

Concept Clearance

Branch: Worker Education and Training Branch

Council Period: 202310

Concept Title: Hazardous Training at DOE Nuclear Weapons Complex (UH4)

Introduction

The purpose of the [NIEHS/DOE Nuclear Worker Training Program](#) is to support the development of model programs for the training and education of workers engaged in activities related to hazardous materials and waste generation, removal, containment, transportation and emergency response within the DOE nuclear weapons complex.

This notice of funding opportunity announcement (NOFO) aims to prevent work-related harm through safety and health training. The training will transmit skills and knowledge to workers in how best to protect themselves and their communities from exposure to hazardous materials encountered during hazardous waste operations, facility decommissioning and decontamination, hazardous materials transportation, environmental restoration of contaminated facilities or chemical emergency response. Currently, tens of thousands of DOE employees require safety and health training to help reduce the risk of being exposed during work to hazardous materials and hazardous waste products.

This program supports institutional competency-building for the delivery of model training and education programs to hazardous materials and waste workers in the DOE nuclear weapons complex. Proper use of NIEHS and DOE training resources will result in federal and contractor employees who are highly skilled and capable of carrying out critical missions in a safe and reliable manner consistent with recognized standards of excellence. The planning and conduct of training programs should include alignment with mission priorities and efficient use of resources.

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

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

As stated above, under SARA Section 126(g), NIEHS developed and administers the Worker Training Program (WTP). During 1992, DOE evaluated WTP for adaptation to its own program and training needs and determined that the program was suitable. To rapidly move to the implementation stage and to leverage program resources, DOE entered into an agreement with NIEHS to award and administer a grants program that adapts the NIEHS WTP to meet the needs of the DOE nuclear weapons complex. The program will continue to use the cooperative agreement mechanism to administer this program.

Protecting worker health and safety training delivery is a priority of the Secretary of Energy and is a primary goal of the Office of Environmental Management (EM). As the DOE mission has shifted from weapons production to environmental restoration, the site worker is exposed to new operations and hazards while conducting restoration activities, many of which are associated with potential exposure to hazardous substances and wastes. Environmental cleanup is a complex undertaking, which may often pose significant dangers to remediation workers, as well as to residents of the surrounding community. Throughout the DOE complex, contamination issues resulting from the historic mission of weapons production, as well as from extensive use of radioactive materials and highly toxic chemicals, have created a unique challenge for those managing environmental cleanups. There is great need for highly trained workers to carry out remediation work.

Training Goals and Scope

The goal of the NIEHS/DOE Nuclear Worker Training Program (WTP) is to provide high quality training to ensure that DOE site workers are prepared to work safely in hazardous environments, and that workers have sufficient knowledge to identify hazardous situations and to take appropriate actions to protect themselves, fellow workers, and the environment. We work collaboratively and support the DOE Office of Environmental Management's (EM) mission and training, which 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.

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 \$28.67 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.

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

Major program objectives for the NIEHS/DOE Nuclear Worker Training Program include:

- Establish DOE and contractor safety and health training programs with best practices by drawing on the skills and knowledge of experienced workers on the job.
- Facilitate and promote a culture of continuous learning, integrated safety management, and improved task readiness within the DOE complex. This includes assisting in the development of a positive safety culture within the complex.
- Act as a prime source for new training methodologies, new and updated curricula, innovative techniques, and lessons learned for all DOE operations through partnering with site contractors, regulatory personnel, the DOE National Training Center, and other stakeholders.
- Reduce safety and health training costs through standardization, centralized partner development, and minimizing necessary travel and expenses. This includes participation as appropriate with [DOE directive P 364.1 Health and Safety Training Reciprocity](#), which establishes a policy for reciprocity of employee health and safety training among DOE entities responsible for employee health and safety at DOE sites and facilities to increase efficiency and effectiveness of Departmental operations while meeting established health and safety requirements.
- Reduce redundancy within the DOE complex by utilizing existing high-quality safety and health training programs located in partner organizations and integrating best-in-class technical training program capabilities.
- Maximize the use of instructional technologies in the classroom where available and appropriate to support effective training delivery and student evaluation. Section 10.5 of the NIEHS WTP Minimum Criteria referenced below (Instructional Technologies) can be used to help assess how to best integrate web-based, virtual, and computer-based methods with traditional hands-on and classroom centered learning.
- Enhance reciprocity and increase focus for federal workers with our DOE partners.

