 related electrical training for two Idaho contractors continues to save approximately \$100k per year in training costs.
- **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. Training needs at LANL will continue to expand into 2023 due to anticipated hiring to support EM and Laboratory missions.

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 2021-2022 program year took place as the COVID-19 pandemic was becoming less severe. During the program year, grantees continued to implement protocols implemented during the COVID-19 pandemic including shrinking class sizes. Grantees report more ease with the updated protocols than when the protocols were first implemented.

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, Safety Culture TLP-100
 - 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.
- 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, RCRA Initial, and RCT Academics.

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.

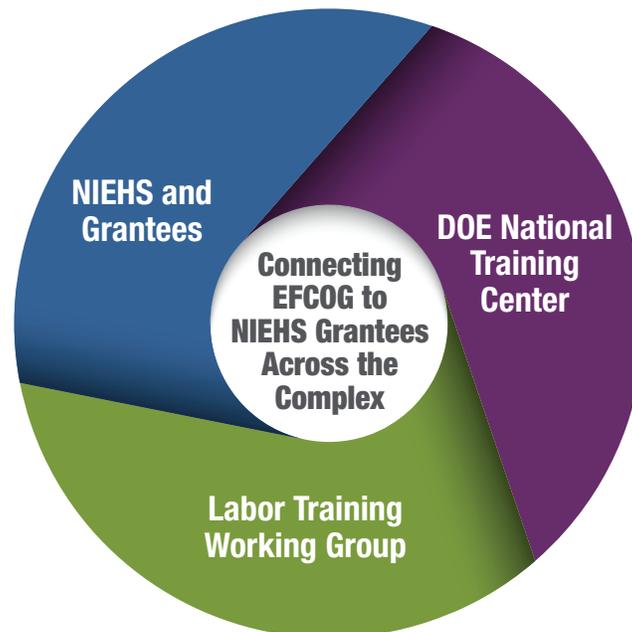
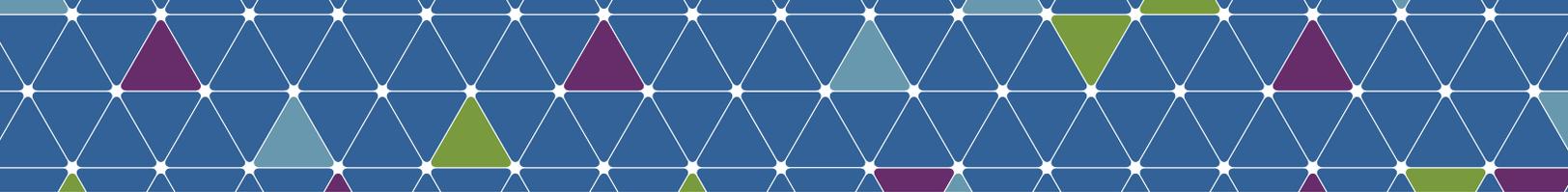


Figure 1 Expanding training delivery at DOE sites through partnership and collaboration.



DOE Liaison

To better leverage existing training capacity and educate new DOE contractors, NIEHS continued a relationship with a part-time liaison with extensive DOE experience, Ted Giltz started in the position in October 2018 and has continued into 2023 to assist with many of the initiatives described in this report. Giltz 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.
- 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 build health and safety training using grantee capabilities at the Hanford Site, Los Alamos, Portsmouth, Savannah River and Oak Ridge.

Hanford Site/ICWUC

The Volpentest Hazardous Materials Management and Emergency Response (**HAMMER**) Federal Training Center (The Center) is a safety and emergency response training center located at the **Hanford Site**. HAMMER Center trainers maintain a core of classroom instruction coupled with hands-on activities. These principles rely heavily on recognized adult education principles and utilize HAMMER's vast array of props and equipment. Students work with actual equipment during training, making their hands-on training experience "as real as it gets."

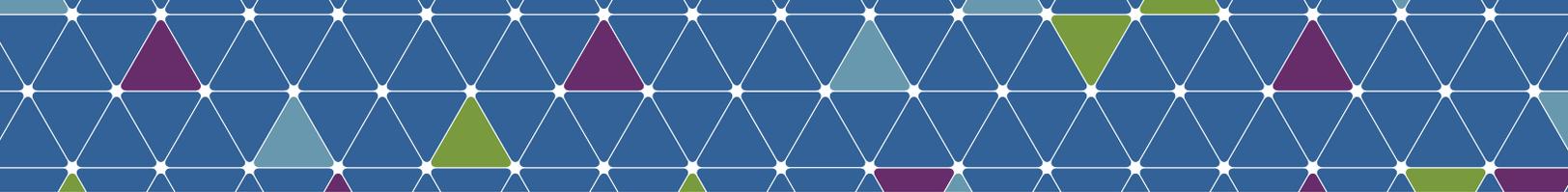
Coordinated by Terry Whitcomb, **International Association of Machinists and Aerospace Workers (IAMAW) Local 1951, the ICWUC funded IAMAW and International Brotherhood of Electrical Workers trainers** work with the HAMMER facility to deliver their site-specific respiratory protection program. Trainers continue to work with site contractors and the HAMMER facility to deliver site-specific programs centered on the changing mission of the Hanford site.

Trainers are the subject matter experts who apply their knowledge of the sites and contractors to develop a genuinely site-specific curriculum. Each year HAMMER staff conduct a needs-based assessment to inform the training. This year the needs assessment informed the trainers of the need to group classes Monday through Wednesday and Thursday and Friday to accommodate trainees. Scheduling the combination class in this manner keeps the class sizes and frequency at a manageable level for HAMMER, the Center, and in line with Covid-19 protocols. The Center serves on HAMMER's Medical Surveillance Subcommittee that meets twice per year, exemplifying the Center's status at the site.

As needs change or new equipment is added, trainers deliver classes on the specific gear required. This comprehensive training requires the trainers to be familiar with all the respiratory protection needs of the Hanford contractors and the equipment utilized by each of the various worksites.

