

FORMER WORKER MEDICAL



SCREENING PROGRAM



# 2013 ANNUAL REPORT

WE HAVE CURRENTLY PROVIDED OVER

1 0 0 0 0 0

EXAMINATIONS





ATOMIC TRADES AND LABOR COUNCIL  
AFFILIATED WITH THE U.S. DEPARTMENT OF ENERGY  
OAK Ridge, Tennessee 37831-4068  
WWW.ATTC.ORG/US/EN



# Table of Contents

Abbreviations.....	iii
Foreword.....	v
Executive Summary.....	vii
1.0 Program Overview.....	1
2.0 Program Implementation.....	5
3.0 Program Accomplishments.....	15
Appendix A: Individual Project Descriptions.....	19
Appendix B: Exams Conducted through the Former Worker Program.....	33
Appendix C: Program Findings.....	35
Appendix D: Resources.....	49

This page intentionally left blank.

## Abbreviations Used in This Report

AEC	<i>Atomic Energy Commission</i>
BAECP	<i>Burlington Atomic Energy Commission Plant</i>
BeLPT	<i>Beryllium Lymphocyte Proliferation Test</i>
BTMed	<i>Building Trades National Medical Screening Program</i>
CPWR	<i>CPWR – The Center for Construction Research and Training</i>
CT	<i>Computed Tomography</i>
CXR	<i>Chest X-ray</i>
DOE	<i>U.S. Department of Energy</i>
DOL	<i>U.S. Department of Labor</i>
EEOICPA	<i>Energy Employees Occupational Illness Compensation Program Act</i>
ELCD	<i>Early Lung Cancer Detection</i>
FMPC	<i>Feed Materials Production Center</i>
FWP	<i>Former Worker Medical Screening Program or Former Worker Program</i>
FY	<i>Fiscal Year</i>
GDP	<i>Gaseous Diffusion Plant</i>
HSS	<i>Office of Health, Safety and Security</i>
IAAP	<i>Iowa Army Ammunition Plant</i>
INL	<i>Idaho National Laboratory</i>
JHBSPH	<i>Johns Hopkins Bloomberg School of Public Health</i>
JOTG	<i>Joint Outreach Task Group</i>
K-25	<i>Oak Ridge K-25 Gaseous Diffusion Plant</i>
LANL	<i>Los Alamos National Laboratory</i>
NIOSH	<i>National Institute for Occupational Safety and Health</i>
NNSS	<i>Nevada National Security Site (formerly known as Nevada Test Site)</i>
NSSP	<i>National Supplemental Screening Program</i>
ORAU	<i>Oak Ridge Associated Universities</i>
ORNL	<i>Oak Ridge National Laboratory</i>
PFT	<i>Pulmonary Function Test</i>
SNL	<i>Sandia National Laboratories</i>
UNM	<i>University of New Mexico</i>
WHPP	<i>Worker Health Protection Program</i>
Y-12	<i>Y-12 National Security Complex</i>

This page intentionally left blank.

## Foreword

As a result of the development and maintenance of nuclear weapons, workers from the U.S. Department of Energy (DOE) or its predecessor agencies may have developed illnesses as a result of their exposure to hazardous materials. The DOE's Office of Health, Safety and Security (HSS) proudly takes responsibility for fulfilling DOE's obligations to these former workers through the Former Worker Medical Screening Program, or Former Worker Program (FWP), which was established by the U.S. Congress as part of Section 3162 of the National Defense Authorization Act for Fiscal Year 1993. We are privileged to present this annual report highlighting the accomplishments of this program, which provides critical services to those who served and sacrificed through their work in the Department and its predecessor agencies.

The legislation called for DOE to provide ongoing medical screening examinations, at no cost, to all eligible former DOE Federal, contractor, and subcontractor workers. The medical screenings are designed to check for adverse health effects resulting from their work at DOE and/or its predecessor agencies (the Manhattan Engineer District, the Atomic Energy Commission, and the Energy Research and Development Administration). The medical exams are available to individuals every three years through a group of dedicated, professional medical experts from unique teams comprised of universities, unions, and commercial organizations with expertise in administering occupational medicine programs. The program's strengths center on the use of independent organizations to administer the medical screenings; aggressive and multi-faceted outreach programs; uniformity of protocol and equity across DOE sites; and a respect for the confidentiality and protection of former worker information and medical screening results.

This year marked a significant milestone for the FWP – over 100,000 medical screening exams have been provided to former workers since the inception of the program. Since 1996, the program has made great strides in addressing the occupational health legacy of the Department's 70-plus years of nuclear weapons design and production.

While the administering organizations serve as objective, third-party providers of the medical screening exams, the DOE program offices and sites also provide an invaluable service by assisting HSS in identifying former workers and sharing information with current workers about the availability of FWP when they retire or separate from DOE sites.

HSS is responsible for many important programs, but none as vital and important as the FWP. The year 2014 will see the senior management of the FWP transition from HSS to the newly-established Under Secretary for Management and Performance. We have discussed the importance of this program with the management of this new office, and they share our strong support of the FWP. We are confident that the same senior management attention will continue with the FWP because in addition to the commitment from the Deputy Under Secretary for Management and Performance, the current Director of the Office of Health and Safety, Patricia R. Worthington, PhD, will continue in her influential role. This program remains vitally important to us because it honors those workers who served our country through their hard work, and they will continue to receive the unwavering support of DOE leadership. The Department, together with the organizations administering the program, will continue to meet this commitment to the former DOE workforce in the years ahead. They deserve nothing less.

**Glenn S. Podonsky**  
**Chief Health, Safety and Security Officer**  
**U.S. Department of Energy**

This page intentionally left blank.

## Executive Summary

The U.S. Department of Energy's (DOE) Office of Health, Safety and Security (HSS) is pleased to present the Fiscal Year (FY) 2013 Annual Report of the DOE Former Worker Medical Screening Program, also known as the Former Worker Program (FWP). The FWP was mandated by the U.S. Congress as part of Section 3162 of the National Defense Authorization Act for FY 1993 (Public Law 102-484).

Since 1996, FWP has provided ongoing medical screening examinations, at no cost, to all interested and eligible former DOE Federal, contractor, and subcontractor workers from all DOE sites, as well as former workers from its predecessor agencies (the Manhattan Engineer District, the Atomic Energy Commission, and the Energy Research and Development Administration). The estimated population of former workers who may be eligible to receive these medical screening services is more than 600,000 individuals.

Medical screening is a strategy used to identify diseases or conditions in a select population at an early stage, often before signs and symptoms develop. The medical screening exams offered by the FWP are designed to detect work-related health effects from a wide range of potentially hazardous exposures, including radiation, beryllium, asbestos, lasers, silica, lead, cadmium, chromium, solvents, noise, and other occupational exposures. Individuals who are found to have any abnormal medical findings are referred to their personal physicians or a specialist for additional testing and diagnoses. Follow-up care is not covered by the FWP, and the program is not intended to serve as a substitute for routine medical exams through an individual's personal physician.

To ensure objective and credible medical examinations, the program offers medical screening exams by third-party providers. The administration of these medical examinations is built on the principles of absolute confidentiality and respect for the privacy of individuals. Medical screening exams are offered at clinics in communities near DOE sites, as well as through a large network of health clinics nationwide to allow for services to be provided in close proximity to most workers' residences. In fact, this vast network of clinics has allowed the FWP to not only provide participant medical screening exams in all 50 states but in several international locations as well.

The success of the FWP is due, in large part, to HSS's collaboration with independent, credible, and highly regarded medical experts in the field of occupational medicine. Their dedication to the DOE workforce over the past 17 years has resulted in high-quality services, and the level of satisfaction expressed by participants speaks to the skill and professionalism of the organizations administering the program for HSS.

In FY 2013, the FWP continued to successfully fulfill its congressional mandate of delivering free medical screening services to all interested and eligible former workers. The program activities undertaken focused on meeting the following objectives:

### **Deliver high-quality medical screening services to thousands of former workers nationwide.**

This year marked an important milestone for the FWP – over 100,000 medical screening exams have been provided to former workers since the inception of the program. As of September 30, 2013, 102,699 screenings and re-screen exams have been performed. In FY 2013 alone, 3,915 initial medical examinations and 5,071 re-screen medical exams were conducted. In addition, since 2000, the FWP has made screening

for occupational lung cancer with low-dose helical computed tomography (CT) scans available to workers at high risk for lung cancer. Since the initiation of the FWP's Early Lung Cancer Detection program, 13,485 participants have been screened and provided a total of 37,107 CT scans. In FY 2013, 1,331 participants were screened for a total of 4,305 CT scans.

### **Enhance the efficiency and effectiveness of program implementation.**

The overall success of the FWP is ultimately measured by the number of former workers who can be identified, located, contacted, and provided with timely medical screening examinations and follow-up recommendations. This process requires close coordination, timely communication, and frequent interaction among several stakeholders that include workers, labor unions, worker advocates, DOE Institutional Review Boards (committees overseeing the protection of human subjects), DOE Headquarters program offices, DOE field and site offices, and DOE contractors. More important is the requirement to adequately protect personally identifiable information and protected health information that is collected for use in the program.

In FY 2013, HSS continued to focus on improving program effectiveness. These efforts included:

- *Worked with DOE Headquarters program offices, field and site offices, contractors, and labor unions to more effectively and efficiently access employment records and obtain "last known" contact information for former workers. This effort has resulted in improved communication and sharing of employee rosters.*
- *HSS staff and FWP project personnel continued to work with DOE sites in an effort to have FWP brochures placed in exit packages for workers retiring/separating from the site and publishing program materials and hyperlinks on retiree and DOE site webpages.*
- *HSS sent out a Department-wide message informing current workers of the availability of medical screening for former DOE workers and making current workers aware of their eligibility to participate in the program once they have retired/separated from DOE.*
- *Strengthened the effectiveness and coordination of various outreach and awareness campaigns by continuing to partner with other Federal agencies through the established Joint Outreach Task Group (JOTG). The agencies and entities involved include DOE, the U.S. Department of Labor (DOL), the National Institute for Occupational Safety and Health (NIOSH), the Offices of the Ombudsman for DOL and NIOSH, and the DOE-funded FWP projects. This effort enabled more effective outreach, enhanced communication, and provided more clarity and consistency in the information and guidance provided to former workers on the FWP, the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), and the benefits available to them. As part of their commitment, the task group created a JOTG "Town Hall" meeting video that includes the information presented at a typical JOTG public outreach meeting. The video can be found on the DOE website (<http://energy.gov/hss/joint-outreach-task-group-video-series>).*

The FWP continues to serve as a benefit to the former DOE workforce. While the program has identified, located, and offered medical screening exams to tens of thousands of former workers, much work still remains to continue these efforts. The FWP will continue to fulfill its obligation to the original mandate, as well as to fulfill the huge debt we owe to the workers who served our Nation during World War II, the Cold War, and beyond.

“The BTMed has assisted not only me but also many of my co-workers in understanding medical concerns we were not aware of. Knowing you have a problem and knowing what that problem is are two different things.” -*Robert Hagans, former Hanford worker*

This page intentionally left blank.

## 1.0 Program Overview

This Fiscal Year (FY) 2013 Annual Report presents an overview of the structure and accomplishments of the U.S. Department of Energy's (DOE) Former Worker Medical Screening Program or Former Worker Program (FWP). The FWP is a congressionally mandated program that is responsible for providing medical screening exams, at no cost, to all interested and eligible former DOE Federal, contractor, and subcontractor workers from all DOE sites and/or its predecessor agencies (the Manhattan Engineer District, the Atomic Energy Commission, or AEC, and the Energy Research and Development Administration). The medical screening exams offered by the FWP are designed to check for potential adverse health outcomes related to occupational exposures, including but not limited to radiation, beryllium, asbestos, lasers, silica, welding fumes, lead, cadmium, chromium, solvents, and noise.

