

# 2014

## An Assessment of Historic Properties and Preservation Activities at the U.S. Department of Energy



In response to requirements of Executive  
Order 13287, *Preserve America*

Office of History and Heritage Resources  
Office of the Executive Secretariat  
U.S. Department of Energy  
September 2014

## Table of Contents

Introduction .....	3
Part I. Background and Overview .....	4
U.S. Department of Energy .....	4
Departmental Assets.....	4
Developing a Department-Wide Program: 2014 Update .....	6
Part II. Field Site Reports.....	12
Bonneville Power Administration .....	13
Brookhaven National Laboratory.....	14
Fermi National Accelerator Laboratory (“Fermilab”) .....	18
Idaho National Laboratory .....	20
Los Alamos Field Office .....	24
Lawrence Berkeley National Laboratory.....	30
Office of Legacy Management .....	32
Lawrence Livermore National Laboratory .....	35
Nevada National Security Site.....	38
National Renewable Energy Laboratory .....	44
Oak Ridge Reservation: ETTP.....	47
Oak Ridge: Oak Ridge National Laboratory.....	52
Oak Ridge: Y-12 .....	55
Pacific Northwest National Laboratory.....	57
Pantex Plant .....	59
Portsmouth Gaseous Diffusion Plant .....	63
Richland Operations Office, Hanford Site .....	66
Strategic Petroleum Reserve.....	69
Savannah River Site.....	71
Southwestern Power Administration.....	73



## Introduction

In March 2003, President George W. Bush signed Executive Order 13287, *Preserve America*.

The goal of the Executive Order is to enhance Federal stewardship in the areas of cultural resource management and historic preservation. The Executive Order directs Federal agencies to include cultural resource and historic preservation considerations in their day-to-day decision making and encourages Federal agencies to seek partnerships with communities, nonprofits, and other interested parties to incorporate “heritage tourism” into local economic development strategies.

This report updates the December 2004, November 2005, November 2008, and October 2011 assessments provided to the President’s Advisory Council on Historic Preservation (ACHP) and fulfills the requirements of Executive Order 13287 (Sections 3a and 3b) that agencies with real property management responsibilities describe the general conditions and management needs of their historic properties and review their regulations, management policies, and operating procedures for compliance with Sections 110 and 111 of the National Historic Preservation Act.

**Part I** of this report begins with a brief overview of the Department’s assets, followed by a summary of the progress made since the October 2011 report. This section is based upon the field site reports in **Part II**.

This report was prepared by the Department of Energy’s Office of History and Heritage Resources, with the assistance of the cultural resources offices and contacts at the Department’s field sites. Questions or comments should be directed to Terry Fehner, the Department’s Chief Historian and Federal Preservation Officer, at 301 903-5431.

## Part I. Background and Overview

### U.S. Department of Energy

The Department of Energy was activated on October 1, 1977, as the twelfth cabinet-level department. It brought together for the first time within one agency two programmatic traditions that had long coexisted within the Federal establishment:

- a loosely knit amalgamation of energy-related programs scattered throughout the Federal government dealing with various aspects of non-nuclear Federal energy policy, research and development, regulation, pricing, and conservation; and
- defense responsibilities that included the design, construction, and testing of nuclear weapons dating from the World War II Manhattan Project effort to build the atomic bomb that subsequently evolved into the Cold War nuclear weapons complex.

### Departmental Assets

From a historical and historic preservation perspective, many, though not all, of the Department's most significant assets are associated with the Manhattan Project and how it helped end World War II, the building of the

nuclear weapons that

helped win the Cold War,

and the pursuit of world-

class science and

technology, most notably

through the national

laboratories. The

Manhattan Project's role in

helping end World War II is

regarded as one of the

most important events of

the 20<sup>th</sup> century, while the

advent of nuclear weapons

ushered in the nuclear age

and determined how the

next war—the Cold War—would be fought. For its part, DOE and its predecessors' seventy years of

support for science—and Nobel prizewinning scientists—in such diverse fields as physics, genomics,

climate change, and nanotechnology has helped revolutionize the modern scientific enterprise.

A small sample of the best known historical physical assets for which the Department has stewardship responsibilities includes the B Reactor at Hanford (Manhattan Project); V-Site and Gun Site at Los Alamos (Manhattan Project); the Graphite Reactor, Beta 3 Calutron Facility, and the K-25 Gaseous Diffusion Plant Process Building at Oak Ridge (Manhattan Project); Experimental Breeder Reactor-1 (EBR-1) at the Idaho National Laboratory (Atoms for Peace); the Nevada Test Site (Cold War); and the nuclear weapons rail cars at the Pantex Plant (Cold War).