Los Alamos National Laboratory (LANL)

- **CPWR:** CPWR staff continue to work with the LANL training department to provide in-person Hazardous Waste 40-hour, 24 hour and Refresher training. In person training follows the continuing comprehensive COVID-19 protocols implemented by the site to protect both the students and trainers.
- **ICWUC:** ICWUC continues to provide training, namely the LANL curriculum for Confined Space and Fall Protection, to workers at LANL. LANL trainers use the ICWUC program to develop trainers. The ICWUC's primary effort is to follow up with DOE trainers to become the onsite subject matter experts and an essential resource in improving their workplace.
- **IBT:** The IBT has provided training to the workers at LANL in the 40 Hr. HAZWOPER, 24 Hr. HAZWOPER, 8 Hr. HAZWOPER Refresher, 8 Hr. Load Securement, OSHA 10 Construction, 8 Hr. Forklift, 4 Hr. Forklift classes, and NCCCO Crane Certification classes. During this grant year, IBT expanded training at this site to support various crane/rigging related courses. The program was able to conduct 44 classes and train 835 workers for 9,812 contact hours.



Portsmouth Gaseous Diffusion Plant/USW

The Radiological Control Technical (RCT) Training currently being offered at Paducah originated with a pilot program at Portsmouth in 2018. Due to the success in 2018, Portsmouth resumed the RCT training in Spring 2022.

Sixteen students are currently participating and are projected to complete the training at Portsmouth at the end of September 2022. This training program benefits the plant and requires well-trained RCTs. Community members who fulfill training requirements will have access to some of the highest-paying jobs in the area. Additional classes are planned for FY2023.

The Portsmouth site trainers are also educating workers on the Energy Employees Occupational Illness Compensation Program Act (EEOICPA) for nuclear workers. To ensure that workers whose health was damaged by work-related exposures are appropriately compensated, the local union is conducting dose reconstruction and analyzing whether current categories eligible for compensation are inclusive of all exposures.

The Tony Mazzocchi Center sponsored two interns from the Occupational Health Internship Program (OHIP) during summer 2022 to review training provided to workers on the hazards at the site and best practices for workers to be protected. The interns conducted surveys and interviews of workers concerning their exposures and their training.

Savannah River/LIUNA Training and Education Fund

Exemplifying the role of the LIUNA Training and Education Fund at the Savannah River site, a Labor relations director shared this testimonial:

I would like to take this opportunity to commend the Laborers' Training Program for developing craft men and women who are referred to the Savannah River Mission Completion (SRMC) at the Savannah River Site. During the first month of employment here at SRMC, craft employees are expected to be fully trained on OSHA 10, confined space precautions, as well as general employee safety protocols. It is helpful for our new hires to have been exposed to these topics prior to the push of this first month. The training provided by the Laborers' Training Program gives our new hires a foundation to build on. SRMC's number one priority is safety and having trained, qualified and safe employees is the key to our success in supporting the DOE and its mission.

Oak Ridge National Laboratory (ORNL)/ICWUC

The ICWUC Center for Worker Health & Safety Education (the Center) has been training at Oak Ridge National Laboratory since 1992. The Site Coordinators, the Oak Ridge Atomic Trades and Labor Council, and the Nuclear Coordinator successfully duplicated the Hanford Memorandum of Understanding (MOU) at the Oak Ridge facility. This MOU establishes compensation to the contractor for the trainers' time spent preparing and presenting programs. While historically, the MOUs led to ease in the training schedule, a growing challenge is obtaining the release of workers for training. Despite this struggle, the concept of worker trainers reduces the amount of Center staff assistance needed for onsite programs optimizing the cost-effectiveness of these programs. It also demonstrates the overall support onsite for these programs.

Another sign of support for these programs is the popularity of training in Oak Ridge, leading to a search for a new larger location for training. The goal was to find a place that could offer ample parking for participants, adequate classroom size to accommodate the new normal of social distancing, proximity to the current training location, and the availability of a storage area to house the hands-on equipment. The transition to this new location was completed in Spring 2022. With the larger space, class sizes have returned to normal numbers and likely will expand in FY2023.

Oak Ridge training resumed and has continued with the refresher training at a steady level. To keep these classes as safe as possible, trainers conducted more classes with fewer students per class to preserve social distancing and other preventative measures.

The Oak Ridge trainers conduct monthly in-house safety meetings about specific hazards and reflect on worksite changes within the facility.

The Oak Ridge trainers have reached outside the plant's gates, and the trainers conducted classes for local church groups. The instructors conduct community classes outside their regular work hours, showing their dedication to the plant and community.

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).