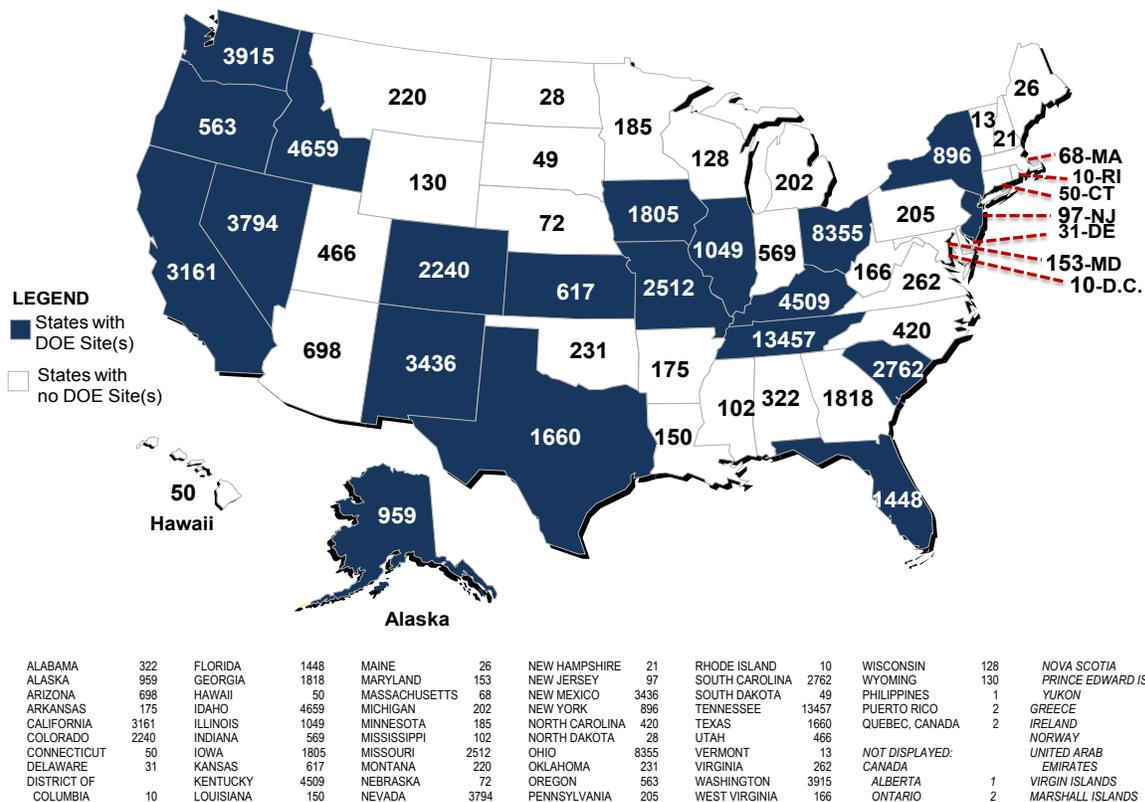
The program was established following the issuance of the National Defense Authorization Act for FY 1993 (Public Law 102-484), which called for DOE to:

**“... establish and carry out a program for the identification and on-going medical evaluation of its... former employees who are subject to significant health risks as a result of the exposure of such employees to hazardous or radioactive substances during such employment.”**

Since the inception of the FWP, DOE has made great strides in addressing the occupational health legacy of its nuclear weapons design and production activities. The FWP, managed by the DOE's Office of Health, Safety and Security (HSS), uses independent occupational health experts from universities, labor unions, and commercial organizations to administer the medical screening program. These third-party providers ensure objective and credible medical evaluation services. This year marked an important milestone for the FWP – over 100,000 medical exams have been provided to former workers.

The success of the FWP is due, in large part, to HSS's collaboration with independent, highly regarded medical experts in the field of occupational medicine. Funded by HSS, the FWP projects operate independently and are perceived as flexible, accessible, and sensitive to worker concerns and issues. While each project has unique characteristics and has employed different approaches to meeting their objectives, all have continuously improved and upgraded their delivery systems. Consequently, they enjoy a high comfort factor among their participant populations. Their dedication to the DOE workforce over the past 17 years has resulted in high-quality services, and the level of satisfaction expressed by participants speaks to the skill and professionalism of the organizations administering the program for HSS.

Medical screenings are provided at clinics in communities near DOE sites, as well as through a large network of health clinics nationwide that allow services to be provided near most workers' residences. In fact, this vast network of clinics has allowed the FWP to provide participant medical screening exams not only in all 50 states, but in several international locales as well (see Figure 1).



**Figure 1. Participants Screened by State of Residence Program to Date (through September 2013)**

The FWP infrastructure consists of four designated regional projects located near major DOE sites, as well as two nationwide projects.

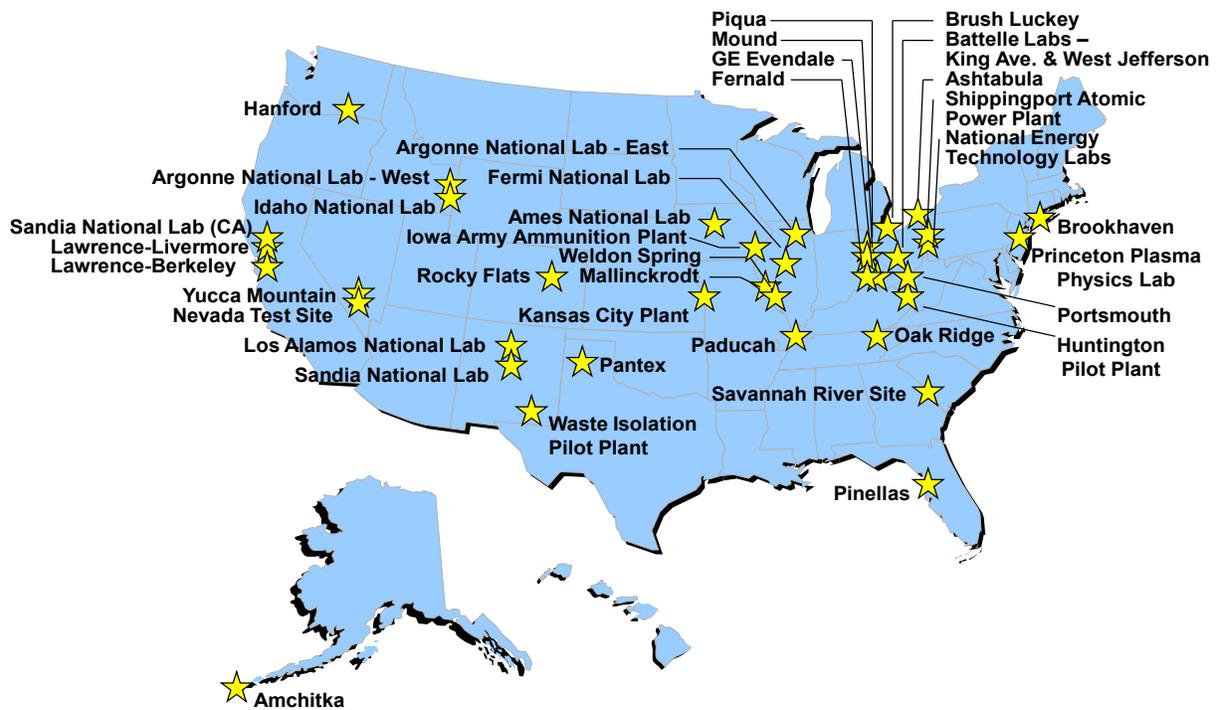
The regional FWP projects include:

- Pantex Former Worker Medical Surveillance Program, conducted by Drexel University School of Public Health in conjunction with the University of Texas Health Science Center at Tyler and West Texas A&M Partners Clinic
- Medical Exam Program for Former Workers from Los Alamos and Sandia (New Mexico) National Laboratories, conducted by Johns Hopkins Bloomberg School of Public Health in conjunction with the University of New Mexico
- Worker Health Protection Program (WHPP), conducted jointly by Queens College of the City University of New York, United Steelworkers, the Atomic Trades and Labor Council in Oak Ridge, and the former Fernald Atomic Trades and Labor Council
- Former Burlington AEC Plant and Ames Laboratory Workers Medical Screening Program conducted by The University of Iowa College of Public Health.

The nationwide FWP projects include:

- National Supplemental Screening Program (NSSP) conducted by Oak Ridge Associated Universities (ORAU) in conjunction with Axion Health, Comprehensive Health Services, National Jewish Health, and the University of Colorado Denver
- Building Trades National Medical Screening Program (BTMed) conducted by CPWR – The Center for Construction Research and Training (CPWR) in conjunction with Duke University Medical Center, the University of Cincinnati Medical Center, and Zenith-American Solutions.

Figure 2 provides a map indicating the DOE sites served by these regional FWP projects. The DOE sites, sponsoring organizations, and the year that screening was initiated are provided in a summary of services posted on the FWP website (<http://energy.gov/hss/downloads/former-worker-program-summary-services>). Individual FWP project descriptions are provided in Appendix A of this report.



**Figure 2. DOE Sites Served by Regional FWP Projects**

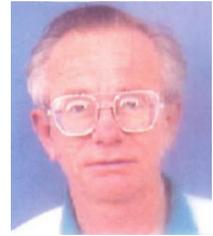
The advantage of the regional approach is that it maximizes outreach to workers and encourages participation in the FWP through day-to-day contact with local worker networks and organizations.

The FWP directly benefits former DOE workers by: (1) identifying health problems at an early stage when they are more treatable, and (2) improving workers' understanding of health risks they may face due to possible exposures during their prior employment with DOE.

Additional in-depth information regarding the FWP, how it is managed and administered by DOE, and descriptions of the medical exam components can be found on the FWP website (<http://energy.gov/hss/information-center/worker/former-worker-medical-screening>).

“Your program allows the former worker the opportunity to have an advocate in the exposure and claims process. Having a rare cancer, it has been difficult to get through the entire claims procedure when my local doctors are not experienced in that cancer or the environmental conditions at Pantex. The Amarillo and Tyler clinic staffs have been most professional and accommodating. Also, a notable skin cancer finding was discovered on one of my visits. I would encourage any former worker to avail themselves of this program as I judge it to be proactive.”

*-Paul Teichmann, former Pantex worker*



## 2.0 Program Implementation

Program implementation focuses primarily on three specific activities, which are:

1. Outreach: Identify and notify former DOE workers about FWP medical screening services.
2. Ongoing Medical Screening: Provide medical screening exams that are designed to check for health conditions related to occupational exposures to former workers who choose to participate in the program, including a re-screen exam every three years.
3. Communicate Results: Provide medical screening exam results to participants, as well as information regarding any conditions that may require follow-up medical care with their personal physicians or specialists, and provide information regarding possible compensation for work-related illnesses. *The legislation did not call for follow-up care.*

### **1. Outreach: Identify and notify former DOE workers about FWP medical screening services.**

Most of the FWP projects use multiple outreach methods to notify potentially eligible former DOE workers about the availability of FWP services and to increase the visibility of the program in communities surrounding DOE sites. To locate former workers who may be eligible to participate in the program, HSS works closely with Headquarters program offices to obtain rosters of former workers from site contractors, as well as field and site offices. Rosters are lists of names, along with other identifying information, of former DOE workers who may be available from employers or DOE.

The confidentiality and privacy rights of former workers are not only a legal requirement; they are crucial to establishing and maintaining credibility with the former worker community. All medical information that is collected as part of this program is treated as confidential and is used only as allowed by the Privacy Act of 1974. All FWP activities are conducted with the approval of the Institutional Review Boards, or Human Subjects Committees, of DOE and involved universities. All individuals sign an informed consent and Health Insurance Portability and Accountability Act (HIPAA) authorization prior to participation. In addition, all program staff are required to take annual privacy awareness training, and all FWP projects have security procedures in place for the safe transmittal and storage of personally identifiable information.

In FY 2013 alone, the FWP received new or updated rosters from 18 sites. Invitations are sent by the FWP projects to employees on the rosters, using the last known addresses. When addresses are found to be outdated or inaccurate, supplemental outreach methods are used by FWP projects; these include address-update services, such as credit bureaus, or Internal Revenue Service mailing services.

However, from the inception of the FWP, DOE realized there would be challenges in trying to locate workers to participate in the medical screening program; there is no centralized database of former DOE workers. In addition, many workers were employed intermittently by subcontractors, and these companies typically did not leave a copy of employee records with the prime contractor when their job was completed. Thus, the availability of rosters varies greatly by site.

To increase the visibility of the FWP, program information is shared through providing FWP brochures in exit packets for workers separating from a site, and publishing program materials and hyperlinks on retiree and DOE site webpages. To further increase awareness of the FWP, HSS recently sent out a Department-



**JOTG town hall meeting in Livermore, CA.**

wide message informing current workers of the availability of medical screening for former DOE workers and to make current workers aware of their eligibility to participate in the program once they have retired/separated from DOE.

In 2009, the Joint Outreach Task Group (JOTG) was established to enhance communication and coordination. The JOTG includes

representatives from DOE, the U.S. Department of Labor (DOL), the National Institute for Occupational Safety and Health (NIOSH), the Offices of the Ombudsman for DOL and NIOSH, and the DOE-funded FWP projects. The goal of creating the Task Group was to coordinate and improve outreach efforts between the agencies involved in the implementation of the FWP and the Energy Employees Occupational Illness Compensation Program Act (EEOICPA). To meet this goal, the JOTG holds “town hall” meetings in and near the communities of DOE sites and maintains a calendar of events on the FWP website (<http://energy.gov/hss/calendars/joint-outreach-task-group-jotg-events>). This effort enabled more effective outreach, enhanced communication, and provided more clarity and consistency in the information and guidance provided to former workers on FWP, EEOICPA, and benefits available to them.

As of September 30, 2013, an effort had been made to contact over 617,000 potential FWP participants. Those who are interested and eligible have either completed their medical screening examinations or are in the process of being scheduled for an exam. Additional information regarding outreach can be found on the FWP website (<http://energy.gov/hss/outreach-former-worker-medical-screening-program-fwp>).

**2. Ongoing Medical Screening: Provide medical screening exams that are designed to check for health conditions related to occupational exposures to former workers who choose to participate in the program, including a re-screen exam every three years.**

### **Conventional Medical Screening Program**

Medical screening is a strategy used to identify diseases or conditions in a select population at an early stage, often before signs and symptoms develop, and to refer individuals with suspicious findings to their personal physician or a specialist for further testing, diagnosis, and treatment. The FWP is not intended to serve as a substitute for routine medical exams through an individual’s personal physician.

The medical screening exam offered by the FWP evaluates an employee’s health as it relates to their potential occupational exposure to hazardous agents. The FWP uses a customized medical screening protocol that was developed by a team of independent physicians specializing in occupational medicine. The protocol is updated, as necessary, based on new research findings within the scientific/medical community. The health conditions targeted in the medical screening exams include chronic lung diseases, beryllium-related disorders, hearing loss, and damage to other selected major organ systems that may be associated with occupational exposures. A listing of exposures and medical examinations offered

through the FWP is available in the medical protocol posted on the FWP website (<http://energy.gov/hss/downloads/former-worker-program-medical-protocol>).