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 document](#). Consideration should also be given to [Appendix E of 29 CFR 1910.120](#) (59 FR 43268, August 22, 1994), which references much of the NIEHS Minimum Criteria.

During 2020-2025, WTP cooperative agreement funding supported seven consortia. Since the beginning of the program in 1993, 720,727 workers have received 9,367,259 contact hours of training in 49,850 courses. In 2021-2022: 26,163 workers received 327,619 contact hours of training in 1,890 courses at or around 27 DOE sites. The Hanford Site had the highest number of workers trained, followed by Oak Ridge, Los Alamos, Portsmouth, Paducah, Savannah River, and Idaho National Laboratory. These were the only sites in which over 1000 workers were trained during this period. Of the 327,619 contact hours, the highest numbers of contact hours were in the Site Worker Refresher, OSHA Construction Outreach, Asbestos Abatement, Personal Protective Equipment and Radiological work. These courses are critical for DOE worker site safety and ensuring worker readiness for employment. Assuring cultural sensitivity, multilingual communications, and an appreciation for inclusion and diversity are all essential hallmarks of this program and need to be embedded in every responsive application. In May 2023, the NIEHS/DOE Nuclear Worker Training Program celebrated 30 years of existence with a program at the 2023 NIEHS National Trainers Exchange in Indianapolis, IN. Review the current [NIEHS/DOE Nuclear Worker Training Program Accomplishments and Highlight Report](#) for more information about the latest accomplishments of this program.

Mechanism and Justification

The program will continue to use the cooperative agreement mechanism UH4 entitled “Hazardous Waste Worker Health and Safety Training Cooperative Agreements (NIEHS)” and described as “To develop, implement, and evaluate programs to train workers who are or may be engaged in activities related to hazardous waste removal, containment, or emergency response.” Authorization to convert the original grants program to a cooperative agreements program was obtained from the Associate Director for Extramural Affairs (ADEA) and the NIH Cooperative Agreement Panel (CAA) in September 1991. As a result of the experience gained during over thirty years of operating the Worker Training Program under the statutory authority of Section 126(g) of SARA, NIEHS has determined that the cooperative agreement should continue to be the most appropriate assistance instrument for the following reasons:

- a) The need to assure national coordination and to avoid duplication of efforts and overlap in program development and delivery: NIEHS will promote national coordination among awardees by convening two program workshops each year and by conducting annual reviews of each awardees' program accomplishments and evaluation results for use in future training activities.
- b) The need to facilitate the ongoing exchange of relevant scientific and technical information between awardees and the Institute: to promote effective exchange of information, NIEHS will convene two topical technical workshops on an annual basis, as well as maintain a National Clearinghouse for Worker Safety and Health Training for Hazardous Materials, Waste Operations and Emergency Response.
- c) The need to ensure regulatory compliance with applicable federal worker health and safety requirements and national consistency in the delivery of training curricula; NIEHS staff will have programmatic involvement in the review of training manuals and curricula materials

before their use in training activities by grant recipients, and conduct regular site reviews by program staff to ensure compliance with federal standards and consistent use of training materials and presentation of curricula.

- d) The mutual interest of grant recipients and the Institute in developing peer-reviewed, high quality model training programs for hazardous waste workers and emergency responders; the process for developing model programs will include grant recipients' development of evaluations that assess trainee learning and use of training at the worksite, effective teaching techniques and pedagogical approaches, and a consensus between grant recipients and the Institute regarding adequate minimum criteria for effective worker training programs.
- e) The need to have a timely and appropriate response to the role of the NIEHS WTP and its grant recipients in the National Response Framework (NRF), National Disaster Recovery Framework, and the National Contingency Plan. The Department of Health and Human Services, which includes the National Institutes of Health and the NIEHS, is a signatory to the NRF. Upon the activation of the NRF, NIEHS may be activated by the Occupational Safety and Health Administration (OSHA) under the NRF's Worker Safety Health Annex to provide:
 - Training technical assistance such as instructional staff, curriculum development experts, subject-matter experts, and professional staff.
 - Safety training to worker target populations with respect to the nature and location of the incident and the particular hazards.
 - Assistance and support in the development and delivery of site-specific health and safety training through
 - Appropriately qualified WTP awardee instructional staff.
 - Assistance such as respirator fit testing and distribution of personal protective equipment.