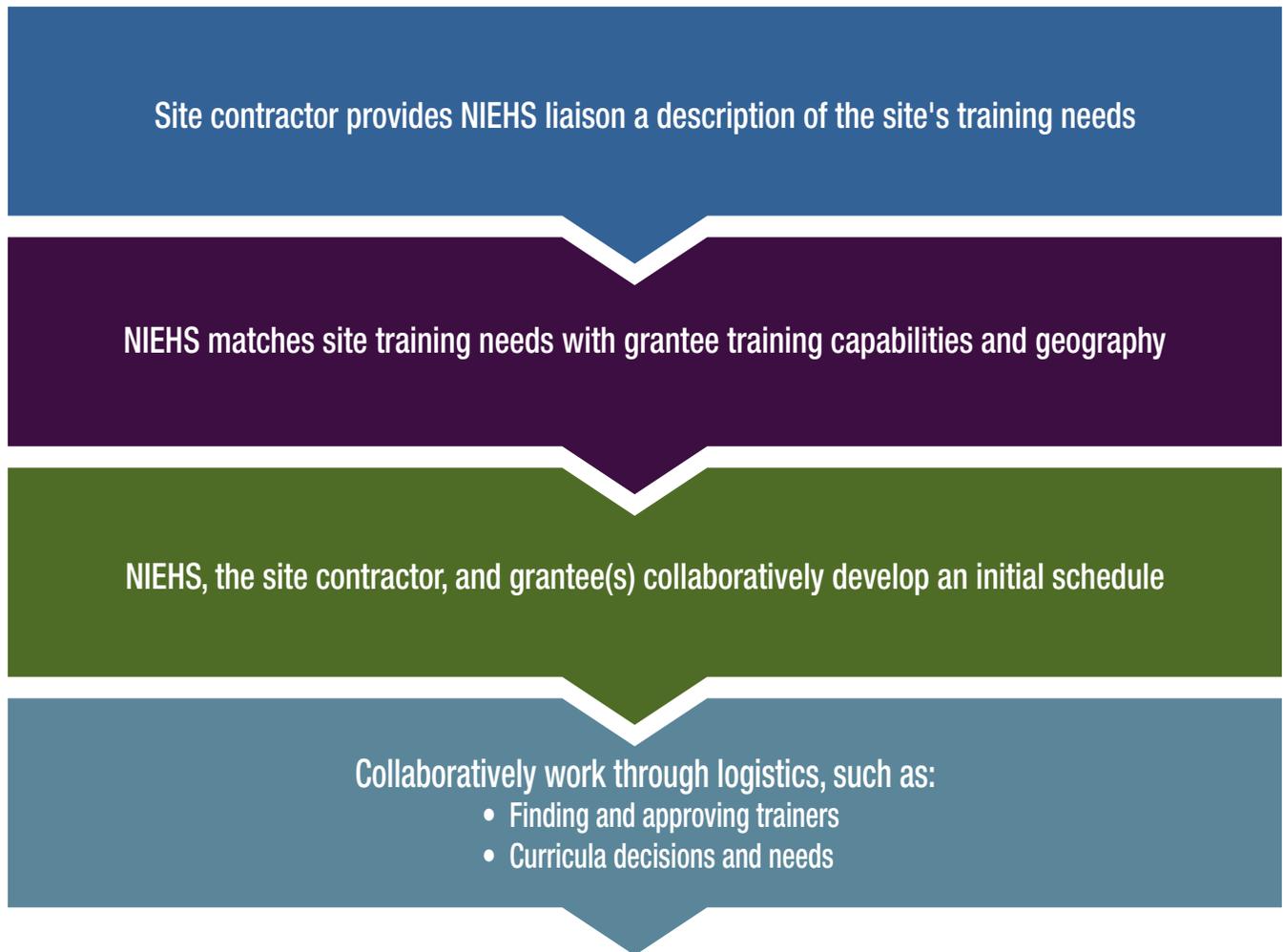
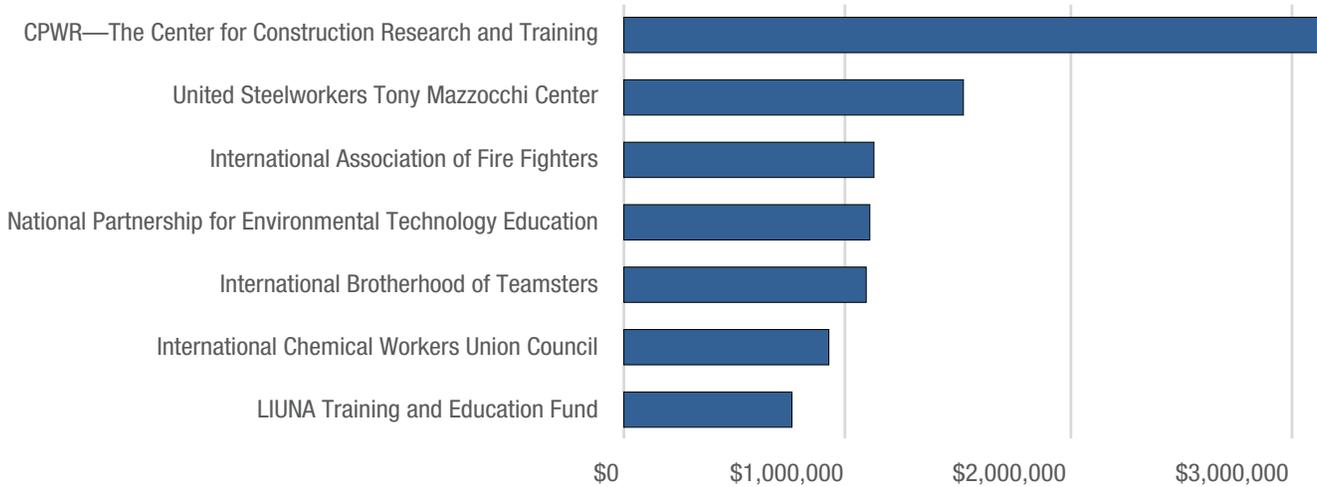


Figure 2 The process used to connect grantees to DOE site contractor training needs.

Program Funding and Grantees

Funding

Through an interagency agreement, NIEHS WTP provided \$9,608,823 in funding to NIEHS/DOE Program grantees. Funding was from fiscal year 2022 DOE appropriations. Seven grantees were funded to implement training during the 2021-2022 program year.



Program Grantees (Sept. 2020 – July 2025)

CPWR

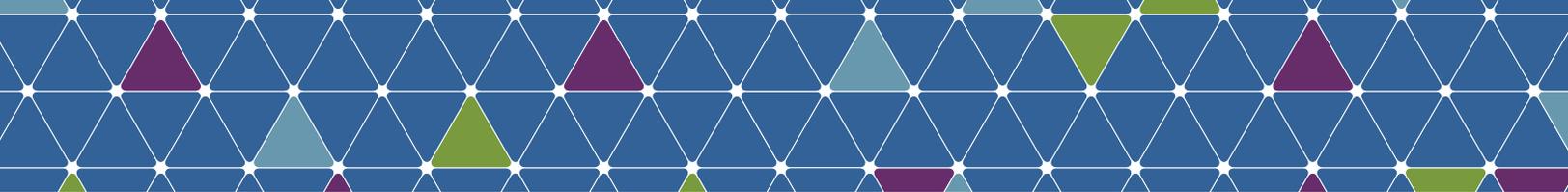
CPWR is sponsored by North America’s Building Trades Unions, which represents 14 international and national building trades unions. Their training consortium includes the following international and national construction unions: Insulators and Asbestos Workers; Iron Workers; Boilermakers; Painters; Bricklayers; 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.

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.

LIUNA Training and Education Fund

LIUNA 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.

PETE/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.

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.