Before participating in the medical screening program, former workers must complete a medical history questionnaire and an occupational history questionnaire, either on their own or via an interviewer-conducted session. The interviews are conducted by the local outreach coordinators employed by the FWP projects who, in many cases, are former workers with knowledge of DOE sites and exposures.

The initial medical screening examination includes a physical examination and may consist of the following based on the individual's occupational exposure history as reported in the questionnaire/interview:

- Chest x-ray with B reading (interpretation for occupational lung disease)
- Spirometry (breathing test)
- Beryllium Lymphocyte Proliferation Test (BeLPT)
- Blood chemistry test
- Urinalysis
- Audiometry (hearing test).

*Participation in the FWP is completely voluntary, and participants can refuse any portion of the medical screening examination.*

The original legislation that established the FWP also called for the program to provide ongoing medical examinations. Former workers are entitled to a re-screen examination three years after their initial medical screening and every three years thereafter. The re-screening improves the detection of latent occupational disease, which may not show signs or symptoms for decades after exposure. A latency period is the time between the exposure and the potential onset of the disease. It should also be noted that certain medical exams may be recommended only during the initial screening exam and excluded from the re-screen exam. For example, audiometry (hearing test) is not offered on the re-screen exam, since occupational hearing loss would typically be detected during the initial screening exam of retired workers.

The medical screening examinations, while focusing on the detection of occupational disease, also provide an overall picture of the “general health” of DOE former workers. In addition to its core function of identifying conditions that may have been related to workplace exposures, the program also provides some general health screening services at minimal cost to the DOE.

Participants are screened for some common non-occupational health conditions, such as diabetes (blood sugar), coronary artery disease (cholesterol), cardiovascular disease/hypertension (blood pressure), obesity, and elevated creatinine levels (a blood test used to assess kidney function). While not intended to be a comprehensive examination, these tests provide for the early detection of these conditions without significantly impacting the overall focus and cost of the program.



**A medical screening exam conducted in Oak Ridge, TN.**

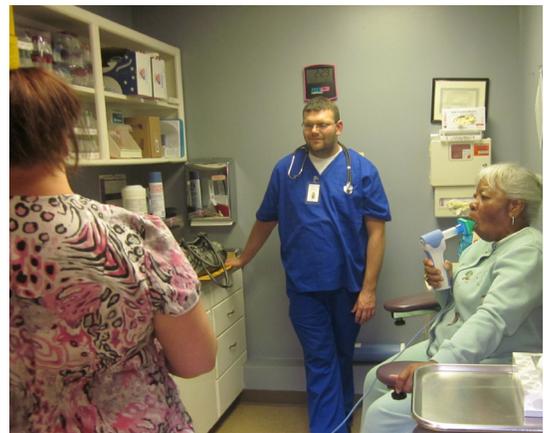
The standard medical screening protocol used by the FWP is known to detect incidental findings. An incidental finding, or unanticipated abnormal finding, is information discovered during routine medical exams that, in many cases, ends up saving lives. Examples of incidental findings found on certain components of the medical exam include:

- Chest x-ray: pneumonia, abdominal aortic aneurysm
- Audiogram (hearing test): age-related hearing changes
- Complete blood count: anemia
- Physical exam: non-cancerous skin conditions.

A value-added benefit to the FWP medical screening exam is the opportunity for health practitioners to provide wellness counseling. Studies have shown that individuals are more likely to stop smoking, for example, when a health care provider counsels them to do so. Similarly, the re-screening examination is an opportunity to educate former workers about behavior changes to improve their overall health status for improved quality of life and also affords the opportunity to look for any changes in the individual's overall health condition from the previous medical exam, making early referral and treatment more effective.

The results of general health screening tests, as well as incidental findings picked up on examination, can be of great benefit to a participant. Many of the conditions that fall into this category can be readily treated by the participant's personal physician and can significantly improve longevity and quality of life. DOE and the FWP projects are committed to ensuring that the overall wellbeing of our former workers is evaluated within the program.

As of September 2013, a total of 102,699 medical exams have been conducted through the FWP, 76,816 initial screening exams and 25,883 re-screen exams. A breakdown of the number of initial and re-screen exams by DOE site is presented in Appendix B. A detailed description of each of the components of the medical screening exams can be found on the FWP website (<http://energy.gov/hss/conventional-medical-screening-program>). The medical findings broken out by DOE site can be found in Appendix C. A summary of medical examinations performed to date is presented in Tables 1-4 below. Only new abnormal findings on re-screen exams are reported.



**Jennifer Dodson performs a pulmonary function test on Elizabeth Brazier as medical technology student Ron Frazier observes.**

**Table 1. Chest X-ray Findings on Initial and Re-screen Exams (through September 2013)**

Screening Exam	Workers Screened	Asbestos-related Lung Disease <sup>1</sup>	Silicosis <sup>2</sup>	Other Dust-related Disease	Lung Nodules, Nodes, or Lesions
Initial	68,936	8,173 (11.9%)	193 (0.3%)	1,000 (1.5%)	2,113 (3.1%)
Re-screen	19,116	1,294 (6.8%)	17 (0.1%)	184 (1.0%)	425 (2.2%)

<sup>1</sup> Asbestos-related disease, or asbestosis, is a lung disease caused by breathing in asbestos fibers.

<sup>2</sup> Silicosis is a lung disease caused by breathing in silica dust.

**Table 2. Spirometry Findings on Initial and Re-screen Exams  
(through September 2013)**

Screening Exam	Workers Screened	Obstructive Airways Dysfunction Detected <sup>3</sup>
Initial	68,647	14,287 (20.8%)
Re-screen	19,310	3,798 (19.7%)

**Table 3. Results of Beryllium Lymphocyte Proliferation Tests (BeLPT)  
on Initial and Re-screen Exams  
(through September 2013)**

Screening Exam	Workers Screened	1 Abnormal <sup>4</sup>	2 Abnormal	1 Abnormal and 1+ Borderline
Initial	61,343	826 (1.3%)	622 (1.0%)	222 (0.4%)
Re-screen	17,706	117 (0.7%)	131 (0.7%)	57 (0.3%)

**Table 4. Audiometry Findings on Initial Exam  
(through September 2013)**

Workers Screened	Noise-induced Hearing Loss
61,373	36,775 (59.9%)

“I want to compliment everyone involved in this valuable program for their professionalism, courtesy, and sense of urgency in conducting this program. This was my second screening and both times the service and timeliness were outstanding. My primary care doctor was extremely impressed with the breadth of the screening. Thank you for a job well done!” *-Former Rocky Flats worker*

### Early Lung Cancer Detection Program

Since 2000, DOE has made screening for occupational lung cancer with low-dose helical computed tomography (CT) scans available to former workers at high risk for lung cancer. Many former workers are at risk for lung cancer as a result of the essential activities they undertook in fulfilling the Department’s mission. Through the FWP, DOE initiated the Early Lung Cancer Detection (ELCD) program using low-dose helical CT scans to detect lung cancers at an earlier, more treatable stage. Lung cancer results in about 160,000 deaths in the U.S. every year. The most common causes of lung cancer are long-term exposures to tobacco smoke and residential radon emissions, but occupational hazards, such as asbestos, ionizing radiation, silica, beryllium, and diesel exhaust, also cause or contribute to the disease. Since the initiation of the FWP’s ELCD program, a total of 13,485 participants have been screened and provided 37,107 CT scans. In FY 2013 alone, 1,331 participants were screened for a total of 4,305 CT scans.

In 2000, the WHPP, the FWP project administered by Queens College of the City University of New York and the United Steelworkers, began using low-dose helical CT scans to screen individuals who

3 Obstructive airways dysfunction includes chronic obstructive pulmonary disease, which is a progressive lung disease caused by long-term exposure to lung irritants, such as cigarette smoke, air pollution, chemical fumes, or dust. Obstructive airways dysfunction also includes asthma, which is a chronic inflammatory disease of the bronchial tubes, or airways, that causes swelling and narrowing of the airways. It is thought to be caused by a combination of environmental and genetic factors.

4 Individuals with one abnormal BeLPT are encouraged to file a claim with the DOL Energy Employees Occupational Illness Compensation Program. Beryllium sensitization is diagnosed by an occupational medicine physician based on abnormal BeLPT results.

met established eligibility criteria, including a history of at-risk occupational exposure to lung carcinogens such as asbestos, beryllium, radioactive materials, nickel, and chromium. WHPP offers the ELCD program to production/in-house workers at the following DOE sites: Oak Ridge K-25, Paducah, and Portsmouth Gaseous Diffusion Plants; Y-12 National Security Complex (Y-12); Oak Ridge National Laboratory (ORNL); Mound Plant; Feed Materials Production Center (FMPC or Fernald), Nevada National Security Site<sup>5</sup> (NNSS, formerly Nevada Test Site); and Idaho National Laboratory (INL).

The results from the WHPP ELCD program are summarized in Tables 5 and 6 below. The detected cancers have been staged – indicated by a descriptor (usually numbers I to IV) representing how much the cancer has spread. CT screening has often led to cancers being detected at an early stage, when treatment is more likely to be effective, and has proved to be better for early detection than conventional chest x-rays.



John Lain, WHPP CT technician.

**Table 5. Stage of Lung Cancers Detected by WHPP  
Early Lung Cancer Detection Program, 2000-September 30, 2013<sup>6</sup>**

Site of ELCD Program	Number of Participants Screened	Number of Lung Cancers Detected	Number of Detected Lung Cancers That Were Staged	Number (%) of Early (Stage I or II Non-Small Cell or Limited Small Cell) Cancers Detected
Paducah	1,987	17	16	14 (82%)
Portsmouth	2,255	21	19	15 (71%)
K-25	2,838	26	26	21 (81%)
ORNL	1,308	11	10	4 (36%)
Y-12	2,974	22	20	14 (64%)
Mound Plant	598	4	4	4 (100%)
FMPC	429	0	N/A	N/A
NNSS	359	1	1	1 (100%)
INL	424	0	N/A	N/A
<b>Total</b>	<b>13,172</b>	<b>102</b>	<b>96</b>	<b>73 (72%)</b>

The WHPP ELCD program has also detected other diseases of importance (see Table 6).

<sup>5</sup> All former NNSS workers (construction and production) that meet the eligibility criteria are offered the ELCD program.

<sup>6</sup> Early cancer is defined as Stage I or II non-small cell or limited small cell.

**Table 6. Other Diseases Found on CT Scan by WHPP**

Condition	Number Detected
Appendiceal cancer	1
Breast cancer	1
Kidney cancer	5
Liver cancer	1
Lymphoma	3
Thyroid cancer	5
Aortic aneurysms	29
Heart aneurysms	5
Splenic aneurysms	1
Pneumonia	33
Thymoma	5

In addition, in April 2011, the Building Trades National Medical Screening Program (BTMed), a component of the FWP that is conducted by CPWR in conjunction with their partners, began an ELCD program for former construction workers from the Oak Ridge Reservation. The results from the BTMed ELCD program are summarized in Tables 7 and 8 below. In July 2013, BTMed began a similar program for former Hanford construction workers. Data from this program will be presented in next year’s annual report.

“I had performed radiation work for many years at Y-12 and was eligible to enroll in the Early Lung Cancer Detection Program, through the Worker Health Protection Program. The CT scan found suspicious nodules on my lungs and the follow-up diagnostic test with my physician confirmed it as cancer. The cancer was found at an early stage and treatment was successful. It has been almost five years since I have been cancer free and I feel good. I am very thankful for the program – if not for the scan, the cancer would probably not have been found until it was too late. I am always recommending this program to workers who may have been exposed.”  
*-Karen Brock, Y-12 worker*



**Table 7. Stage of Lung Cancers Detected by BTMed  
Early Lung Cancer Detection Program, 2011-September 30, 2013<sup>7</sup>**

Site of ELCD Program	Number of Participants Screened	Number of Lung Cancers Detected	Number of Detected Lung Cancers That Were Staged	Number (%) of Early (Stage I or II Non-Small Cell or Limited Small Cell) Cancers Detected
Oak Ridge Reservation	231	2	2	0 (0.0%)

The BTMed ELCD program has also detected other diseases of importance (see Table 8).

<sup>7</sup> Early cancer is defined as Stage I or II non-small cell or limited small cell.

**Table 8. Other Diseases Found on CT Scan by BTMed**

Condition	Number Detected
Kidney cancer	1
Aortic aneurysms	1

In July 2013, the NSSP, a component of the FWP that is conducted by ORAU and their partners, began a pilot ELCD program in coordination with National Jewish Health in Denver, CO. The pilot testing will include 100 participants. By virtue of geographic proximity to the former Rocky Flats Plant, former workers from this site will likely comprise the majority of the participants in the pilot project, but workers from the NSSP's other primary sites who are in the Denver metro area will be equally eligible to participate. Data from this program will also be presented in next year's annual report.

More in-depth information regarding the ELCD program, including low-dose CT scans, can be found on the FWP website (<http://energy.gov/hss/early-lung-cancer-detection-program>).

**3. Communicate Results: Provide medical screening exam results to participants, as well as information regarding any conditions that may require follow-up medical care with their personal physicians or specialists, and provide information regarding possible compensation for work-related illnesses. *The legislation did not call for follow-up care.***

Occupational medicine physicians review the results from the medical screening exams, along with the completed medical and occupational exposure history questionnaires, to determine whether any abnormal findings exist that may require immediate attention and whether the findings may have been caused by a work-related exposure. Participants requiring urgent medical attention for an abnormal test result are contacted immediately by phone, informed of the finding, and provided recommendations for further evaluation and treatment by their personal physicians or a specialist. The findings are also documented in a letter to the participant, otherwise known as an "urgent letter," that is sent by overnight mail.