The use of a cooperative agreement as an assistance instrument with substantial programmatic involvement by NIEHS staff is required to assure adequate national coordination of a diverse training program focused on a number of different target populations as identified by Congress in Section 126 of SARA. The role of the NIEHS will be to facilitate, not to direct, the development of a high-quality national worker safety and health training resource. The substantial programmatic involvement by NIEHS staff has been an important factor in the continuing success of the training program. A Program Official/Coordinator designated by the Director, NIEHS for the Worker Training Program provides substantial programmatic involvement and facilitate administration and coordination of the cooperative agreements under this program. The NIEHS Program Official/Coordinator manages activities of mutual interest and benefit to awardees and the Institute. The primary objective of the Worker Training Program will be to stimulate collaborative work between NIEHS and the awardees in the creation of model worker safety and health training programs. Ongoing participation by NIEHS staff has assured a high level of quality in training development, a robust exchange of scientific and technical information, and the opportunity for solid partnerships with other participating federal agencies. The program welcomes and encourages new applicants who are able to expand the program's reach to new worker populations and their partners.

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; CERCLA and respective DOE Orders to meet the requirements of the Occupational Safety and Health Administration's (OSHA) regulations 20 CFR 1910.120; the EPA Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements (40 CFR 300.150) and other initiatives.

WTP-focused hazardous waste training has long been recognized as protecting the environment and the health of surrounding communities, yet new health and safety concerns or regulations for workers emerge across the complex or at individual sites. Training approaches can be responsive and innovative for these new hazards to the hazardous waste workforce, such as in the areas of green remediation, green chemistry, nanotechnology, new industrial processes and chemicals, combustible dust, climate change, the storage of nuclear waste, beryllium safety, respiratory protection at tank farms, and infectious diseases.

To address unmet mental health and resilience needs identified following disasters and the crisis surrounding misuse of prescription drugs in occupational settings, WTP has developed curricula and held workshops to develop training options for organizations to address these concerns with workers and communities. Training tools are available on disaster worker resiliency and prevention of occupational exposure to fentanyl and other opioids, and an awareness level training on the COVID-19 pandemic's impact on mental health and substance use. For a list of these curricula, applicants should refer to the [WTP Responder and Community Resilience page](#) and the [Opioids and Substance Use: Workplace Prevention and Response page](#).

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.

Applicants may consider how these new emerging concerns may be incorporated into hazmat safety and health training at DOE nuclear weapons sites through existing or new programs and curricula. The program has made the following changes and will continue to update these efforts for the next five years.

- 1) Expand our focus on infectious diseases, especially COVID-19, based on emergency appropriations to address workers at DOE sites.
- 2) Address comments from Council reviewers from September 2018, which indicated they wanted us to try to increase the applicant pool, and to include fenceline communities in HAZMAT Training. To increase the applicant pool and include fenceline community in training, our approach is to broaden our consortiums and partners to bring in new training sites. Another way to include fenceline communities is

to expand our focus on Executive Orders on Environmental Justice assuring cultural sensitivity, multilingual communications and an appreciation for inclusion and diversity are all essential hallmarks of this program, which need to be embedded in every responsive application. Specific Executive Orders include: Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Executive Order 14008 expands on this theme and includes references to environmental justice, racial equity and climate change using a government wide approach with a focus on Justice40, and recommends that applicants use the Climate and Economic Justice Screening Tool (CEJST) and/or CDC Environmental Justice Index to help identify these disadvantaged populations; and so does the recently added Executive Order 14096 of April 21, 2023 Revitalizing Our Nation's Commitment to Environmental Justice for All.