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

CPWR—The Center for Construction Research and Training

CPWR trainees believe that safety and health training can make a difference in preventing accidents and exposures. When individuals indicated they had a story to tell, they were interviewed by telephone. The key role of awareness and knowledge in keeping safety and health in the forefront of one's working life was a theme throughout. Below are some of those stories:

- A Nevada operating engineer participated in a 40-hour Hazardous Waste (HazWaste) training. Watching a video of coal miners and seeing all the dust around them when they work in the mines impacted him. The trainee said: "The number one reason that training is important is dust. The only way to know that is through training. What you learn in training is to realize what is in the air – dust! It can be lead, asbestos – you name it. When you are saw-cutting concrete you're bringing up silica dust."
- A painter who took Lead Awareness Training (and did the interview in Spanish) had been an IUPAT member for over 35 years. He said that training is essential for protecting workers. "Training helps you understand the risks you are facing. For instance, there is lead dust, so you use protection – masks and Tyvek suits. Abrasive sandblasting is the most dangerous kind of work for a painter because the lead dust it produces is the finest. There are so many dangers working as a painter because your work consists of sanding, heating, burning, and grinding."

Quotes that exemplify CPWR impact on trainees:

"Could not be any better than this. Great instructors; best testing ever. Did not feel overwhelmed by a stressful test. Need more classes like the ironworker's class. Felt very relaxed and confident when I left this class. Great job, guys!" (Hazardous Waste Refresher, Trainee from Washington)

"Great course with interesting points and hazardous materials accidents that I was unaware of. Very informative. Enjoyed it very much." (Hazardous Waste Refresher, Trainee from Tennessee)

"I have attended many courses and training programs in my 41 years of working in industrial environments. The instructor was knowledgeable and was able to keep the class interested and participating as well as interested in the material presented." (Hazardous Waste 40-hr. Worker, Trainee from Tennessee)

"La clase estuvo muy bien y me pareció interesante y aprendí muchas cosas de los 2 instructores. [The class was very good, and I found it very interesting. I learned many things from both instructors.]" (OSHA 30-hour, Trainee from Illinois)

International Association of Fire Fighters (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:

"All our instructors were extremely knowledgeable and proficient. They were welcoming and genuine. They were patient and encouraged participation. I wish I had taken this class 20 years ago."

"The hands-on portion was beneficial. I also liked donning and doffing the hazmat suits. It was helpful to move around and perform different tasks with limited mobility and dexterity."

“The most beneficial part of the class was running drills and being able to put my hands on ropes and learning the basic rigging aspect of the class.”

“The most valuable part of the course was going out and doing live training scenarios in industrial settings in our community.”

International Brotherhood of Teamsters (IBT)

IBT delivers training through partnerships with major trucking and rail unions. Below are comments from a 40 hour HAZWOPER class:

“Learned more about hazmat on the job site and how to better protect myself and my co-workers.”

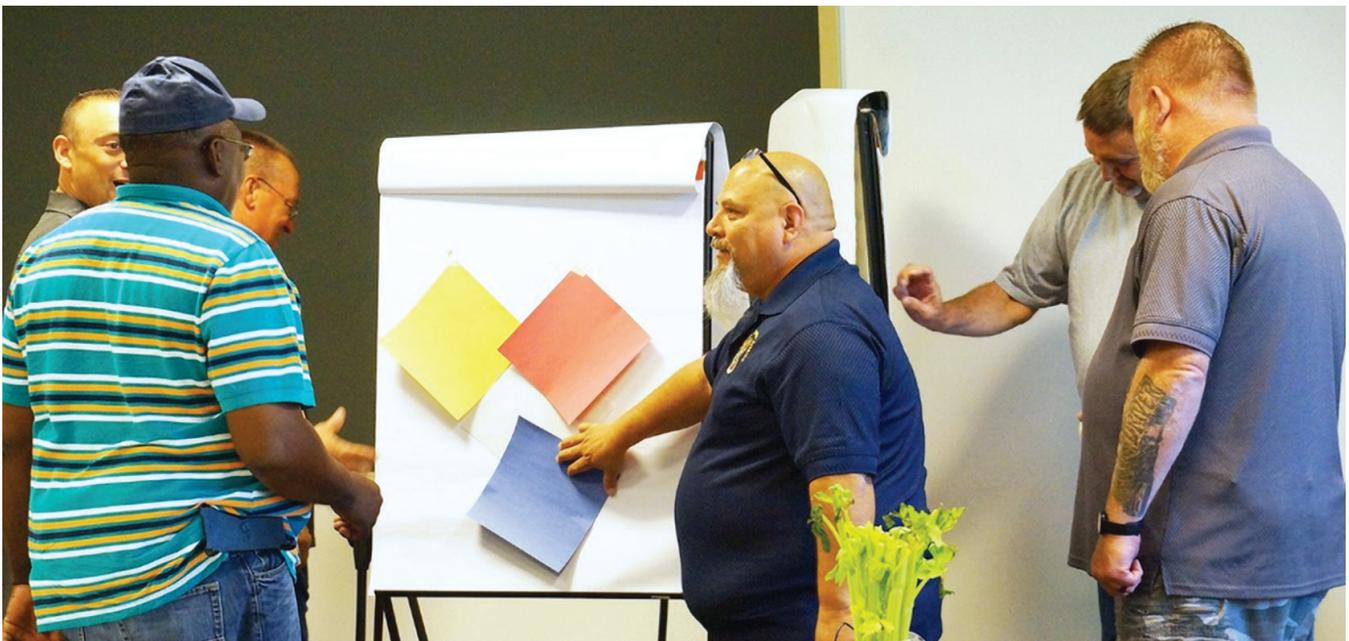
“The amount of hazardous material that is around us is taken for granted a lot of times.”

“Proper health and safety practices to use while at work and other areas in life.”

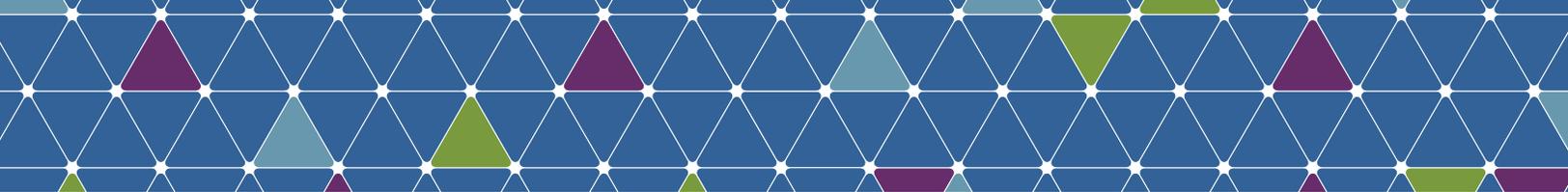
“Learned about safety and about how dangerous some chemicals are and how to contain them.”