Workers are provided with a summary of all the findings from their medical screening examination in a results letter several weeks after their examination, along with any necessary follow-up recommendations. Although the primary focus of the results letter is to provide a summary of any possible occupational-related findings and follow-up recommendations for those findings, the letter also includes a summary of all the findings, including non-occupational findings, discovered during the screening. The results letter also includes general health advice for workers, such as recommendations for smoking cessation. Individuals who are found to have any abnormal medical findings are referred to their personal physicians or a specialist for follow-up care.

While the FWP projects offer medical screening exams, the legislation did not call for follow-up care. If the FWP screening result indicates a need for medical treatment, efforts are made to ensure that participants get the necessary care. This involves communicating with the participants, their families, and their personal physicians. If participants do not have personal physicians or if they do not have the means to pay for additional medical care, the FWP projects try to arrange for care in a variety of ways.

When appropriate, the FWP physicians who write the results letters include language regarding the possible work-relatedness of a condition, especially if the condition is known to be a potential occupational disease. The inclusion of this language, known as "causation" language, can be very helpful for participants who

decide to file a claim under the EEOICPA, which is administered by DOL. Moreover, participants are provided contact information for DOL EEOICPA Resource Centers in the results letters.

The FWP complements the EEOICPA by offering former DOE workers medical screening examinations that are conducted by expert occupational medicine physicians who provide workers with detailed information about the possible relationship between their condition and their occupational exposure at a DOE site. In addition, FWP project staff, many of whom are former DOE workers, are able to assist participants by providing useful site and exposure information to include in their claims packages. While participation in the medical screening program is not required for filing a compensation claim, the medical results are often useful in supporting an EEOICPA claim. The FWP will also refer individuals to other state and Federal workers' compensation programs when appropriate.

In summary, the FWP has served, and continues to serve, as a benefit to the former DOE workforce. While the program has identified, located, and offered medical screening services to tens of thousands of former workers, much work still remains to continue these efforts.

“I would like to thank the program for the medical screening I received. It was thorough, complete and beneficial knowing I was clean and healthy.” *-former Iowa Army Ammunition worker*

This page intentionally left blank.

## 3.0 Program Accomplishments

**The program continued to fulfill its critical mandate of providing medical screening services, at no cost, to all interested and eligible former DOE workers.** This year marked an important milestone for the FWP – over 100,000 medical screening exams have been provided to former workers since the inception of the program. As of September 30, 2013, 102,699 screenings have been performed. In FY 2013 alone, 3,915 initial medical screening examinations and 5,071 re-screen exams were conducted. In addition, since 2000, the FWP has made screening for occupational lung cancer with low-dose helical CT scans available to workers at high risk for lung cancer. Since the initiation of the FWP's ELCD program, 13,485 participants have been screened and provided a total of 37,107 CT scans. In FY 2013, 1,331 participants were screened for a total of 4,305 CT scans.

**The program has resulted in a high level of satisfaction among participating former DOE workers.** In FY 2013, an average of 97.9% of the participants indicated satisfaction with the program. The vast majority of participants are very satisfied with the program in general, the services they receive, the quality of the personnel, and the timeliness of service delivery.

**The program is served by highly regarded occupational medicine physicians from across the country.** To overcome longstanding shortages of occupational medicine expertise in communities surrounding DOE sites, DOE has been able to match and connect national occupational medicine expertise with local parties throughout the DOE complex. These physicians have worked with HSS to develop and conduct the FWP medical screening program using clinics in DOE communities, as well as a nationwide network of clinics. These physicians have worked with local clinics to ensure highly accessible and appropriate medical screening services. In some instances, FWP project personnel have provided occupational medicine training and clinical sessions to medical clinic staff in DOE communities to provide the best quality service to FWP participants.

**The program has resulted in the identification of conditions at early stages, allowing for successful treatment.** The FWP has identified pre-cancerous conditions and cancers at early stages, allowing successful treatment and, in some cases, the elimination of the disease, thus substantially improving the health and wellbeing of many former workers who participated in the program. With the knowledge that DOE is committed to worker safety and health, current workers will likely have fewer concerns about working at DOE sites, may remain with DOE longer than they might have otherwise, and may be more productive while employed. In addition, a valuable added benefit of the medical screenings provided through the FWP is the identification of non-occupational health conditions, such as uncontrolled high blood pressure, diabetes, and elevated cholesterol levels.

**FWP screening exam results continue to benefit former workers by providing useful information to support EEOICPA claim adjudication.** The FWP provides former DOE workers with an accessible, affordable means of obtaining a medical evaluation targeted at work-related health conditions. While participation in the medical screening program is not required for filing an EEOICPA compensation claim, the medical results have been useful in supporting workers' claims.

**The program has advanced the state of medical knowledge.** The FWP projects have contributed 28 articles to peer-reviewed scientific literature, either directly by studying former workers in the context of the screening program or by recruiting former workers in the program as research participants for scientific

studies funded by the National Institutes of Health or other research funding sources. A list of the major publications that have benefited from program activities to date can be found on the FWP website (<http://energy.gov/hss/information-center/worker/former-worker-medical/fwp-scientific-publications>). Some of the topics include beryllium sensitization, hearing loss, and pulmonary abnormalities among former DOE workers. Not included in the list are numerous briefings to small groups, including HSS staff, Site Occupational Medicine Directors, and site employees.

**The program continued making use of creative outreach initiatives to increase the visibility of the FWP.** The JOTG focuses on educating the former workers on the programs and resources available to them. In addition, this partnership among different government agencies responds to the President's recommendations for transparency and open government. Each involved agency has a different mission, but the missions are complementary. By working together, the agencies are better able to serve the DOE workforce.

The JOTG also maintains and supports a calendar of events in DOE communities that may be of interest to former workers and their families. Upcoming events can be found on the FWP website (<http://energy.gov/hss/calendars/joint-outreach-task-group-jotg-events>).

In the interest of combining resources, since both the EEOICPA and FWP serve a similar population of workers, the Federal entities have partnered to hold local outreach meetings in and around active or closed DOE sites. Since its inception, the task group has focused on holding joint public "Town Hall" meetings. To date, 43 meetings have been held in and near the communities of 24 DOE sites. These meetings have been very successful, but we realize not everyone can make it to a meeting.

As part of their commitment, the task group created a JOTG "Town Hall" meeting video that includes the information presented at a typical JOTG public outreach meeting. The video is not intended to replace future JOTG Town Hall meetings in the communities in and around the DOE sites or the DOE closure sites. Instead, the video will provide the JOTG with an outreach tool for workers who are too sick to attend an upcoming task group meeting; people in the communities where no meeting is scheduled in the immediate future; Unions, retiree groups, and other organizations that are interested in holding a "virtual" town hall meeting for their members; DOE sites that would like to show the video during an onsite Health and Safety meeting; and other similar group activities. The video is also streamed via the Internet and available with closed captioning for the hearing impaired. This video will be particularly helpful to those seeking an overview of the EEOICPA and FWP, as well as those who are not sure which agency they should contact to address their specific question. The video can be found on the DOE website (<http://energy.gov/hss/joint-outreach-task-group-video-series>).

In FY 2013 alone, the FWP projects participated in almost 300 outreach events in the communities near DOE facilities and closure sites. These events include community events, such as picnics and fairs, as well as events geared specifically to the DOE workforce, such as DOE site health and safety fairs, retiree luncheons, and union-sponsored events. The FWP projects provided support for 17 outreach events sponsored by DOL. The assistance included mailing invitations to former workers regarding the upcoming events, distributing outreach materials for the events in the local communities, locating facilities where the events could be held, as well as having FWP project staff attend the events to support DOL and provide information regarding the FWP.

**In summary,** DOE has made great advances in addressing the occupational health legacy of more than 70 years of nuclear weapons design and production. The FWP is a prime example of HSS's commitment to its workforce and demonstrates the feasibility and value of conducting targeted medical screening programs for occupational diseases. In 2014, the Department will continue to meet its obligation to its former workers by building on lessons learned for enhancing program implementation.

This page intentionally left blank.

# Appendix A: Individual Project Descriptions

The U.S. Department of Energy (DOE) Former Worker Program (FWP) projects are briefly described below.

## Building Trades National Medical Screening Program (BTMed)

### Who we are:

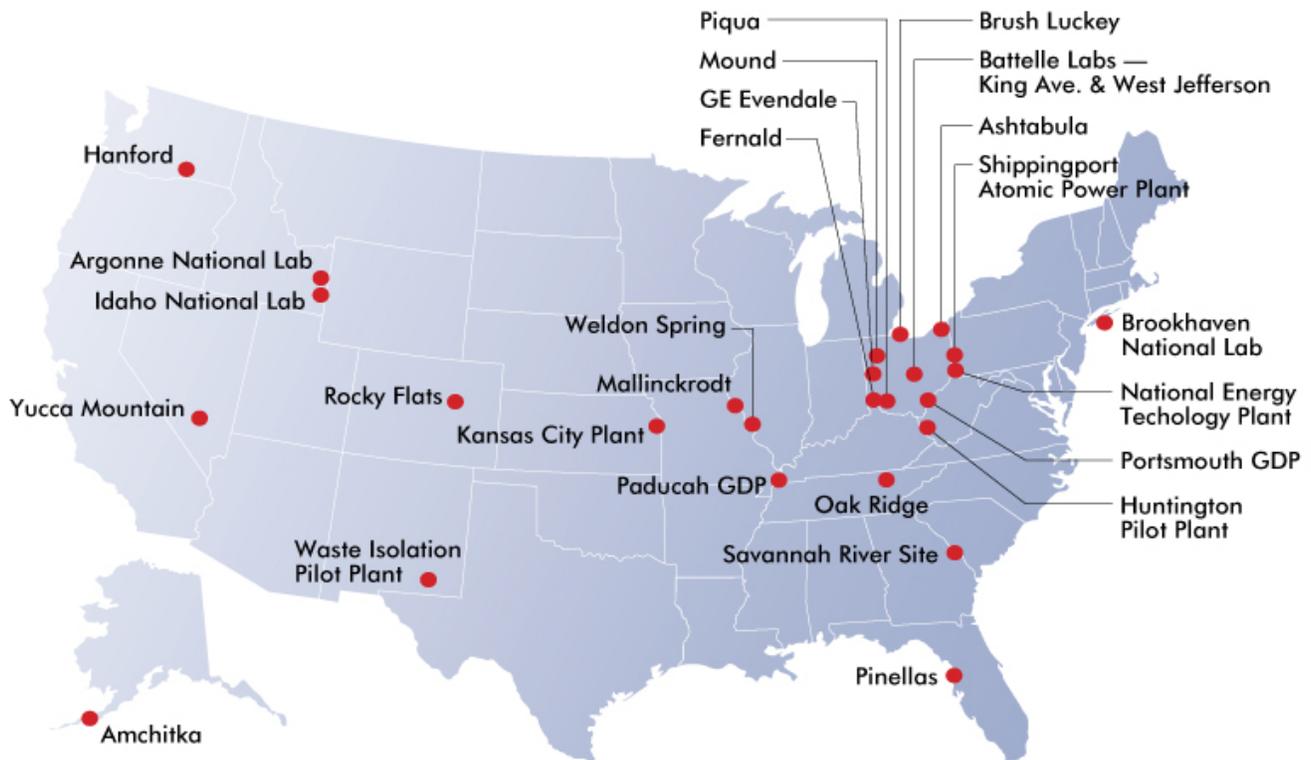
BTMed is administered by CPWR – The Center for Construction Research and Training, the occupational health research and development center of the Building and Construction Trades Department of the AFL-CIO, in partnership with Stoneturn Consultants, Duke University Medical Center, University of Cincinnati, and Zenith-American Solutions.



### What we do:

BTMed identifies construction workers who have been employed on DOE sites and screens them for occupational illnesses. In its 17-year history, BTMed has provided 28,000 screenings to more than 21,000 workers from 27 different DOE sites for medical conditions through a network of 200 specially credentialed clinics across the country. Workers are provided an initial screening and can return every three years for another screening.

### BTMed covered DOE sites:





Left: CT scan machine in Richland, WA.

Right: Bob Irwin, former Hanford worker, ready for his scan.

### What we have found:

- Abnormal chest x-rays (CXRs) in 18% of these workers
- Abnormal pulmonary function in 40%
- Evidence of hearing loss in a striking 64%.

Workers exhibiting these and similar symptoms are referred for additional testing and care.

### BTMed Early Lung Cancer Detection (ELCD)

An alarming 160,000 Americans die from lung cancer each year, and the combination of smoking with exposure to workplace dusts and toxins can put construction workers at an elevated risk. BTMed has been delivering the low-dose computed tomography (CT) scan free of charge at Oak Ridge, TN, since 2011, and now does so at the nation's largest DOE site in Hanford, WA.

More than 200 participants have been scanned and the findings include many suspicious lung nodules that require follow-up, two participants with stage IV lung cancer, a kidney cancer, and other serious health issues.

BTMed is working to expand CT scanning availability to other DOE sites and hopes to add additional sites in the coming year.

### *CT Scan Detects Cancer in “Healthy” Worker*

After working on and off at the DOE's Oak Ridge Reservation as a sheet metal worker for 15 years, Larry Buckner was invited to receive a low-dose CT scan. He felt perfectly healthy at the time but decided to participate anyway. He found out that he wasn't as healthy as he felt. *The CT scan had detected cancer.*

Diagnosed with cancer and a non-cancerous tumor that will require kidney removal, Buckner says he “didn't have any symptoms. If it wasn't for getting scanned, I wouldn't have known about it. Not at all!”