- 3) Implement actions to address the [National Academies of Sciences, Engineering, and Medicine's 'Frameworks for protecting workers and the public from inhalation hazards' \(2022\)](#), which reinforces the needs of workers, including members of the most vulnerable and underserved populations, facing inhalation hazards.
- 4) Use the new WTP Strategic Plan and NIEHS Strategic Plan both under development to incorporate any new areas as appropriate.
- 5) Address any emerging threats with safety and health training in emerging industries and technologies such as man-made, climate disasters/resilience, nuclear cleanup work around vitrification and alternative energy.
- 6) Enhance reciprocity and increase focus to train federal and new contract workers with our DOE partners.

Since receiving concept clearance from the National Advisory Environmental Health Sciences Council (NAEHSC) at its September 2018 meeting, a competitive Notice of Funding Opportunity Announcement is developed every five years by NIEHS Worker Education and Training Branch (WETB) staff in consultation with DOE. The Council recommended that the program continue for the next five years.

Total cost for program is approximately \$9.3 Million based on annual appropriations with an expected cost per grant based on the applicant's target population of local, regional, or national scope. Amounts ranged from \$700,000 to \$3,600,000 last round. We anticipate funding 18-22 awards.

Proposed Timeline:

Council Concept Clearance:	September 2023
RFA Release Date:	April/May 2024
Application Due Dates:	July/August 2024
Peer Review Dates:	November/December 2024
Council Review Dates:	January/February 2025
Earliest Anticipated Start Date:	July 2025

Concept Clearance

Branch: Worker Education and Training Branch

Council Period: 202310

Concept Title: Hazardous Materials Worker Health and Safety Training

Introduction

The Superfund Amendments and Reauthorization Act of 1986 (SARA), Section 126(g), authorizes an assistance program for training and education of workers engaged in activities related to hazardous waste generation, removal, containment or emergency response and hazardous materials transportation and emergency response. The Congress assigned responsibility for administering this program to the NIEHS, an Institute of the National Institutes of Health (NIH) of the US Department of Health and Human Services (DHHS). SARA authorizes NIEHS Worker Training Program (WTP) to fund multi-state or national non-profit organizations with a demonstrated track record in developing and delivering high quality training to workers who are involved in handling hazardous waste or in responding to emergency releases of hazardous materials. WTP supports curricula development and training programs throughout the United States to help employers meet requirements under the Occupational Safety and Health Administration's Hazardous Waste Operations and Emergency Response (HAZWOPER) standard and the U.S. Environmental Protection Agency's standards for hazardous waste operations and emergency response.

A competitive Request for Applications has been developed every five years by NIEHS Worker Education and Training Branch (WETB) staff in consultation with federal agency partners. Successful applicants are required to re-apply for a 5-year cycle and to demonstrate adequate progress each year in reaching the goals of their application. During 2020-2024, WETB cooperative agreement funding supported 17 consortia that represent over 100 training organizations.

This training program has 3 distinct program areas: Hazardous Waste Worker Training Program, Environmental Career Worker Training Program, and the Hazmat Disaster Preparedness Training Program.

- **Hazardous Waste Worker Training Program (HWWTP)** – Provides model occupational safety and health training for workers who are or may be engaged in activities related to hazardous waste removal or containment or chemical emergency response. Under the HWWTP – approximately 4.7 million workers trained overall representing 39 million worker contact hours since 1987. For the 2022-2023 period, 113,224 workers trained by 17 current grantees. Total funding was \$18.9 Million for FY23.
- **Environmental Career Worker Training Program (ECWTP)** – Focuses on delivering comprehensive preemployment training to underserved and disadvantaged individuals to prepare them for employment in the environmental restoration, brownfields, hazardous materials and construction fields. Overall, the program has sustained 28 years of success in training and empowering un/underemployed individuals to obtain sustainable careers. Since 1994 over 14,000 workers have been trained with a job placement rate of 70% with 512 workers trained for the period of 2022-2023 for a total of \$4.1 million for FY23.
- **Hazmat Disaster Preparedness Training Program (HDPTP)** – This program is to enhance the safety and health training of current hazardous materials workers and chemical responders, to train skilled response personnel, to create materials and deliver training to workers responding to a disaster, and to augment prevention and preparedness efforts in a wide variety of high-risk settings. Approximately 247,788 workers trained overall representing 2.2 million worker contact hours since 2006. This past year, 24,861 workers were trained by 14 current grantees for a total of \$3.4 Million for FY23.