“Proper handling techniques and what dangers we can be exposed to.”

“How to work safer and protect myself and others in the workplace.”



IBT trainers developing a training module on Heat Illness and Injury Prevention. (Photo courtesy of IBT)



International Chemical Workers Union Council

In the last DOE Year, the ICWUC Center delivered training at three DOE facilities in a project operated as a consortium in cooperation with the International Association of Machinists and Aerospace Workers (IAMAW).

The training completed was specific to the contractor's needs at each site. For example, Oak Ridge led site worker refreshers and Resource Conservation and Recovery Act Treatment, Storage and Disposal site worker programs. The facility sent new trainers to the train the trainer program in October of 2021 to replenish trainers lost due to attrition. The sites' commitment to maintaining skilled trainers onsite shows their support and dedication to the program, making this flexibility possible and successfully meeting the needs of very different work environments.

The total number of persons trained at DOE sites as of July 31, 2022, was 2,274 persons in 150 sessions (18,986 person-hours). These numbers decreased from previous years, primarily due to the COVID pandemic but increased from last year's numbers.

The ICWUC Center has continued implementing participant evaluation methods developed during the DOE grant. These tests are site-specific and developed by the site trainers with technical support from Center staff. They identify learning needs at the beginning of the program and measure fundamental skills related to each module. The Center works closely with DOE to develop consistent tests with DOE regulations and orders.

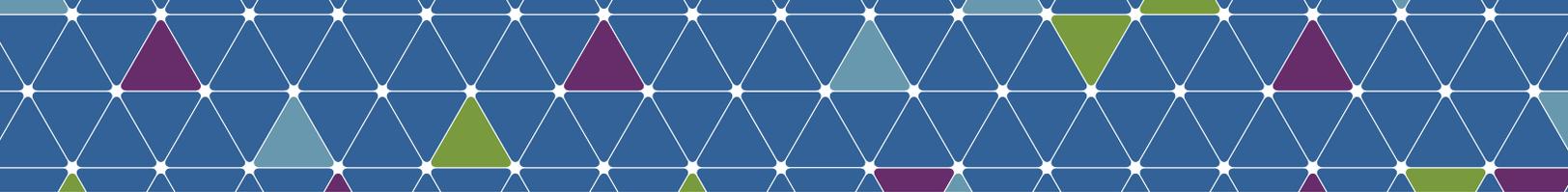
All participants receive pretests and post-tests in the initial general site worker training. Feedback from the trainers' reports shows that the amount of pretest knowledge of participants is slightly increasing. The Center expects this effect at the DOE sites, where the Center conducts annual refresher courses over an extended period. However, pre-training scores from multiple-day classes at most locations, in topic areas related to chemical protective clothing, respirators, decontamination, and labels & placards, show a significant training need. The collaborative team expects these training needs since these participants are either newly hired or are not in jobs that mandate yearly refreshers. With the DOE and contractor mandate to conduct individual testing for initial training, the Center has implemented methods to remediate any participant who does not have a passing score of 80% and avoid any perception of "job jeopardy." The ongoing analysis and monitoring of scores continue to be an effective quality assurance tool for both participants and trainers. These results help shift the curriculum and revise the next refresher to areas with greater training and effectiveness based on comparing test scores across campuses above.

LIUNA Training and Education Fund

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

Data gathered from course evaluations throughout the program year show 98.8% of respondents strongly agree or agree that the course materials were useful and easy to understand. Ninety-nine percent responded positively on the level of difficulty and 98 percent agree or strongly agree that the pace was appropriate. Ninety-eight percent believe they understand the materials well enough to explain the information to others.

For all courses conducted under the DOE, 98.9% of all participants believe the training will help make their work practices and life safer and 97.9% 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:

- The course was going to make work practices easier.
- The courses made the participants aware of health and safety issues which they had not previously considered.
- The instructors were professional and knowledgeable.
- The hands-on training makes the subject easier to understand.

National Partnership for Environmental Technology Education/CCCHST

Examples of the feedback are as follows for key sites:

Amarillo College, supporting the Pantex Site

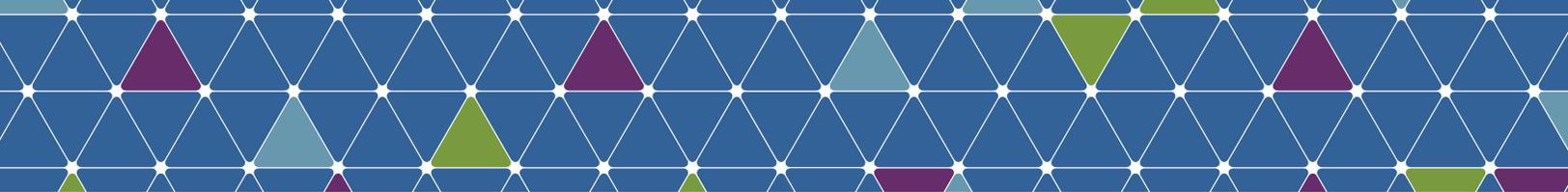
A total of 81 student follow-up evaluations were completed and received for the eight-hour student refresher course. The evaluation instrument asked three questions. Based on the responses to these questions, it's clear that this course has continued to have a positive impact on students.

When asked for instances when students used information from the HAZWOPER course in their jobs:

- 49%—Planned protective action for self and workers,
- 57%—Pre-job analysis for hazards,
- 85%—Wore proper PPE,
- 42%—Knew how to collect proper samples, and how to handle them,
- 60%—Knew how to protect against heat stress,
- 64%—Could identify chemical hazards,
- 37%—Could function within Incident Command System,
- 41%—Could function within Response operations,
- 52%—Could function within Training Drills.