“I don’t know how far down the road I would’ve found out about my cancer had it not been for that scan,” he reflected. “By then, it may have been too late.”

**Toll-free number:** 1-800-866-9663 or 1-888-464-0009

**Website:** [www.btmed.org](http://www.btmed.org)



**Larry Buckner relaxing on his porch.**

## The Pantex Former Worker Medical Surveillance Program Conducted by the Drexel University School of Public Health

### Who we are:

Primary: Drexel University School of Public Health

Outreach: Department of Occupational Health Sciences,  
The University of Texas Health Science Center at  
Tyler, Texas

Clinical Services: West Texas A&M Health Partners Clinic,  
Amarillo, Texas



THE PANTEX FORMER WORKER MEDICAL SURVEILLANCE PROGRAM

### What we do:

- The Pantex Former Worker Medical Surveillance Program offers former Pantex Plant employees and contract workers the opportunity to obtain an independent, objective assessment of their health in relation to their workplace exposures by a health care provider experienced in occupational medicine.
- Participants are scheduled for an appointment at a time convenient for them at the Health Partners Clinic in Amarillo, which is affiliated with a university nursing program.
- Each participant completes an occupational exposure history, as well as past medical history, prior to having their medical screening examination.
- The screening exam may include some or all of the following tests: chest x-ray, spirometry, Beryllium Lymphocyte Proliferation Test (BeLPT), blood chemistry tests, and urinalysis.
- Former workers who participate in the program receive results of their clinical exam and medical tests in a personalized “results letter” from a board certified occupational medicine physician along with any necessary follow-up recommendations.
- The screening process is an opportunity for former workers to receive additional wellness information and support for lifestyle changes to improve their health and quality of life.
- Each participant is offered the opportunity to return for a “re-screening” exam every three years; the re-screening exam is focused on previous findings and any new health developments.
- Students from multiple disciplines including sports and exercise science, undergraduate and graduate level nursing, health sciences, and medical assistant programs are provided educational opportunities by participating in clinic activities. This is a unique opportunity for students of health care professions to learn about occupational medicine.
- Our Participation Surveys continue to show 99% satisfaction with the program.



**Dr. Pinson and Oscar Holt visit after his screening. Mr. Holt was one of the first former workers to participate in the Pantex program and has now returned for his 3rd screening visit.**

**What we have found:**

- CXRs: 6.7% demonstrated findings consistent with work-related lung disease
- Pulmonary function tests (PFTs): 39.9% demonstrated findings consistent with obstructive disease
- BeLPT s: 1.5% had at least one abnormal BeLPT
- Audiometry: Audiometry is not part of the Pantex former worker screening protocol.

**Toll-free number:** 1-888-378-8939

## **Medical Exam Program for Former Workers from Los Alamos National Laboratory and Sandia (NM) National Laboratories**

### **Who we are:**

- Johns Hopkins Bloomberg School of Public Health (JHBSPH)
- University of New Mexico (UNM)

### **What we do:**

- Provide medical screening exams to all interested former workers from Los Alamos National Laboratory (LANL) and Sandia National Laboratories (SNL).
- The JHBSPH Medical Exam Program is one of several unique programs within the DOE FWP. Examinations are done in New Mexico in Espanola, NM, and Albuquerque, NM, by occupational health professionals from JHBSPH and UNM.
- Examination sessions are scheduled over a two-day or three-day period two to three times per year. Physicians, health care providers, and occupational health professionals travel from Baltimore, MD; Espanola, NM; and Albuquerque, NM, to the examination site to conduct physical examinations.
- During examination sessions, former workers have the opportunity to meet with the program occupational medicine physician to discuss their examination results and to ask questions.
- Each participant has a detailed exposure and medical history interview prior to their initial examination and a short medical history interview before their re-examination. These interviews are conducted by a former worker from LANL.
- The program staff assists former workers with workers' compensation claims and, when appropriate, writes letters in support of claims for Federal compensation for former workers from both sites.
- The project has completed 3,693 examinations of former workers since the program began in 2000. Of these exams, 3,200 were new exams, and 493 were re-examinations of former LANL workers for past exposures to asbestos, beryllium, and radiation, and SNL former workers for past exposure to asbestos, beryllium, radiation, and silica.
- On exit surveys, over 98% of program participants stated that they were satisfied with their overall evaluation, and 97% would recommend the program to other former workers.
- The program works with the Joint Outreach Task Group to develop outreach strategies to recruit former workers who are eligible for the medical screening program and the Energy Employees Occupational Illness Compensation Program Act (EEOICPA).
- We recently participated in four Department of Labor Town Hall Meetings in New Mexico, where we spoke with former workers and invited them to participate in the program.
- We were invited again this year to participate in a Cold War Patriots Resource Meeting where we spoke with former workers and invited them to participate in the program.

**What we have found:**

- CXRs: 11.6% have findings consistent with work-related lung disease
- PFTs: 19.4% demonstrated findings consistent with obstructive disease
- BeLPTs: 1.5% had at least one abnormal BeLPT
- Audiometry: 56% demonstrated hearing loss for normal speech tones.

**Toll-free number:** 1-877-500-8615

**Website:** <http://www.jhsph.edu/lanlfw/>

## National Supplemental Screening Program (NSSP)

### Who we are:

The NSSP is managed by Oak Ridge Associated Universities with a team from:

- National Jewish Health
- Comprehensive Health Services, Inc.
- University of Colorado, Denver Health Sciences Center
- Axion Health.



### What we do:

- Since 2005, the NSSP has provided medical screening examinations to former DOE employees from:
  - Argonne National Laboratory
  - Fermi National Accelerator Laboratory
  - Hanford
  - Kansas City Plant
  - Princeton Plasma Physics Laboratory
  - Pinellas
  - Rocky Flats
  - Savannah River Site
  - DOE sites where no FWP has been assigned.
- The NSSP also accepts referrals (production, construction, and building trades) from the other FWPs whose participants may live outside of their respective medical screening coverage areas.
- NSSP participants have the opportunity for a rescreening examination every three years.
- More than 99% of the responding participants were satisfied with their experience in the NSSP.
- In 2013 the NSSP began a pilot low dose CT screening program to detect lung cancer at an early stage as well as work-related lung diseases, such as asbestos-related lung disease and silicosis. This pilot program will provide information about participation that will help guide the expansion of the program to sites around the country.

### What we have found:

The NSSP has provided medical screening examinations to 11,985 former DOE employees representing 47 DOE sites.

- CXRs:
  - 10.9% had findings consistent with asbestos-related lung disease
  - 3.6% had suspicious lung nodules or lesions identified
  - 0.2% had lung cancer diagnosed
- PFTs:
  - 19.6% had findings consistent with restrictive lung disease
  - 17.8% had findings consistent with obstructive lung disease
- BeLPTs: 3.1% had at least one abnormal BeLPT
- Audiometry: 42.7% demonstrated hearing loss for normal speech tones

**NSSP Toll-free number:** 1-866-812-6703

**NSSP Website:** <http://www.ornl.gov/nssp>

“The results from this exam saved my life. I don’t know how I can ever thank you.” *-former Savannah River Site worker*

## Worker Health Protection Program (WHPP)

### Who we are:

The WHPP is administered by Queens College of the City University of New York in conjunction with the United Steelworkers, the Atomic Trades and Labor Council in Oak Ridge, and the Fernald Medical Screening Program. Screening is conducted through partnerships with medical groups located within local DOE communities. Medical partners include Kaiser Permanente in Northern California and the University of Nevada School of Medicine's Department of Family and Community Medicine in Las Vegas, Nevada.



WHPP employs a small network of former and current DOE workers as “local coordinators” to conduct outreach and assist with program operations in the DOE communities where medical screening occurs. Activities of local coordinators include conducting outreach at community events, scheduling and assisting with program registration, answering medical screening questions, liaising with local site offices and worker groups, advising on the development of program materials, and providing appropriate guidance regarding the EEOICPA claims process. Local coordinators have been an essential component in the recruitment of the DOE workers who have participated in over 29,000 original examinations through WHPP.

### What we do:

The consortium utilizes expert occupational medicine physicians and support staff to provide independent medical screening to workers who are at risk of illnesses related to their work from 13 DOE sites. In addition to the standard FWP medical screening, WHPP administers the ELCD program with low-dose CT scans at nine DOE sites.

WHPP provides both FWP medical screening and the ELCD program to workers from:

- Idaho National Laboratory (Idaho)
- K-25 Gaseous Diffusion Plant (GDP) (Tennessee)
- Fernald (Ohio)
- Mound (Ohio)
- Nevada Test Site, now called the Nevada National Security Site (Nevada)
- Oak Ridge National Laboratory (Tennessee)
- Paducah GDP (Kentucky)
- Portsmouth GDP (Ohio)
- Y-12 National Security Complex (Tennessee).

Only FWP medical screenings are provided to workers from:

- Brookhaven National Laboratory (New York)
- Lawrence Berkeley National Laboratory (California)
- Lawrence Livermore National Laboratory (California)
- Sandia National Laboratories (California).



**Sandie Medina, NTS Coordinator, and Tommy White at Nevada Health Fair.**

In 2014, WHPP plans to begin medical screening at the Waste Isolation Pilot Plant in New Mexico and the SLAC National Accelerator Laboratory in California.

**What we have found:**

**FWP medical screening**

- CXRs (N=43,167): 5.62% demonstrated findings consistent with work-related lung disease (total percentage of CXR abnormalities in the following categories: asbestosis without pleural disease, asbestosis with pleural disease, asbestos-related pleural disease, silicosis, mixed dust pneumoconiosis, and pneumoconiosis not otherwise specified)
- PFTs (N=42,726): 20.87% demonstrated findings consistent with obstructive disease (percentage of PFT abnormalities – obstructive pattern and mixed pattern combined)
- BeLPTs (N=37,410): 2.48% had at least one abnormal BeLPT (total percentage of BeLPT abnormalities – 1, 2 or 1 and 1+ borderlines)
- Audiometry (N=27,128): 61.74% demonstrated hearing loss for normal speech tones.

**ELCD program**

- 102 ELCD program participants have been identified as having primary lung cancer.
- 73 of the 96 (76%) individuals whose lung cancers have been staged to date had an early stage lung cancer (Stage I or II non-small cell or limited small cell) at the time of diagnosis.
- Lung cancer was detected in one of approximately 129 DOE workers tested (N=13,172).

**Toll-free number:** 1-888-241-1199

**Website:** <http://worker-health.org>

“The Worker Health Protection Program has helped a lot of former workers from the Nevada Test Site. In many retirees, I’ve seen this program catch illness at an early stage, when something can be done about it and treatment can be more successful. This includes not only lung cancer, but for other illnesses related to our work as well. The program is especially helpful for the many former workers who do not have health insurance right now.” -*Oscar Foger, former Nevada Test Site worker*

## Former Burlington Atomic Energy Commission Plant (BAECP) and Ames Laboratory Workers Medical Screening Program



### Who we are:

The University of Iowa College of Public Health

### What we do:

The University of Iowa College of Public Health administers medical screenings to former nuclear weapons workers from two DOE facilities in Iowa: Line 1/Division B/ BAECP at the Iowa Army Ammunition Plant (IAAP) in West Burlington, Iowa, operational between 1949 and mid-1975, and the Ames Laboratory at Iowa State University in Ames, Iowa, established in the early 1940s.

Approximately 7,000 workers were employed in assembly and disassembly of nuclear weapons on IAAP's Line 1, and approximately 5,684 are living. Current addresses have been obtained for these individuals; 7% of those do not live in Iowa and are being referred to the NSSP for screenings. Medical screenings for BAECP workers began in 2002. As of September 30, 2013, a total of 1,338 former workers have been screened. A total of 774 Line 1 former workers have received a three-year repeat screening with 315 receiving a six-year and 97 a nine-year repeat screening.

In the early 1940s, the Ames Laboratory developed the process for producing large quantities of high-purity uranium metal for nuclear reaction purposes for the Manhattan Project. Overall, the Lab produced over 2 million pounds (1,000 tons) of purified uranium. The Ames Laboratory presently conducts a broad range of applied chemical and physical research.

Over 13,000 employees worked at the Ames Laboratory, and 10,029 of those workers are still living and have known addresses; 74% do not live in Iowa and are being referred to NSSP for screenings. Medical screenings for former Ames Laboratory workers began in 2006. As of September 30, 2013, a total of 1,762 former Ames Laboratory workers have been screened. A total of 655 former Ames Laboratory workers have received a three-year repeat screening, and 105 have received a six-year repeat screening.



Commemoration luncheon for former Ames Laboratory workers, held  
September 13, 2013.

### What we have found:

- CXRs: 392 (14%) former workers demonstrated findings suspicious for work-related lung disease (n=2,828).

- PFTs: 442 (15%) former workers demonstrated findings consistent with obstructive disease (n=2,894).
- BeLPTs: 89 (3%) former workers had at least one abnormal BeLPT (n=2,944).
- Uncontrolled Hypertension Detected: 399 (22%) former workers were hypertensive; 14 (0.8%) had urgent/severe hypertension (blood pressure >180/110); and 1 (0.5%) had emergent hypertension (blood pressure >220/140), n=1,849.
- Uncontrolled Diabetes Mellitus Detected: 148 (5%) former workers had hyperglycemia (non-fasting glucose  $\geq$  200mg/dL), n=2,910. 91 (10%) former workers indicated fair control of their diabetes (hemoglobin A1c 7.1-9.0) and 20 (2.2%) had poor control (A1c  $\geq$  9.1), n=920.
- Cancers: 62 (2%) former workers have been newly diagnosed with a cancer since having their screening, with nearly 40% diagnosed with lung cancer (24 cases), n=3,100.
- Sarcoid lung disease: 5 of the BAECF former workers and 11 of the Ames Laboratory former workers were found to have a history of pulmonary sarcoidosis.