*Engine and rail cars used to transport nuclear weapons on display at the Pantex Plant near Amarillo, Texas. The exhibit, completed in 2010, features illustration and photos of the train in action and of the loading process.*

Some of DOE's historical physical assets are open to the public on an intermittent or controlled basis. These assets include the B Reactor at Hanford, EBR-I at the Idaho National Laboratory, the Graphite Reactor at the Oak Ridge National Laboratory, and the weapons effects areas at the Nevada Test Site

As the Federal Government's fourth largest landowner, DOE owns and is responsible for lands that contain prehistoric archeological sites. The Department's Los Alamos National Laboratory, for example, contains close to 1900 known archaeological sites, many of them Ancestral Pueblo resources rivaling or even exceeding those of adjacent Bandelier National Monument—a well-known park—in terms of quality or uniqueness. Other examples include the Savannah River Site archeological sites and the Nevada Test Site and Bonneville Power Administration petroglyphs.

The Department also is responsible for historic assets that predate Federal ownership of a site. Oak Ridge, for example, maintains several church buildings and cemeteries left in place when the Manhattan Engineer District took over the site during World War II. Hanford has the remains of a high school, an agricultural warehouse, and a bank building. The Nevada Test Site has cabins, corrals, and mine sites, and remnants of homesteads, stage stations, and historic trails dot the Idaho National Laboratory landscape.

Among the Department's most significant textual assets are documents, photographs, and oral histories. Notable examples are the Atomic Energy Commission (AEC) Secretariat records, headquarters and field photograph collections, and special collections like the Nuclear Testing Archive co-located with the Atomic Testing Museum in Las Vegas, Nevada. DOE owns oral histories associated with some of the most renowned figures in recent American history, including Enrico Fermi, Edward Teller, and J. Robert Oppenheimer. In addition to oral histories that capture the words and deeds of well-known scientists, the Department's knowledge preservation efforts have documented important aspects of the decades-long, multi-billion-dollar investment in science, engineering, and process-knowledge through interviews with current and former employees.

The Department of Energy also is associated with five major museums located at or near DOE field sites: the American Museum of Science and Energy, Oak Ridge, Tennessee; the National Museum of Nuclear Science and History (formerly the National Atomic Museum), Albuquerque, New Mexico; Bradbury Science Museum, Los Alamos, New Mexico; the newly opened Hanford Reach Interpretive Center, Richland, Washington; and the National Atomic Testing Museum, Las Vegas, Nevada. Each museum is idiosyncratic, arising from particular local needs and with varying funding and management relationships with the Department. Some sites have exhibits at local museums. Idaho National Laboratory, for example, supports a major permanent exhibit in the Museum of Idaho in Idaho Falls.

Many DOE field sites also maintain visitor centers. Their primary focus is presenting the science and technology related to a particular DOE national laboratory or facility. Departmental visitor centers include the Science Learning Center at Brookhaven National Laboratory, the Lawrence Livermore National Laboratory Discovery Center, the Leon Lederman Science Education Center at Fermi National Accelerator Laboratory (Fermilab), the National Renewable Energy Laboratory Visitors Center, and the SLAC National Accelerator Laboratory Visitor Center.

Two DOE visitor centers are located at former weapons complex sites that were closed, went through remedial action and environmental restoration, and opened to the public. At the Office of

Legacy Management's Weldon Springs, Missouri, and Fernald, Ohio, sites, the visitor centers document the history of the site and facility, clean-up efforts, and ongoing maintenance and surveillance. Both sites maintain nature preserves with trails for hiking, biking, and bird watching. The Office of Legacy Management is considering visitor or interpretive centers at additional sites. The initiatives include construction of a new interpretive center at the Weldon Spring site and potentially establishing visitors centers at the Mound, Ohio, site; Rocky Flats, Colorado, site; and at the Grand Junction, Colorado, site, where a Legacy Management office is located. Although the Grand Junction Office site is now owned by a local development corporation, DOE continues to lease part of the site. In 1998, the Colorado SHPO recommended Historic District designation for the Grand Junction site and eligibility for nomination to the NRHP. The proposed Grand Junction site visitor's center would be unique because it would be housed in an historic cabin on the site that was used by the Manhattan Project.