The concept received clearance by the National Advisory Environmental Health Sciences Council (NAEHSC) at its September 2018. More than 5 million workers across the United States under the HWWTP and HDPTP have received safety and health training. WTP ensures the safety and health of workers in the aftermath of disasters and public health emergencies. Over the years, WTP grantees have responded to the September 11th terrorist attacks, Deepwater Horizon Gulf Oil Spill, Ebola virus, COVID-19, as well as numerous hurricanes, floods, wildfires, and tornadoes. WTP prioritizes disaster preparedness and response training with a focus on reaching the most at-risk communities and vulnerable workers involved in cleanup and response.

WTP received supplemental funding through the Disaster Relief Act of 2019. The funding supported training of workers and communities affected by a variety of natural disasters. Between August 2019 and May 2021, 60 courses were delivered to 1,236 workers. The most workers were trained in California (640 workers) followed by Florida (125 workers) and Louisiana (125 workers). WTP also used supplemental funds to host three virtual town hall meetings where participants gathered from the Southeast, Gulf Coast, West, and Southwest regions to discuss how natural disasters and COVID-19 impact disadvantaged communities and how the federal government can better support these communities before, during, and after disasters.

In June 2015, NIEHS began the Ebola Biosafety and Infectious Disease Response which was mentioned at the last council. In addition, WTP received \$10 million in emergency appropriations from the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020. WTP had a swift response to the COVID-19 pandemic. Altogether, WTP consortia delivered more than 2,800 online and in-person courses and trained more than 54,000 workers using supplemental funds. Several WTP grantees used funds to establish COVID-19 recovery centers, where they partnered with local businesses and organizations to train workers and coordinate resources to promote recovery in disadvantaged communities that face social inequities. Overall, WTP's response to the COVID-19 pandemic is based on years of experience and the program's capacity to address infectious diseases, bloodborne pathogens, and other biosafety hazards.

WTP also funds the National Clearinghouse for Worker Safety and Health Training, a national resource for hazardous waste worker curricula, technical reports, and weekly news on hazardous materials, waste operations, and emergency response. The National Clearinghouse supports the efforts of WTP staff and awardees in providing health and safety training to workers engaged in activities related to hazardous materials and waste generation, removal, containment, transportation, and emergency response.

To address unmet mental health and resilience needs identified following disasters and the crisis surrounding misuse of prescription drugs in occupational settings, WTP has developed curricula and held workshops to develop training options for organizations to address these concerns with workers and communities. Training tools are available on disaster worker resiliency and prevention of occupational exposure to fentanyl and other opioids, and an awareness level training on the COVID-19 pandemic's impact on mental health and substance use. For a list of these curricula, applicants should refer to the [WTP Responder and Community Resilience page](#) and the [Opioids and Substance Use: Workplace Prevention and Response page](#).

In June 2022, ECWTP was selected as a participant in the White House Justice40 Initiative. This initiative aims to ensure that federal agencies deliver 40% of the overall benefits to workforce development for disadvantaged communities.

In September 2023, WTP will hold a meeting in San Juan, Puerto Rico to promote health, safety, and recovery training following declared disasters, such as hurricanes. The meeting featured discussions among program staff and grantees who received supplemental funds via the recent Consolidation Appropriation Act, 2023. It will support nine grantees, aiming for locations in Puerto Rico, Florida, New Mexico, Washington, Tennessee, Maine, three affiliated tribes in North Dakota, Illinois, Minnesota, Kentucky, Virginia, Alaska, Massachusetts, and Rhode Island.

Training Goals and Scope

Goal One: Through the use of cooperative agreements, support the development of model programs for the training and education of workers engaged in activities related to hazardous materials and waste generation, removal, containment, transportation, and emergency response.

Goal Two: To prevent work related harm by assisting in the training of workers in how best to protect themselves and their communities from exposure to hazardous materials encountered during hazardous waste operations, hazardous materials transportation, environmental restoration of contaminated facilities or chemical emergency response. A variety of sites, such as those involved with chemical waste cleanup and remedial action and transportation related chemical emergency response may pose severe health and safety concerns to workers and the surrounding communities. These sites are often characterized by the multiplicity of substances present, the presence of unknown substances, and the general uncontrolled condition of the site. The program will also incorporate infectious disease response training for workers across sectors who may be at risk of exposure to infectious pathogens.