**Dr. Fuortes takes the blood pressure of Line 1, IAAP former worker Willis Dowell.**

**Toll-free number:** 1-866-282-5818

**Website:** [www.iowafwp.org](http://www.iowafwp.org)

“I believe that if it had not been for this program contacting my husband about the medical screening and informing us about his eligibility to file a claim, we could not have afforded his medications and oxygen equipment. I am very grateful—thank you!” *-former Iowa Army Ammunition Plant worker*

This page intentionally left blank.

## Appendix B: Exams Conducted through the Former Worker Program

### Number of Former Workers Screened and Re-screened by U.S. Department of Energy Site (through September 2013)

State	Sites	Initial Screenings	Re-screens <sup>8</sup>
AK	Amchitka Island Test Site	1,378	528
CA	Lawrence Berkeley National Laboratory	538	104
CA	Lawrence Livermore National Laboratory	1,856	679
CA	Sandia National Laboratories, CA	219	64
CO	Rocky Flats Plant (Construction Workers)	708	246
CO	Rocky Flats Plant (Production Workers)	3,298	601
FL	Pinellas (Production Workers)	608	109
IA	Ames Laboratory	1,762	760
IA	Iowa Army Ammunition Plant	1,338	1,187
ID	Idaho National Laboratory (Construction Workers)	1,064	257
ID	Idaho National Laboratory (Production Workers)	4,645	2,346
IL	Argonne National Laboratory	529	32
IL	Fermi National Accelerator Laboratory	114	6
KY	Paducah GDP (Construction Workers)	923	369
KY	Paducah GDP (Production Workers)	3,388	1,661
MO	Kansas City Plant (Construction Workers)	668	169
MO	Kansas City Plant (Production Workers)	2,349	371
NM	Los Alamos National Laboratory	2,848	439
NM	Sandia National Laboratories, NM	373	38
NV	Nevada National Security Site	4,460	1,808
NY	Brookhaven National Laboratory (Construction Workers)	592	216
NY	Brookhaven National Laboratory (Production Workers)	415	0

<sup>8</sup> Re-screen exams not yet being offered at Brookhaven National Laboratory for production workers.

OH	Feed Materials Production Center (Construction Workers)	1,997	797
OH	Feed Materials Production Center (Production Workers)	1,253	503
OH	Mound Plant (Construction Workers)	353	109
OH	Mound Plant (Production Workers)	1,530	713
OH	Portsmouth GDP (Construction Workers)	1,107	419
OH	Portsmouth GDP (Production Workers)	3,637	2,220
SC	Savannah River Site (Construction Workers)	4,160	1,364
SC	Savannah River Site (Production Workers)	4,769	31
TN	Oak Ridge K-25 (K-25) (Production Workers)	4,649	1,916
TN	Oak Ridge National Laboratory (ORNL) (Production Workers)	1,912	814
TN	Oak Ridge Reservation <sup>9</sup> (Construction Workers)	3,165	1,177
TN	Y-12 National Security Complex (Y-12) (Production Workers)	3,825	1,506
TX	Pantex Plant	988	266
WA	Hanford Site (Construction Workers)	3,358	1,056
WA	Hanford Site (Production Workers)	4,557	680
	Other Sites <sup>10</sup> (Construction Workers)	1,348	315
	Other Sites <sup>11</sup> (Production Workers)	135	7
<b>Grand Total</b>		<b>76,816</b>	<b>25,883</b>

9 Includes K-25, ORNL, and Y-12.

10 Sites where the number of individuals screened by the Building Trades National Medical Screening Program to date is less than 100.

11 Sites where the number of individuals screened by the National Supplemental Screening Program to date is less than 100.

## Appendix C: Program Findings

More in-depth information regarding the exam components offered through the program can be found on the Former Worker Program website ([http://www.hss.energy.gov/healthsafety/FWSP/formerworkermed/conventional\\_medical\\_screening\\_program.html](http://www.hss.energy.gov/healthsafety/FWSP/formerworkermed/conventional_medical_screening_program.html)). Medical findings by the U.S. Department of Energy (DOE) site/worker population are provided below.

Table 9 illustrates chest x-ray findings on initial exams to date, and Table 10 provides findings on re-screens.

**Table 9. Chest X-ray Findings on Initial Screening  
(through September 2013)**

State	Sites	Workers Screened	Asbestos-related Lung Disease	Silicosis	Other Dust-related Disease	Lung Nodules, Nodes, or Lesions
AK	Amchitka Island Test Site	1,068	152 (14.2%)	1 (0.1%)	0 (0.0%)	58 (5.4%)
CA	Lawrence Berkeley National Laboratory	505	9 (1.8%)	0 (0.0%)	5 (1.0%)	27 (5.3%)
CA	Lawrence Livermore National Laboratory	1,758	41 (2.3%)	0 (0.0%)	7 (0.4%)	121 (6.9%)
CA	Sandia National Laboratories, CA	208	4 (1.9%)	0 (0.0%)	1 (0.5%)	16 (7.7%)
CO	Rocky Flats Plant (Construction Workers)	631	210 (33.3%)	5 (0.8%)	12 (1.9%)	23 (3.6%)
CO	Rocky Flats Plant (Production Workers)	2,885	712 (24.7%)	3 (0.1%)	45 (1.6%)	89 (3.1%)
FL	Pinellas (Production Workers)	589	49 (8.3%)	4 (0.7%)	16 (2.7%)	29 (4.9%)
IA	Ames Laboratory	1,698	57 (9.8%)	0 (0.0%)	55 (5.3%)	43 (2.5%)
IA	Iowa Army Ammunition Plant	1,236	121 (11.3%)	0 (0.0%)	66 (0.2%)	31 (3.2%)
ID	Idaho National Laboratory (Construction Workers)	856	97 (11.3%)	0 (0.0%)	2 (0.2%)	27 (3.2%)
ID	Idaho National Laboratory (Production Workers)	4,598	320 (7.0%)	1 (0.0%)	18 (0.4%)	83 (1.8%)
IL	Argonne National Laboratory	486	59 (12.1%)	0 (0.0%)	15 (3.1%)	16 (3.3%)
IL	Fermi National Accelerator Laboratory	108	12 (11.1%)	0 (0.0%)	5 (4.6%)	1 (0.9%)

KY	Paducah Gaseous Diffusion Plant (GDP) (Construction Workers)	846	145 (17.1%)	7 (0.8%)	12 (1.4%)	46 (5.4%)
KY	Paducah GDP (Production Workers)	3,382	189 (5.6%)	26 (0.8%)	16 (0.5%)	53 (1.6%)
MO	Kansas City Plant (Construction Workers)	591	82 (13.9%)	0 (0.0%)	1 (0.2%)	30 (5.1%)
MO	Kansas City Plant (Production Workers)	2,297	244 (10.6%)	1 (0.0%)	62 (2.7%)	96 (4.2%)
NM	Los Alamos National Laboratory	2,675	190 (7.1%)	0 (0.0%)	89 (3.3%)	52 (1.9%)
NM	Sandia National Laboratories, NM	350	23 (6.6%)	1 (0.3%)	16 (4.6%)	5 (1.4%)
NV	Nevada National Security Site	4,352	501 (11.5%)	38 (0.9%)	75 (1.7%)	335 (7.7%)
NY	Brookhaven National Laboratory (Construction Workers)	474	89 (18.8%)	0 (0.0%)	0 (0.0%)	9 (1.9%)
NY	Brookhaven National Laboratory (Production Workers)	400	18 (4.5%)	0 (0.0%)	4 (1.0%)	3 (0.8%)
OH	Feed Materials Production Center (Construction Workers)	1,763	209 (11.9%)	4 (0.2%)	0 (0.0%)	32 (1.8%)
OH	Feed Materials Production Center (Production Workers)	1,226	22 (1.8%)	0 (0.0%)	9 (0.7%)	17 (1.4%)
OH	Mound Plant (Construction Workers)	291	60 (20.6%)	0 (0.0%)	3 (1.0%)	6 (2.1%)
OH	Mound Plant (Production Workers)	1,505	78 (5.2%)	2 (0.1%)	3 (0.2%)	23 (1.5%)
OH	Portsmouth GDP (Construction Workers)	984	184 (18.7%)	3 (0.3%)	3 (0.3%)	35 (3.6%)
OH	Portsmouth GDP (Production Workers)	3,629	211 (5.8%)	9 (0.2%)	13 (0.4%)	57 (1.6%)
SC	Savannah River Site (Construction Workers)	3,663	377 (10.3%)	3 (0.1%)	1 (0.0%)	134 (3.7%)
SC	Savannah River Site (Production Workers)	3,106	913 (29.4%)	55 (1.8%)	337 (10.8%)	24 (0.8%)
TN	Oak Ridge K-25 (K-25) (Production Workers)	4,520	271 (6.0%)	9 (0.2%)	23 (0.5%)	55 (1.2%)
TN	Oak Ridge National Laboratory (ORNL) (Production Workers)	1,901	98 (5.2%)	4 (0.2%)	1 (0.1%)	15 (0.8%)

TN	Oak Ridge Reservation <sup>12</sup> (Construction Workers)	2,631	501 (19.0%)	6 (0.2%)	6 (0.2%)	104 (4.0%)
TN	Y-12 National Security Complex (Y-12) (Production Workers)	3,798	205 (5.4%)	3 (0.1%)	11 (0.3%)	43 (1.1%)
TX	Pantex Plant	973	48 (4.9%)	1 (0.1%)	6 (0.6%)	38 (3.9%)
WA	Hanford Site (Construction Workers)	2,717	743 (27.3%)	3 (0.1%)	2 (0.1%)	155 (5.7%)
WA	Hanford Site (Production Workers)	4,097	900 (22.0%)	1 (0.0%)	53 (1.3%)	212 (5.2%)
	Other Sites <sup>13</sup> (Construction Workers)	1,081	167 (15.4%)	4 (0.4%)	0 (0.0%)	24 (2.2%)
	Other Sites <sup>14</sup> (Production Workers)	126	14 (11.1%)	0 (0.0%)	7 (5.6%)	4 (3.2%)
<b>Grand Total</b>		<b>68,936</b>	<b>8,173 (11.9%)</b>	<b>193 (0.3%)</b>	<b>1,000 (1.5%)</b>	<b>2,113 (3.1%)</b>

**Table 10. Chest X-ray Findings on Re-screening  
(through September 2013)**

State	Sites	Workers Screened	Asbestos- related Lung Disease	Silicosis	Other Dust -related Disease	Lung Nodules, Nodes, or Lesions
AK	Amchitka Island Test Site	395	25 (6.3%)	1 (0.3%)	0 (0.0%)	14 (3.5%)
CA	Lawrence Berkeley National Laboratory	75	1 (1.3%)	0 (0.0%)	1 (1.3%)	4 (5.3%)
CA	Lawrence Livermore National Laboratory	516	2 (0.4%)	0 (0.0%)	1 (0.2%)	35 (6.8%)
CA	Sandia National Laboratories, CA	48	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (8.3%)
CO	Rocky Flats Plant (Construction Workers)	218	11 (5.0%)	0 (0.0%)	2 (0.9%)	2 (0.9%)
CO	Rocky Flats Plant (Production Workers)	585	188 (32.1%)	2 (0.3%)	9 (1.5%)	10 (1.7%)
FL	Pinellas (Production Workers)	102	5 (4.9%)	0 (0.0%)	1 (1.0%)	0 (0.0%)
IA	Ames Laboratory	626	10 (1.6%)	0 (0.0%)	13 (2.1%)	9 (1.4%)
IA	Iowa Army Ammunition Plant	490	40 (8.2%)	0 (0.0%)	43 (8.8%)	12 (2.4%)
ID	Idaho National Laboratory (Construction Workers)	230	19 (8.3%)	0 (0.0%)	0 (0.0%)	3 (1.3%)

<sup>12</sup> Includes K-25, ORNL, and Y-12.

<sup>13</sup> Sites where the number of individuals screened by the Building Trades National Medical Screening Program (BTMed) to date is less than 100.

<sup>14</sup> Sites where the number of individuals screened by the National Supplemental Screening Program (NSSP) to date is less than 100.