Roane State Community College, supporting the Oak Ridge Site

During this cycle, there were 60 courses offered in a face-to-face classroom setting at Oak Ridge. These courses attracted 557 workers trained with 8,455 contact hours provided. In evaluations, 98% of survey respondents indicated that they were satisfied with the course and 96% gave the mark of 4 or 5 (out of 5)--5 being most satisfied with the course.



United Steelworkers Tony Mazzocchi Center

The United Steelworkers Tony Mazzocchi Center uses film clips and scenarios from “real world” incidents to illustrate the concepts being taught. Their use has garnered the most enthusiasm in comments received from trainees when asked about the high points of the classes:

- “Case videos are excellent in highlighting hazardous issues and how to avoid/eliminate them.”
- “Scenarios give you a good perspective of the dangers involved in our job.”
- “Reviewing and covering real-life scenarios helped me to understand and discuss commonalities and differences in each event.”

The RCRA initial class at the Paducah site was well received by the workers and management that attended. Comments on the evaluation forms included:

- “Liked the hands-on training.”
- “The different handouts have valuable information.”
- “This class will be beneficial for the company and help prevent ‘hidden’ waste in other waste...”
- “I learned, and even the experts that were here clearly learned something.”
- “Good class participation; picked up some tips.”

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 1,600 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.

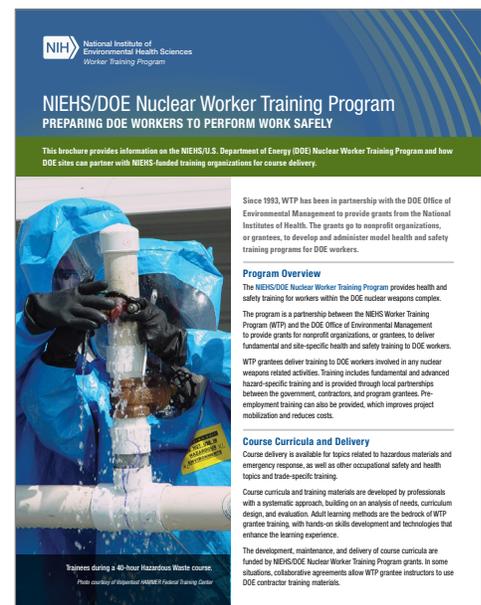
- August 18, 2021 - NIEHS/DOE EM check-in meeting
- September 22, 2022 - NIEHS/DOE EM annual briefing

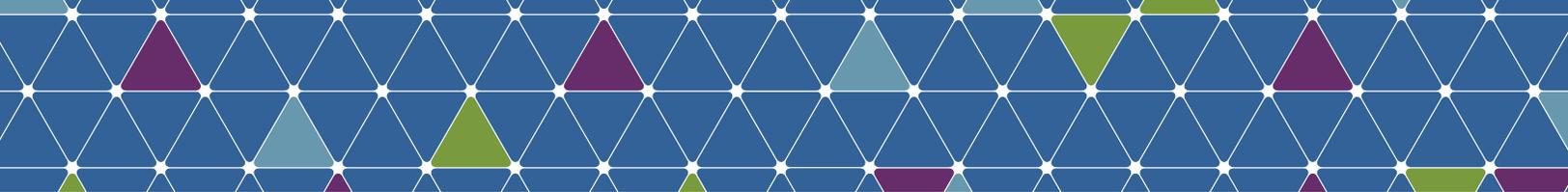
In addition, there was a Labor Training Work Group meeting held in March 2022 that the Clearinghouse Director, Deborah Weinstock participated in.

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:

Partnership fact sheet and process document for contractors: In 2021, 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. These documents were shared at the March EFCOG meeting.





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. Occupational Radiation Protection Final Rule, 10 CFR 835 training support is available to DOE contractors.

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 2022

Grantee	Courses Completed	Workers Trained	Contact Hours
CPWR - The Center for Construction Research and Training	754	10212	140526
International Association of Fire Fighters	19	398	25200
International Brotherhood of Teamsters	224	3441	33836
International Chemical Workers Union	150	2274	18986
Laborers' International Union of North America	312	3191	49981
Partnership for Environmental Technology Education	150	2519	18832
United Steelworkers of America	281	4128	40258
Totals:	1890	26163	327619

Courses Provided through the DOE Program by NIEHS Grantees 2022

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Asbestos Abatement	Asbestos Abatement Supervisor	27	279	952
	Asbestos Abatement Supervisor Refresher	79	811	632
	Asbestos Abatement Worker Basic	31	334	1152
	Asbestos Abatement Worker Refresher	76	896	664
	Asbestos Inspector Certification	2	11	40
	Asbestos Inspector Refresher	5	38	20
	Asbestos Management Planner	1	8	8
	Asbestos Operations & Maintenance Refresher	5	43	44
	Asbestos Abatement Total	226	2420	3512
Biological/Remediation	Microbial Remediation: Mold and Mildew	2	16	16
	Biological/Remediation Total	2	16	16
Confined Space	Confined Space	68	794	796
	Confined Space Total	68	794	796
Electrical Safety	Basic Electrical Training	2	30	32
	Electrical Safety	9	97	96
	Electrical Safety Total	11	127	128

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Emergency Response	Emergency Medical Basic/Advanced	1	13	8
	Emergency Response for Specific Hazards	33	667	99
	Emergency Response/HazMat Spec.	1	15	8
	Emergency Response Train-the-Trainer	1	3	40
	Emergency Response/HazMat Technician	11	232	880
	Incident Management Systems Awareness	5	117	20
	Wildland Urban Interface	5	76	64
	Emergency Response Total	57	1123	1119
Equipment Safety	Crane Operators	3	25	104
	Fall Protection	17	250	104
	Rigging and Signaling	10	65	144
	Scaffold	10	95	160
	Scissor Lift/Aerial Lift	5	51	48
	Equipment Safety Total	45	486	560
Hazard Communication	Hazard Communication	31	651	192
	Hazard Communication Total	31	651	192
Hazmat Transport	HazMat Transportation Awareness	18	285	176
	HazMat Transporter/Basic	4	116	24
	Load Securement	24	360	184
	Hazmat Transport Total	46	761	384
Lead Abatement	Lead Abatement Supervisor	6	50	192
	Lead Abatement Supervisor Refresher	17	238	137
	Lead Awareness	11	185	88
	Lead Abatement Total	34	473	417
OSHA Outreach	General Construction Safety	141	1581	2567.5
	General Construction Train-the-Trainer	17	180	416
	General Industry Safety	27	343	223
	General Industry Train-the-Trainer	2	9	64
	OSHA Outreach Total	187	2113	3270.5
Other	Evaluation of Industrial Ventilation	1	20	24
	Training Methods/Trainer Development	16	180	325
	Other - Total	17	200	349