Goal Three: To assist organizations with development of institutional competency to provide appropriate model training and education programs to hazardous materials and waste workers by building national consortia to reach thousands of workers in all US states and provinces.

Mechanism and Justification

The program will use the cooperative agreement mechanism U45 entitled "Hazardous Waste Worker Health and Safety Training Cooperative Agreements (NIEHS)" and described as "To develop, implement, and evaluate programs to train workers who are or may be engaged in activities related to hazardous waste removal, containment, or emergency response." Authorization to convert the original grants program to a cooperative agreements program was obtained from the Associate Director for Extramural Affairs (ADEA) and the NIH Cooperative Agreement Panel (CAA) in September 1991. As a result of the experience gained during over thirty years of operating the Worker Training Program under the statutory authority of Section 126(g) of SARA, NIEHS has determined that the cooperative agreement should continue to be the most appropriate assistance instrument for the following reasons:

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- b. The need to facilitate the ongoing exchange of relevant scientific and technical information between awardees and the Institute: to promote effective exchange of information, NIEHS will convene two topical technical workshops on an annual basis, as well as maintain a National Clearinghouse for Worker Safety and Health Training for Hazardous Materials, Waste Operations and Emergency Response.
- c. The need to ensure regulatory compliance with applicable federal worker health and safety requirements and national consistency in the delivery of training curricula; NIEHS staff will have programmatic involvement in the review of training manuals and curricula materials before their use in training activities by grant recipients, and conduct regular site reviews by program staff to ensure compliance with federal standards and consistent use of training materials and presentation of curricula.
- d. The mutual interest of grant recipients and the Institute in developing peer-reviewed, high quality model training programs for hazardous waste workers and emergency responders; the process for developing model programs will include grant recipients' development of evaluations that assess trainee learning and use of training at the worksite, effective teaching techniques and pedagogical approaches, and a consensus between grant recipients and the Institute regarding adequate minimum criteria for effective worker training programs.
- e. The need to have a timely and appropriate response to the role of the NIEHS WTP and its grant recipients in the National Response Framework (NRF), National Disaster Recovery Framework, and the National Contingency Plan. The Department of Health and Human Services, which includes the National Institutes of Health and the NIEHS, is a signatory to the NRF. Upon the activation of the NRF, NIEHS may be activated by the Occupational Safety and Health Administration (OSHA) under the NRF's Worker Safety Health Annex to provide:
 - Training technical assistance such as instructional staff, curriculum development experts, subject-matter experts, and professional staff.
 - Safety training to worker target populations with respect to the nature and location of the incident and the particular hazards.
 - Assistance and support in the development and delivery of site-specific health and safety training through Appropriately qualified WTP awardee instructional staff.
 - Assistance such as respirator fit testing and distribution of personal protective equipment.

The use of a cooperative agreement as an assistance instrument with substantial programmatic involvement by NIEHS staff is required to assure adequate national coordination of a diverse training program focused on a number of different target populations as identified by Congress in Section 126 of SARA. The role of the NIEHS will be to facilitate, not to direct, the development of a high-quality national worker safety and health training resource. The substantial programmatic involvement by NIEHS staff has been an important factor in the continuing success of the training program. A Program Official/Coordinator designated by the Director, NIEHS for the Worker Training Program provides substantial programmatic involvement and facilitate administration and coordination of the cooperative agreements under this program. The NIEHS Program Official/Coordinator manages activities of mutual interest and benefit to awardees and the Institute. The primary objective of the Worker Training Program will be to stimulate collaborative work between NIEHS and the awardees in the creation of model worker safety and health training programs. Ongoing participation by NIEHS staff has assured a high level of quality in training development, a robust exchange of scientific and technical information, and the opportunity for solid partnerships with other participating federal agencies. The program welcomes and encourages new applicants who are able to expand the program's reach to new worker populations and their partners.

The program has made the following changes and will continue to update these efforts for the next five years.