ID	Idaho National Laboratory (Production Workers)	1,565	69 (4.4%)	1 (0.1%)	2 (0.1%)	4 (0.3%)
IL	Argonne National Laboratory	29	1 (3.4%)	0 (0.0%)	3 (10.3%)	0 (0.0%)
IL	Fermi National Accelerator Laboratory	5	1 (20.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
KY	Paducah GDP (Construction Workers)	298	30 (10.1%)	0 (0.0%)	1 (0.3%)	19 (6.4%)
KY	Paducah GDP (Production Workers)	1,309	38 (2.9%)	1 (0.1%)	0 (0.0%)	8 (0.6%)
MO	Kansas City Plant (Construction Workers)	147	8 (5.4%)	0 (0.0%)	0 (0.0%)	2 (1.4%)
MO	Kansas City Plant (Production Workers)	349	12 (3.4%)	0 (0.0%)	12 (3.4%)	7 (2.0%)
NM	Los Alamos National Laboratory	406	53 (13.1%)	0 (0.0%)	30 (7.4%)	2 (0.5%)
NM	Sandia National Laboratories, NM	35	8 (22.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
NV	Nevada National Security Site	1,257	77 (6.1%)	9 (0.7%)	41 (3.3%)	125 (9.9%)
NY	Brookhaven National Laboratory (Construction Workers)	180	9 (5.0%)	0 (0.0%)	0 (0.0%)	2 (1.1%)
OH	Feed Materials Production Center (Construction Workers)	616	43 (7.0%)	0 (0.0%)	0 (0.0%)	4 (0.6%)
OH	Feed Materials Production Center (Production Workers)	395	6 (1.5%)	0 (0.0%)	0 (0.0%)	4 (1.0%)
OH	Mound Plant (Construction Workers)	96	9 (9.4%)	0 (0.0%)	1 (1.0%)	1 (1.0%)
OH	Mound Plant (Production Workers)	560	15 (2.7%)	0 (0.0%)	0 (0.0%)	2 (0.4%)
OH	Portsmouth GDP (Construction Workers)	358	49 (13.7%)	0 (0.0%)	0 (0.0%)	4 (1.1%)
OH	Portsmouth GDP (Production Workers)	1,531	93 (6.1%)	1 (0.1%)	1 (0.1%)	14 (0.9%)
SC	Savannah River Site (Construction Workers)	1,040	101 (9.7%)	1 (0.1%)	0 (0.0%)	45 (4.3%)
SC	Savannah River Site (Production Workers)	29	2 (6.9%)	0 (0.0%)	1 (3.4%)	0 (0.0%)
TN	K-25 (Production Workers)	1,468	47 (3.2%)	0 (0.0%)	2 (0.1%)	9 (0.6%)
TN	ORNL (Production Workers)	623	19 (3.0%)	0 (0.0%)	1 (0.2%)	1 (0.2%)

TN	Oak Ridge Reservation <sup>15</sup> (Construction Workers)	944	115 (12.2%)	0 (0.0%)	0 (0.0%)	33 (3.5%)
TN	Y-12 (Production Workers)	1,119	48 (4.3%)	1 (0.1%)	2 (0.2%)	2 (0.2%)
TX	Pantex Plant	251	10 (4.0%)	0 (0.0%)	0 (0.0%)	7 (2.8%)
WA	Hanford Site (Construction Workers)	827	68 (8.2%)	0 (0.0%)	1 (0.1%)	31 (3.7%)
WA	Hanford Site (Production Workers)	566	74 (13.1%)	0 (0.0%)	15 (2.7%)	21 (3.7%)
	Other Sites <sup>16</sup> (Construction Workers)	294	13 (4.4%)	1 (0.3%)	2 (0.7%)	3 (1.0%)
	Other Sites <sup>17</sup> (Production Workers)	4	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
<b>Grand Total</b>		<b>19,116</b>	<b>1,294 (6.8%)</b>	<b>17 (0.1%)</b>	<b>184 (1.0%)</b>	<b>425 (2.2%)</b>

Table 11 illustrates spirometry (breathing test) findings to date on initial exams, and Table 12 provides findings on re-screening.

**Table 11. Spirometry Findings on Initial Screening  
(through September 2013)**

State	Sites	Workers Screened	Obstructive Airways Dysfunction Detected
AK	Amchitka Island Test Site	1,066	166 (15.6%)
CA	Lawrence Berkeley National Laboratory	517	51 (9.9%)
CA	Lawrence Livermore National Laboratory	1,759	217 (12.3%)
CA	Sandia National Laboratories, CA	205	21 (10.2%)
CO	Rocky Flats Plant (Construction Workers)	624	190 (30.4%)
CO	Rocky Flats Plant (Production Workers)	3,208	803 (25.0%)
FL	Pinellas (Production Workers)	582	168 (28.9%)
IA	Ames Laboratory	1,722	207 (12.0%)
IA	Iowa Army Ammunition Plant	1,266	252 (19.9%)
ID	Idaho National Laboratory (Construction Workers)	841	217 (25.8%)
ID	Idaho National Laboratory (Production Workers)	4,549	826 (18.2%)
IL	Argonne National Laboratory	497	50 (10.1%)
IL	Fermi National Accelerator Laboratory	107	6 (5.6%)
KY	Paducah GDP (Construction Workers)	832	221 (26.6%)

<sup>15</sup> Includes K-25, ORNL, and Y-12.

<sup>16</sup> Sites where the number of individuals screened by BTMed to date is less than 100.

<sup>17</sup> Sites where the number of individuals screened by the NSSP to date is less than 100.

KY	Paducah GDP (Production Workers)	3,328	503 (15.1%)
MO	Kansas City Plant (Construction Workers)	581	136 (23.4%)
MO	Kansas City Plant (Production Workers)	2,282	538 (23.6%)
NM	Los Alamos National Laboratory	1,794	552 (30.8%)
NM	Sandia National Laboratories, NM	323	41 (12.7%)
NV	Nevada National Security Site	4,366	1,322 (30.3%)
NY	Brookhaven National Laboratory (Construction Workers)	495	66 (13.3%)
NY	Brookhaven National Laboratory (Production Workers)	407	54 (13.3%)
OH	Feed Materials Production Center (Construction Workers)	1,729	348 (20.1%)
OH	Feed Materials Production Center (Production Workers)	1,207	168 (13.9%)
OH	Mound Plant (Construction Workers)	296	74 (25.0%)
OH	Mound Plant (Production Workers)	1,453	333 (22.9%)
OH	Portsmouth GDP (Construction Workers)	980	245 (25.0%)
OH	Portsmouth GDP (Production Workers)	3,593	759 (21.1%)
SC	Savannah River Site (Construction Workers)	3,660	651 (17.8%)
SC	Savannah River Site (Production Workers)	2,468	295 (12.0%)
TN	K-25 (Production Workers)	4,387	924 (21.1%)
TN	ORNL (Production Workers)	1,858	379 (20.4%)
TN	Oak Ridge Reservation <sup>18</sup> (Construction Workers)	2,611	504 (19.3%)
TN	Y-12 (Production Workers)	3,725	846 (22.7%)
TX	Pantex Plant	967	345 (35.7%)
WA	Hanford Site (Construction Workers)	2,721	699 (25.7%)
WA	Hanford Site (Production Workers)	4,441	878 (19.8%)
	Other Sites <sup>19</sup> (Construction Workers)	1,074	202 (18.8%)
	Other Sites <sup>20</sup> (Production Workers)	126	30 (23.8%)
<b>Grand Total</b>		<b>68,647</b>	<b>14,287 (20.8%)</b>

18 Includes K-25, ORNL, and Y-12.

19 Sites where the number of individuals screened by BTMed to date is less than 100.

20 Sites where the number of individuals screened by the NSSP to date is less than 100.

**Table 12. Spirometry Findings on Re-screening  
(through September 2013)**

State	Sites	Workers Screened	Obstructive Airways Dysfunction Detected
AK	Amchitka Island Test Site	388	33 (8.5%)
CA	Lawrence Berkeley National Laboratory	74	3 (4.1%)
CA	Lawrence Livermore National Laboratory	529	27 (5.1%)
CA	Sandia National Laboratories, CA	50	1 (2.0%)
CO	Rocky Flats Plant (Construction Workers)	220	10 (4.5%)
CO	Rocky Flats Plant (Production Workers)	577	90 (15.6%)
FL	Pinellas (Production Workers)	104	22 (21.2%)
IA	Ames Laboratory	637	54 (8.5%)
IA	Iowa Army Ammunition Plant	450	109 (24.2%)
ID	Idaho National Laboratory (Construction Workers)	226	13 (5.8%)
ID	Idaho National Laboratory (Production Workers)	1,558	614 (39.4%)
IL	Argonne National Laboratory	29	0 (0.0%)
IL	Fermi National Accelerator Laboratory	6	0 (0.0%)
KY	Paducah GDP (Construction Workers)	295	15 (5.1%)
KY	Paducah GDP (Production Workers)	1,275	286 (22.4%)
MO	Kansas City Plant (Construction Workers)	144	3 (2.1%)
MO	Kansas City Plant (Production Workers)	345	38 (11.0%)
NM	Los Alamos National Laboratory	354	52 (14.7%)
NM	Sandia National Laboratories, NM	33	4 (12.1%)
NV	Nevada National Security Site	1,335	394 (29.5%)
NY	Brookhaven National Laboratory (Construction Workers)	187	4 (2.1%)
OH	Feed Materials Production Center (Construction Workers)	588	22 (3.7%)
OH	Feed Materials Production Center (Production Workers)	379	68 (17.9%)
OH	Mound Plant (Construction Workers)	93	4 (4.3%)
OH	Mound Plant (Production Workers)	555	168 (30.3%)
OH	Portsmouth GDP (Construction Workers)	350	25 (7.1%)
OH	Portsmouth GDP (Production Workers)	1,517	614 (40.5%)
SC	Savannah River Site (Construction Workers)	1,019	53 (5.2%)
SC	Savannah River Site (Production Workers)	26	1 (3.8%)
TN	K-25 (Production Workers)	1,407	331 (23.5%)
TN	ORNL (Production Workers)	619	162 (26.2%)
TN	Oak Ridge Reservation <sup>21</sup> (Construction Workers)	926	81 (8.7%)

21 Includes K-25, ORNL, and Y-12.

TN	Y-12 (Production Workers)	1,108	303 (27.3%)
TX	Pantex Plant	242	12 (5.0%)
WA	Hanford Site (Construction Workers)	807	59 (7.3%)
WA	Hanford Site (Production Workers)	556	116 (20.9%)
	Other Sites <sup>22</sup> (Construction Workers)	297	7 (2.4%)
	Other Sites <sup>23</sup> (Production Workers)	5	0 (0.0%)
<b>Grand Total</b>		<b>19,310</b>	<b>3,798 (19.7%)</b>

Table 13 illustrates beryllium testing findings on initial exams to date, and Table 14 provides findings on re-screens.

**Table 13. Results of Beryllium Lymphocyte Proliferation Tests (BeLPTs) by DOE Site on Initial Screening (through September 2013)**

State	Sites	Workers Screened	1 Abnormal	2 Abnormal	1 Abnormal and 1+ Borderline
AK	Amchitka Island Test Site	75	2 (2.7%)	0 (0.0%)	0 (0.0%)
CA	Lawrence Berkeley National Laboratory	238	4 (1.7%)	5 (2.1%)	0 (0.0%)
CA	Lawrence Livermore National Laboratory	1,104	9 (0.8%)	30 (2.7%)	5 (0.5%)
CA	Sandia National Laboratories, CA	135	0 (0.0%)	3 (2.2%)	2 (1.5%)
CO	Rocky Flats Plant (Construction Workers)	632	4 (0.6%)	3 (0.5%)	0 (0.0%)
CO	Rocky Flats Plant (Production Workers)	1,879	16 (0.9%)	13 (0.7%)	12 (0.6%)
FL	Pinellas (Production Workers)	581	7 (1.2%)	21 (3.6%)	3 (0.5%)
IA	Ames Laboratory	1,713	24 (1.2%)	2 (0.8%)	6 (0.6%)
IA	Iowa Army Ammunition Plant	1,298	15 (1.6%)	11 (0.5%)	8 (0.6%)
ID	Idaho National Laboratory (Construction Workers)	832	13 (1.6%)	4 (0.5%)	5 (0.6%)
ID	Idaho National Laboratory (Production Workers)	4,246	38 (0.9%)	30 (0.7%)	14 (0.3%)
IL	Argonne National Laboratory	260	5 (1.9%)	2 (0.8%)	1 (0.4%)
IL	Fermi National Accelerator Laboratory	82	3 (3.7%)	0 (0.0%)	0 (0.0%)
KY	Paducah GDP (Construction Workers)	845	15 (1.8%)	8 (0.9%)	1 (0.1%)
KY	Paducah GDP (Production Workers)	2,907	41 (1.4%)	18 (0.6%)	7 (0.2%)

<sup>22</sup> Sites where the number of individuals screened by BTMed to date is less than 100.

<sup>23</sup> Sites where the number of individuals screened by the NSSP to date is less than 100.