Course Category	Course Name	Courses Completed	Workers Trained	Contact Hours
Personal Protective Equipment	Respiratory Protection	117	2136	888
	Personal Protective Equipment Total	117	2136	888
Radiological	Radiation Protection Worker/Basic	19	141	152
	Radiation Worker II Training	14	120	336
	Radiation Worker Refresher	13	109	104
	Radiological Control Technician Training	73	1166	796
	Radiological Total	119	1536	1388
RCRA/Industrial	Fire Watch	4	25	16
	RCRA TSD Site Worker	32	274	572
	RCRA/Industrial Total	36	299	588
Refresher - Site Worker/Superfund	Site Supervisor Refresher	1	3	8
	Site Worker Refresher	664	10467	5318
	Refresher - Site Worker/Superfund Cleanup Total	665	10470	5326
Site Worker/Superfund Cleanup	Basic Superfund Site Worker	139	1700	5208
	Haz. Waste Operations	6	141	30
	Site Supervisor Basic	5	51	40
	Site Worker Train-the-Trainer	4	74	176
	Superfund Bridge Training	15	143	352
	Site Worker/Superfund Cleanup Total	169	2109	5806
Triage/First Aid	Adult CPR	4	38	32
	Basic First Aid	56	411	381
	Triage/First Aid Total	60	449	413
Grand Total		1890	26163	25152.5

Total NIEHS Training by DOE Site, Sept. 1, 2021 – July 31, 2022

Site Name	Courses Completed	Course Percentage	Workers Trained	Workers Percentage	Contact Hours	Contact Hours Percentage
Ames Laboratory	1	0%	13	0%	520	0%
Argonne East	74	4%	947	4%	15924	5%
Barker Brothers	4	0%	98	0%	6840	2%
Brookhaven National Laboratory	35	2%	533	2%	9588	3%
Department of Energy - Headquarters	3	0%	36	0%	376	0%
Department of Energy - SF	1	0%	16	0%	480	0%
Formerly Utilized Sites Remedial Action Program	23	1%	150	1%	1744	1%
Hanford Site	422	22%	6745	26%	72064	22%
Idaho National Engineering Laboratory	105	6%	1071	4%	11028	3%
Kansas City Plant	13	1%	118	0%	2216	1%
Lawrence Berkeley	12	1%	156	1%	2106	1%
Lawrence Livermore National Laboratory	8	0%	84	0%	1620	0%
Los Alamos National Laboratory	195	10%	3248	12%	24124	7%
Multiple DOE sites	44	2%	513	2%	12782	4%
Nevada Test Site	82	4%	937	4%	11810	4%
Nuclear Fuel Services	8	0%	113	0%	904	0%
Oak Ridge Field Office	319	17%	4157	16%	54512	17%
Paducah Gaseous Diffusion Plant	124	7%	1627	6%	20402	6%
Pantex Plant	37	2%	641	2%	6656	2%
Pinellas Plant	1	0%	10	0%	400	0%
Portsmouth Gaseous Diffusion Plant	128	7%	1746	7%	18722	6%
Princeton Plasma Physics Laboratory	58	3%	643	2%	16520	5%
Santa Susana Field Laboratory	25	1%	358	1%	5024	2%
Savannah River Site	90	5%	1134	4%	11635	4%
St. Louis Airport Site	18	1%	299	1%	8388	3%
Weldon Springs	37	2%	466	2%	6326	2%
West Valley Demonstration Project	23	1%	304	1%	4908	1%
Grand Total	1890	100%	26163	100%	327619	100%

10-Year Training Summary: NIEHS/DOE Nuclear Worker Training Program, 2012-2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020***	2021****	2022
Number of Grantees**	8	8	8	8	7	7	7	7	7	7	7
Courses Completed	1,963	1,790	1,900	1,830	1,927	2,066	1,679	1,795	1,387	1,901	1,890
Workers Trained	29,842	27,737	28,334	26,396	28,162	32,202	27,769	29,714	19,572	23,096	26,163
Contact Hours	365,083	309,977	311,412	323,316	368,680	389,786	343,923	368,276	214,129	280,577	327,619
Dollars Awarded	\$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	\$9,608,823
Cost Per Contact Hour	\$26.29	\$28.26	\$28.13	\$29.52	\$23.94	\$22.71	\$27.46	\$25.39	\$38.98	\$32.95	\$29.33

** 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, 1994-2022

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
2022	1,890	26,163	327,619
Totals:	49,857	720,745	9,367,651