- 1) Expand our focus on any new emerging infectious diseases using our knowledge of responses for COVID-19 and the training conducted under emergency appropriations to safely protect workers.
- 2) Address comments from Council reviewers from September 2018, which indicated they wanted us to try to increase the applicant pool, and to include fenceline communities in HAZMAT Training. To increase the applicant pool and include fenceline community in training, our approach is to broaden our consortiums and partners to bring in new training sites. Another way to include fenceline communities is to expand our focus on Executive Orders on Environmental Justice assuring cultural sensitivity, multilingual communications and an appreciation for inclusion and diversity are all essential hallmarks of this program, which need to be embedded in every responsive application. Specific Executive Orders include: Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Executive Order 14008 expands on this theme and includes references to environmental justice, racial equity and climate change using a government wide approach with a focus on Justice40, and recommends that applicants use the Climate and Economic Justice Screening Tool (CEJST) and/or CDC Environmental

Justice Index to help identify these disadvantaged populations; and so does the recently added Executive Order 14096 of April 21, 2023 Revitalizing Our Nation's Commitment to Environmental Justice for All.

- 3) Implement actions to address the [National Academies of Sciences, Engineering, and Medicine's 'Frameworks for protecting workers and the public from inhalation hazards' \(2022\)](#), which reinforces the needs of workers, including members of the most vulnerable and underserved populations, facing inhalation hazards.
- 4) Use the new WTP Strategic Plan and NIEHS Strategic Plan both under development to incorporate any new areas as appropriate.
- 5) Address any emerging threats with safety and health training in emerging industries and technologies such as man-made, climate disasters/resilience, radiological and alternative energy.

Total cost for program is approximately \$32-33 Million based on annual appropriations with an expected cost per grant based on the applicant's target population of local, regional, or national scope. Amounts ranged from \$630,000 to \$3,600,000 last round. We anticipate funding 18-22 awards.

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Earliest Anticipated Start Date:	June 2025

Concept Clearance

Branch: Worker Education and Training Branch

Council Period: 202310

Concept Title: SBIR E-Learning for HAZMAT and Emergency Response (R43/R44)

Introduction

The Worker Training Program (WTP) has a unique requirement to further the development of e-Learning health and safety Technology-Enhanced Training Products from a variety of delivery methods to assist both students and instructors in the training and education process. The major objective of the NIEHS WTP is to prevent work related harm by assisting in the training of workers in how best to protect themselves and their communities from exposure to hazardous materials. The financial support for this initiative comes directly from NIEHS Worker Education and Training Branch SBIR funds. This program encourages Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) that propose to further the development of Technology-Enhanced Training Products for the health and safety training of hazardous materials (HAZMAT) workers; waste treatment personnel; skilled support personnel associated with an emergency/disaster; emergency responders in biological hazard response, infectious disease response, and medical waste cleanup; emergency responders in disasters; and worker resiliency training. Technology-enhanced training products as defined by the WTP include, but are not limited to, supporting training through various venues such as online training, mobile device training, virtual reality, and serious gaming. These advanced technologies complement all phases of training that can enhance, supplement, improve, and provide health and safety training for hazardous materials workers.

Research Goals and Scope

This program focuses on the development of e-Learning health and safety training products from a variety of delivery methods to assist both students and instructors in the training and education process. Note that all products must be directly related to the health and safety training of workers exposed to hazardous materials (HAZMAT). Workers that may be exposed to these hazards include, but are not limited to, workers cleaning up Superfund sites; waste treatment personnel; skilled support personnel associated with an emergency or disaster; emergency responders in infectious disease response and disasters; and environmental restoration, waste treatment, and emergency response workers at sites under the mission of the U.S. Department of Energy (DOE) Office of Environmental Management and other DOE sites. Products are encouraged that support proficiency and competency in distance learning, that complement face-to-face hands-on demonstration, and that support and allow training addressing literacy and cultural challenges.

The following three areas describe the type of products that will be supported under this SBIR NOFO.

A. Products to support e-Teaching in safety and health training:

E-Teaching in safety and health training encompasses products that assist trainers/instructors in developing and delivering safety and health training in a number of environments ranging from classroom to remote learning situations. Potential products include, but are not limited to, products aimed at peer-trainers or worker-trainers; trainers needing assistance with language, literacy, or cultural differences in the classroom; trainers needing assistance in developing small group activities and other teaching methodologies; products supporting training in disaster scenarios; and technology applications for broadcasting safety and health classes and resources to remote learners.