MO	Kansas City Plant (Construction Workers)	581	2 (0.3%)	11 (1.9%)	3 (0.5%)
MO	Kansas City Plant (Production Workers)	2,235	36 (1.6%)	23 (1.0%)	9 (0.4%)
NM	Los Alamos National Laboratory	2,670	41 (1.5%)	31 (1.2%)	20 (0.7%)
NM	Sandia National Laboratories, NM	349	11 (3.2%)	3 (0.9%)	3 (0.9%)
NV	Nevada National Security Site	2,666	30 (1.1%)	21 (0.8%)	12 (0.5%)
NY	Brookhaven National Laboratory (Construction Workers)	481	5 (1.0%)	23 (4.8%)	0 (0.0%)
NY	Brookhaven National Laboratory (Production Workers)	400	3 (0.8%)	17 (4.3%)	5 (1.3%)
OH	Feed Materials Production Center (Construction Workers)	1,733	5 (0.3%)	13 (0.8%)	3 (0.2%)
OH	Feed Materials Production Center (Production Workers)	1,035	7 (0.7%)	6 (0.6%)	2 (0.2%)
OH	Mound Plant (Construction Workers)	292	0 (0.0%)	2 (0.7%)	0 (0.0%)
OH	Mound Plant (Production Workers)	1,456	23 (1.6%)	13 (0.9%)	4 (0.3%)
OH	Portsmouth GDP (Construction Workers)	979	15 (1.5%)	2 (0.2%)	0 (0.0%)
OH	Portsmouth GDP (Production Workers)	3,240	23 (0.7%)	10 (0.3%)	5 (0.2%)
SC	Savannah River Site (Construction Workers)	3,666	23 (0.6%)	35 (1.0%)	11 (0.3%)
SC	Savannah River Site (Production Workers)	2,044	51 (2.5%)	7 (0.3%)	4 (0.2%)
TN	K-25 (Production Workers)	4,578	108 (2.4%)	93 (2.0%)	25 (0.5%)
TN	ORNL (Production Workers)	1,760	25 (1.4%)	24 (1.4%)	8 (0.5%)
TN	Oak Ridge Reservation <sup>24</sup> (Construction Workers)	2,910	22 (0.8%)	20 (0.7%)	11 (0.4%)
TN	Y-12 (Production Workers)	3,265	57 (1.7%)	59 (1.8%)	10 (0.3%)
TX	Pantex Plant	953	9 (0.9%)	0 (0.0%)	0 (0.0%)
WA	Hanford Site (Construction Workers)	2,725	31 (1.1%)	28 (1.0%)	5 (0.2%)
WA	Hanford Site (Production Workers)	3,817	103 (2.7%)	27 (0.7%)	18 (0.5%)
	Other Sites <sup>25</sup> (Construction)	664	2 (0.3%)	2 (0.3%)	0 (0.0%)
	Other Sites <sup>26</sup> (Production)	92	0 (0.0%)	2 (2.2%)	0 (0.0%)
<b>Grand Total</b>		<b>61,343</b>	<b>826 (1.3%)</b>	<b>622 (1.0%)</b>	<b>222 (0.4%)</b>

24 Includes K-25, ORNL, and Y-12.

25 Sites where the number of individuals screened by BTMed to date is less than 100.

26 Sites where the number of individuals screened by the NSSP to date is less than 100.

**Table 14. Results of Beryllium Lymphocyte Proliferation Tests (BeLPTs)  
by DOE Site on Re-screening  
(through September 2013)**

State	Sites	Workers Screened	1 Abnormal <sup>27</sup>	2 Abnormal <sup>28</sup>	1 Abnormal and 1+ Borderline
AK	Amchitka Island Test Site	21	0 (0.0%)	0 (0.0%)	0 (0.0%)
CA	Lawrence Berkeley National Laboratory	39	0 (0.0%)	0 (0.0%)	0 (0.0%)
CA	Lawrence Livermore National Laboratory	409	3 (0.7%)	0 (0.0%)	0 (0.0%)
CA	Sandia National Laboratories, CA	37	2 (5.4%)	0 (0.0%)	0 (0.0%)
CO	Rocky Flats Plant (Construction Workers)	201	1 (0.5%)	0 (0.0%)	0 (0.0%)
CO	Rocky Flats Plant (Production Workers)	321	2 (0.6%)	0 (0.0%)	1 (0.3%)
FL	Pinellas (Production Workers)	100	0 (0.0%)	0 (0.0%)	1 (1.0%)
IA	Ames Laboratory	631	2 (0.3%)	2 (0.3%)	0 (0.0%)
IA	Iowa Army Ammunition Plant	749	8 (1.1%)	3 (0.4%)	0 (0.0%)
ID	Idaho National Laboratory (Construction Workers)	210	2 (1.0%)	0 (0.0%)	0 (0.0%)
ID	Idaho National Laboratory (Production Workers)	1,470	3 (0.2%)	13 (0.9%)	6 (0.4%)
IL	Argonne National Laboratory	23	1 (4.3%)	0 (0.0%)	0 (0.0%)
IL	Fermi National Accelerator Laboratory	6	0 (0.0%)	0 (0.0%)	0 (0.0%)
KY	Paducah GDP (Construction Workers)	273	0 (0.0%)	2 (0.7%)	0 (0.0%)
KY	Paducah GDP (Production Workers)	1,210	7 (0.6%)	5 (0.4%)	8 (0.7%)
MO	Kansas City Plant (Construction Workers)	141	2 (1.4%)	1 (0.7%)	0 (0.0%)
MO	Kansas City Plant (Production Workers)	343	0 (0.0%)	2 (0.6%)	1 (0.3%)
NM	Los Alamos National Laboratory	394	5 (1.3%)	0 (0.0%)	0 (0.0%)
NM	Sandia National Laboratories, NM	34	1 (2.9%)	0 (0.0%)	1 (2.9%)
NV	Nevada National Security Site	1,079	7 (0.6%)	6 (0.6%)	1 (0.1%)
NY	Brookhaven National Laboratory (Construction Workers)	171	4 (2.3%)	2 (1.2%)	1 (0.6%)

<sup>27</sup> May include individuals who did not receive a BeLPT at the time of their initial screening or who had a normal result on their initial screening and a single abnormal result on the re-screening.

<sup>28</sup> May include individuals who did not receive a BeLPT at the time of their initial screening, had a normal result on the initial screening, or had a single abnormal or borderline result on their initial screening that was confirmed on their re-screening.

OH	Feed Materials Production Center (Construction Workers)	553	4 (0.7%)	0 (0.0%)	0 (0.0%)
OH	Feed Materials Production Center (Production Workers)	360	0 (0.0%)	5 (1.4%)	1 (0.3%)
OH	Mound Plant (Construction Workers)	87	0 (0.0%)	0 (0.0%)	0 (0.0%)
OH	Mound Plant (Production Workers)	529	1 (0.2%)	9 (1.7%)	3 (0.6%)
OH	Portsmouth GDP (Construction Workers)	334	1 (0.3%)	0 (0.0%)	0 (0.0%)
OH	Portsmouth GDP (Production Workers)	1,498	4 (0.3%)	7 (0.5%)	5 (0.3%)
SC	Savannah River Site (Construction Workers)	966	11 (1.1%)	3 (0.3%)	2 (0.2%)
SC	Savannah River Site (Production Workers)	26	0 (0.0%)	0 (0.0%)	0 (0.0%)
TN	K-25 (Production Workers)	1,395	14 (1.0%)	13 (0.9%)	7 (0.5%)
TN	ORNL (Production Workers)	598	4 (0.7%)	17 (2.8%)	5 (0.8%)
TN	Oak Ridge Reservation <sup>29</sup> (Construction Workers)	904	6 (0.7%)	6 (0.7%)	3 (0.3%)
TN	Y-12 (Production Workers)	1,056	8 (0.8%)	28 (2.7%)	8 (0.8%)
TX	Pantex Plant <sup>30</sup>	186	2 (1.1%)	3 (1.6%)	0 (0.0%)
WA	Hanford Site (Construction Workers)	716	5 (0.7%)	3 (0.4%)	0 (0.0%)
WA	Hanford Site (Production Workers)	491	5 (1.0%)	0 (0.0%)	2 (0.4%)
	Other Sites <sup>31</sup> (Construction Workers)	162	2 (1.2%)	1 (0.6%)	1 (0.6%)
	Other Sites <sup>32</sup> (Production Workers)	4	0 (0.0%)	0 (0.0%)	0 (0.0%)
<b>Grand Total</b>		<b>17,706</b>	<b>117 (0.7%)</b>	<b>131 (0.7%)</b>	<b>57 (0.3%)</b>

Table 15 illustrates audiometry (hearing test) findings on initial exams to date.

29 Includes K-25, ORNL, and Y-12.

30 The site-specific project does not offer confirmatory tests for participants with an abnormal test. Those workers are referred to the Energy Employees Occupational Illness Compensation Program for further testing. However, workers referred to the NNSP for exams are provided confirmatory tests.

31 Sites where the number of individuals screened by BTMed to date is less than 100.

32 Sites where the number of individuals screened by the NNSP to date is less than 100.

**Table 15. Audiometry Findings on Initial Screening  
(through September 2013)**

State	Sites	Workers Screened	Noise Induced Hearing Loss (NIHL)
AK	Amchitka Island Test Site	1,082	718 (66.4%)
CA	Lawrence Berkeley National Laboratory	263	106 (40.3%)
CA	Lawrence Livermore National Laboratory	881	383 (43.5%)
CA	Sandia National Laboratories, CA	98	47 (48.0%)
CO	Rocky Flats Plant (Construction Workers)	600	390 (65.0%)
CO	Rocky Flats Plant (Production Workers)	3,155	1,925 (61.0%)
FL	Pinellas (Production Workers)	581	222 (38.2%)
IA	Ames Laboratory <sup>33</sup>	138	41 (29.7%)
IA	Iowa Army Ammunition Plant <sup>34</sup>	102	85 (83.3%)
ID	Idaho National Laboratory (Construction Workers)	800	511 (63.9%)
ID	Idaho National Laboratory (Production Workers)	4,349	2,358 (54.2%)
IL	Argonne National Laboratory	504	193 (38.3%)
IL	Fermi National Accelerator Laboratory	112	51 (45.5%)
KY	Paducah GDP (Construction Workers)	785	607 (77.3%)
KY	Paducah GDP (Production Workers)	3,295	1,857 (56.4%)
MO	Kansas City Plant (Construction Workers)	555	325 (58.6%)
MO	Kansas City Plant (Production Workers)	2,269	1,075 (47.4%)
NM	Los Alamos National Laboratory	2,410	1,435 (59.5%)
NM	Sandia National Laboratories, NM	301	171 (56.8%)
NV	Nevada National Security Site	3,933	3,060 (77.8%)
NY	Brookhaven National Laboratory (Construction Workers)	496	318 (64.1%)
NY	Brookhaven National Laboratory (Production Workers)	401	235 (58.6%)
OH	Feed Materials Production Center (Construction Workers)	1,704	849 (49.8%)
OH	Feed Materials Production Center (Production Workers)	1,195	411 (34.4%)

33 The site-specific project does not offer audiograms. However, workers referred to the NSSP are provided audiograms.

34 The site-specific project does not offer audiograms. However, workers referred to the NSSP are provided audiograms.

OH	Mound Plant (Construction Workers)	285	184 (64.6%)
OH	Mound Plant (Production Workers)	1,456	752 (51.6%)
OH	Portsmouth GDP (Construction Workers)	1,010	727 (72.0%)
OH	Portsmouth GDP (Production Workers)	3,523	1,832 (52.0%)
SC	Savannah River Site (Construction Workers)	3,745	2,202 (58.8%)
SC	Savannah River Site (Production Workers)	2,483	1,574 (63.4%)
TN	K-25 (Production Workers)	4,060	2,712 (66.8%)
TN	ORNL (Production Workers)	1,849	1,196 (64.7%)
TN	Oak Ridge Reservation <sup>35</sup> (Construction Workers)	2,554	1,835 (71.8%)
TN	Y-12 (Production Workers)	3,799	2,640 (69.5%)
TX	Pantex Plant <sup>36</sup>	43	15 (34.9%)
WA	Hanford Site (Construction Workers)	2,026	1,411 (69.6%)
WA	Hanford Site (Production Workers)	3,565	1,751 (49.1%)
	Other Sites <sup>37</sup> (Construction Workers)	838	515 (61.5%)
	Other Sites <sup>38</sup> (Production Workers)	128	56 (43.8%)
<b>Grand Total</b>		<b>61,373</b>	<b>36,775 (59.9%)</b>

35 Includes K-25, ORNL, and Y-12.

36 The site-specific project does not offer audiograms. However, workers referred to the NSSP are provided audiograms.

37 Sites where the number of individuals screened by BTMed to date is less than 100.

38 Sites where the number of individuals screened by the NSSP to date is less than 100.

This page intentionally left blank.

## Appendix D: Resources

U.S. Department of Energy (DOE) Former Worker Medical Screening Program (FWP) Website  
<http://energy.gov/hss/information-center/worker/former-worker-medical-screening>

FWP Medical Protocol  
<http://energy.gov/hss/downloads/former-worker-program-medical-protocol>

FWP Summary of Services  
<http://energy.gov/hss/downloads/former-worker-program-summary-services>

A Basic Overview of the FWP (Brochure)  
<http://energy.gov/hss/downloads/former-worker-medical-screening-program-brochure>

Outreach Event Calendar for DOE Workers  
<http://energy.gov/hss/calendars/joint-outreach-task-group-jotg-events>

Building Trades National Medical Screening Program  
<http://www.btmed.org/default.cfm>  
1-800-866-9663

FWP for Burlington Atomic Energy Commission Plant (otherwise known as the Iowa Army Ammunition Plant) and Ames Laboratory  
<http://www.iowafwp.org>  
1-866-282-5818

Medical Exam Program for Los Alamos National Laboratory Former Workers  
<http://www.jhsph.edu/LANLFW/index.html>  
1-877-500-8615

National Supplemental Screening Program  
<http://www.ornl.gov/nssp/>  
1-866-812-6703

Pantex FWP  
1-888-378-8939

Worker Health Protection Program  
<http://www.worker-health.org/>  
1-888-241-1199  
1-877-771-7977 (for former Nevada National Security Site workers)

Medical Facilities with Experience Evaluating Chronic Beryllium Disease  
<http://energy.gov/hss/downloads/former-workers-medical-facilities-experience-evaluating-chronic-beryllium-disease>

DOE Human Subjects Protection Program

<http://humansubjects.energy.gov/>

A Basic Overview of the Energy Employees Occupational Illness Compensation Program (EEOICP)  
(Brochure)

<http://energy.gov/hss/downloads/basic-overview-energy-employees-occupational-illness-compensation-program>

U.S. Department of Labor (DOL) Division of Energy Employees Occupational Illness Compensation

<http://www.dol.gov/owcp/energy/index.htm>

DOL Resource Centers

<http://www.dol.gov/owcp/energy/regs/compliance/ResourceMeetings/ResourceCenters.htm>

National Institute for Occupational Safety and Health (NIOSH) Dose Reconstruction

<http://www.cdc.gov/niosh/ocas/ocasdose.html>

DOL Office of the Ombudsman for the EEOICP

<http://www.dol.gov/eeombd/>