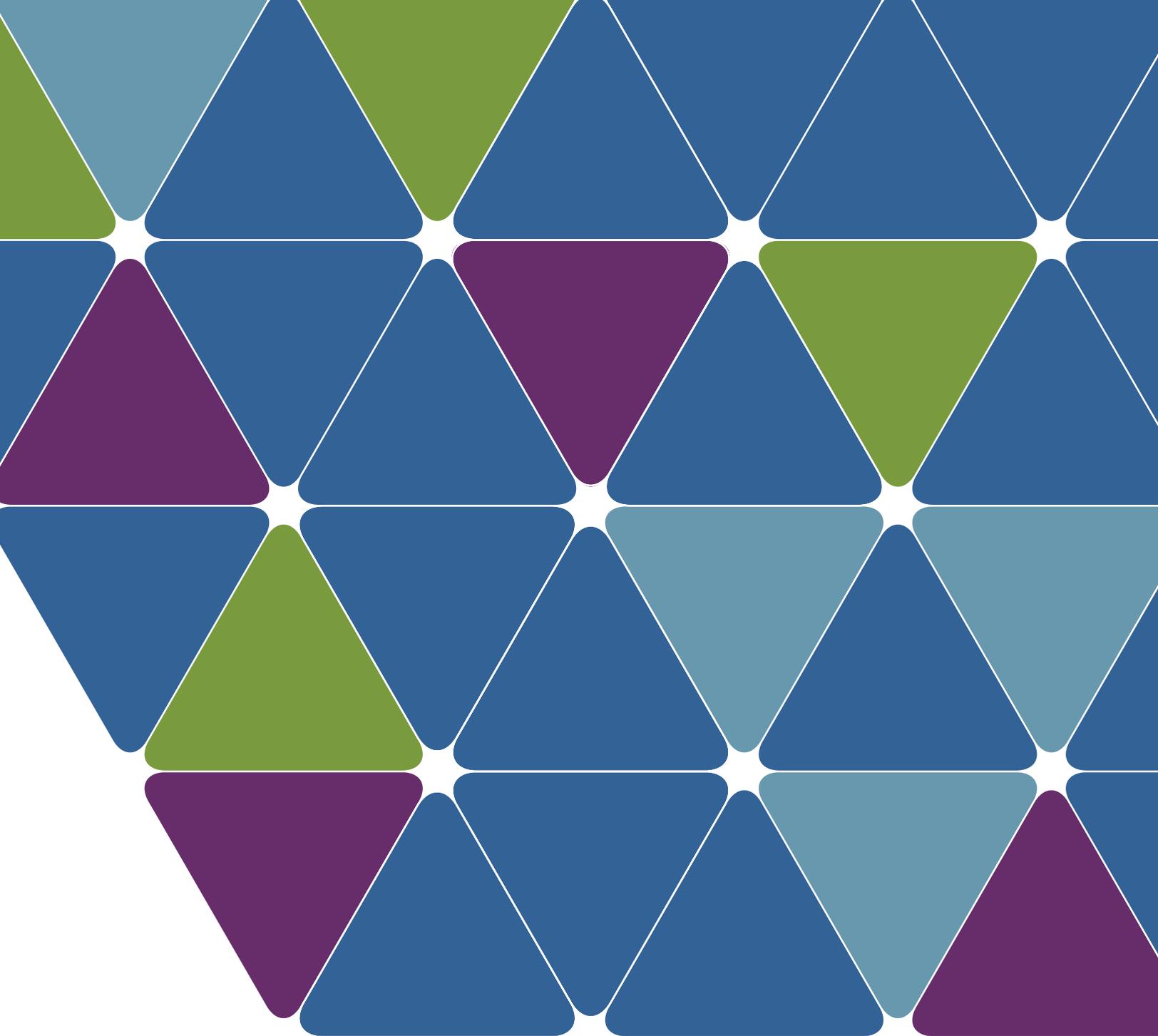
Projected Versus Actual Training, Aug. 1, 2021 – July 31, 2022

Grantee	Projected	Count of Course Status	Percent Courses	Projected	Sum of # of Workers	Percent Workers	Projected	Sum of Total Hours	Percent Contact hours
CPWR - The Center for Construction Research and Training	642	754	117%	11,111	10212	92%	153,526	140526	92%
International Association of Fire Fighters	15	19	127%	300	398	133%	17,600	25200	143%
International Brotherhood of Teamsters	207	224	108%	3253	3441	106%	38,669	33836	88%
International Chemical Workers Union	48	150	313%	850	2274	268%	9,200	18986	206%
Laborers' International Union of North America	144	312	217%	1440	3191	222%	28,280	49981	177%
Partnership for Environmental Technology Education	437	150	34%	7695	2519	33%	57,317	18832	33%
United Steelworkers of America	276	281	102%	5504	4128	75%	60,160	40258	67%
Grand Total	1769	1890	107%	30,153	26163	87%	364,752	327619	90%

Projected Training Courses for Aug. 1, 2022 – July 31, 2023

Course Name	Number of Courses Projected	Total Course Hours Projected
15 Hour Disaster Site Worker	7	111
Adult CPR	35	250
Asbestos Abatement Supervisor	11	440
Asbestos Abatement Supervisor Refresher	31	248
Asbestos Abatement Worker Basic	17	608
Asbestos Abatement Worker Refresher	28	224
Asbestos Awareness	1	4
Asbestos Control Certification	4	96
Asbestos Inspector Certification	5	106
Asbestos Inspector Refresher	10	40
Asbestos Management Planner	6	112
Asbestos Operations. & Maintenance Refresher	13	152
Basic First Aid	27	228
Basic Superfund Site Worker	115	4,600
CAMEO	3	72
Confined Space	25	648
Crane Operators	4	116
Cutting & Burning	2	32
Electrical Safety	26	318
Emergency Response Awareness	2	11
Emergency Response Incident Command	4	80
Emergency Response for Specific Hazards	92	241
Emergency Response/HazMat Technician	7	560
Ergonomics (DOE)	1	16
Evaluation of Industrial Ventilation	6	186
Fall Protection	13	295
Fire Watch	10	40
Forklift Operator Training Program	1	16
GHS-Hazard Communication	1	15
General Hazardous Waste Train-the-Trainer	2	136
General Construction Safety	117	2,212
General Industry Safety	46	694
Hazardous Waste Operations	30	120
HazMat Transportation Awareness	10	68
HazMat Transporter/Basic	25	356

Course Name	Number of Courses Projected	Total Course Hours Projected
Hazard Communication	30	120
Hazardous Waste Operations Awareness	20	80
Incident Management Systems Awareness	3	48
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	11	80
Lockout/Tagout	23	46
Off Road Equipment	24	96
Process Safety Management	2	48
RCRA TSD Site Worker	52	680
Rad. Protection Worker/Basic	25	78
Radiation Worker II Training	26	512
Radiation Worker Refresher	10	90
Radiological Control Technician Training	1	136
Respiratory Protection	48	396
Rigging and Signaling	37	498
Scaffold	6	112
Scissor Lift/Aerial Lift	1	8
Site Supervisor Refresher	14	112
Site Worker Refresher	633	5,064
Site Worker Train-the-Trainer	4	96
Superfund Bridge Training	13	296
Training Methods/Trainer Development	20	452
Trench Protection Principles	5	128
Totals:	1,769	22,967



National Institute of
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