B. Products to support e-Learning in safety and health training:

E-Learning in safety and health training involves technology deployment to provide individualized or small group-based training in learning centers, in a technology-enabled "smart classroom," or to a learner's desktop, cell phone, laptop, or tablet. This might also utilize social media applications. As a technology-enhanced training option, e-Learning is used to enable individualized learning, at the learners' convenience and own pace, prior to, as part of, after, or in place of classroom training. This includes topic-oriented training products that address clearly identified health and safety issues involving hazardous materials and emergency and disaster response.

C. Technology-enhanced training products to support the safety and health training of workers exposed to known, emerging, and new hazards from disasters; disaster preparedness and response resiliency training; job training for underserved and vulnerable workers; and health and safety training for emerging industries and technologies.

E-Learning products for the safety and health training of disaster preparedness and response workers exposed to hazards from disasters such as earthquakes, hurricanes, floods, oil spills, infectious disease, wildfires, and terrorist attacks are needed. Additionally, this program will support e-Learning products for the training of individuals in the Environmental Career Worker Training Program (ECWTP), a unique and successful model for workforce development with the goal of preparing and training disadvantaged and un- or underemployed workers for careers in environmental remediation, green industry, and construction

jobs. Efforts to help promote the Justice40 activities of the ECWTP around green energy and sustainable jobs is a particular focus, and we encourage products that promote or assist in helping to provide benefits and services (social services, pre-employment, life skills, job readiness, etc.) to the trainee, or their partners and the community. WTP will also consider technology-enhanced safety and health training products that provide training for the opioids and substance use national disaster; technology products to support training in disaster preparedness and response resiliency training; and e-Learning technologies to support safety and health training in emerging industries and technologies such as climate change/resilience, environmental justice, and alternative energy.

There is likely a need for short, incident specific awareness training that can be delivered during the disaster recovery period, including training on issues such as confined spaces; blood borne pathogens; personal protective equipment; hazard assessment; fire watch; first aid/CPR; site safety; working around heavy equipment; physical threats such as heat stress, fatigue, and shift work; fall protection; and psychological stress. WTP will consider advanced training technology tools to provide training in these areas.

WTP is a training program and is looking for ways to enhance safety and health training using advanced technologies. Research projects will not be supported.

Mechanism and Justification

We will continue to use the Small Business Innovation Research (SBIR) Grant - Phase I, Phase II, and Fast-Track I R43/R44 grant mechanisms. NIEHS encourages applicants to review the relevant program documentation, to pursue partnerships and collaboration with grant recipients of the [WTP program](#), and to design new Technology-Enhanced Training or e-Learning Products that can enhance the existing NIEHS-supported curricula and training programs while adhering to the [Minimum Health and Safety Training Criteria: Guidance for HAZWOPER and HAZWOPER-Supporting Training](#). Applications to assist NIEHS with its internal management and operations are not permitted, will be considered non-responsive, and are not appropriate for this NOFO. For this particular announcement, applicants must review the descriptions of [current](#) and [prior](#) NIEHS WTP SBIR awards and avoid duplicating the exact curricula, subject matter content, and technology of these awards. Products must support health and safety training objectives or frameworks and not just be a method for information dissemination.

We propose the development of a NOFO to replace the current announcement ([RFA-ES-23-005](#)) that just closed on July 14, 2023. Importantly, the new plan would retain all essential elements and goals of the current program. In the future, we plan to expand upon the addition of e-Learning products for the training of individuals in the ECWTP and Justice40 workforce development activities, and Technology Enhanced safety and health training products to support emerging industries and technologies such as climate change/resilience, environmental justice, and alternative energy. It is expected that the cost per grant for the R43 is \$100,000 for one year and R44 will be \$200,000 for two years with 3-7 awards to be made each year.

Proposed Timeline for SBIR E-Learning for Hazmat:

Council Concept Clearance: September 2023

RFA Release Date: March 2024

Application Due Dates: July 2024

Peer Review Dates: Fall/Winter 2024

Council Review Dates: January/February 2025

Earliest Anticipated Start Date: June 2025