The Department opened a headquarters visitor center in the lobby of the Forrestal Building at a ceremony marking DOE's 30<sup>th</sup> anniversary in October 2007. The headquarters visitor center includes a Manhattan Project exhibit and a timeline documenting DOE's history.

Finally, DOE offices and sites provide a wide variety of history pages, online tours, and virtual museums on their websites. The Office of History and Heritage Resources oversees the History pages on the Department's Energy.gov website at <http://www.energy.gov/management/office-management/operational-management/history>. The site

provides a listing of field history pages at <http://www.energy.gov/management/history/historical-resources/labs-and-field-site-histories>.



*The DOE Historian gives a tour of the Manhattan Project exhibit at the headquarters visitor center in the lobby of the Forrestal building. The photo is taken through the original door of Ernest Lawrence's Radiation Laboratory on loan from the Lawrence Berkeley National Laboratory. Former Secretaries of Energy James Schlesinger and Samuel Bodman are on the left.*

## Developing a Department-Wide Program: 2014 Update

Descended for the most part from the Manhattan Engineer District, with its use of contractors and strict compartmentalization, and/or the AEC, with its policy of decentralization that devolved substantial power and authority to field offices, DOE field sites developed their own unique and individual Cultural Resources/Historic Preservation programs. Compliance activities associated with the National Historic Preservation Act (NHPA) and other relevant laws have been performed primarily by contractors under the direction of DOE field officials. The history of the development of a Department-wide program up to October 2011 can be found in previous Executive Order reports.

In the last three years, the Department's program to manage its history and heritage resources has made significant advances, both at headquarters and in the field, with greater resources being applied to historic preservation than ever before. The upgrade and advancement of the program continues to bring greater visibility, enhanced recognition of the importance of the Department's historic assets, and genuine progress toward preservation and interpretation. Highlights for the past three years include:

- Field sites have moved forward with inventories and, where applicable, toward completion of Cultural Resource Management Plans (CRMPs).
- The Office of History and Heritage Resources (OHHR) continued to partner with the President's Advisory Council on Historic Preservation in identifying ways in which DOE's historical assets could contribute to local economic development strategies.
- OHHR continued to partner with the National Park Service in implementing the Manhattan Project National Historical Park Study Act (S. 1687, P.L. 108-340). The joint National Park Service/DOE study team looked at whether the historic properties at the Department's three major Manhattan Project sites—Oak Ridge, Hanford, and Los Alamos—should be made part of the National Park Service. In November 2009, a draft of the study (actually an environmental assessment) was released to the public. In July 2011, the Secretary of the Interior, with DOE concurrence, in a letter to Congress recommended the establishment of a three-site Manhattan Project National Historical Park. The Secretary recommended that the park be managed as a partnership between the National Park Service and the Department of Energy. Senior management of DOE has testified before House and Senate committees in favor of establishing the park. As of September 2014, legislation to establish the park is being actively considered by Congress.
- OHHR continued efforts to implement the Executive Order, especially in identifying potential heritage tourism opportunities across the DOE complex.
- OHHR and the Department's Office of Classification, in collaboration with DOE's Office of Science and Technical Information, made available full-text online the entire thirty-six volume *Manhattan District History* commissioned by General Leslie Groves, head of the Manhattan Engineer District. The classified history was "intended to describe, in simple terms, easily understood by the average reader, just what the Manhattan District did, and how, when, and where." The volumes record the Manhattan Project's activities and achievements in research, design, construction, operation, and administration, assembling a vast amount of information in a systematic, readily available form. The *Manhattan District History* contains extensive annotations, statistical tables, charts, engineering drawings, maps, and photographs. Only a handful of copies of the history were prepared. Most of the volumes were classified, and these were declassified, many with redactions, i.e., still classified terms, phrases, sentences, and paragraphs were removed and the remaining unclassified parts made available to the public. The *Manhattan District History* is at [https://www.osti.gov/opennet/manhattan\\_district.jsp](https://www.osti.gov/opennet/manhattan_district.jsp).
- OHHR, in collaboration with the Department's Office of Classification and Office of Science and Technical Information, launched *The Manhattan Project: An Interactive History*, a website history to provide an informative, easy to read and navigate, comprehensive overview of the Manhattan Project. Five main topical areas—Events, People, Places, Processes, and Science—are further divided into sub-sections, each with an introductory page

and as many as a dozen or more sub-pages. The site is interactive in the sense that it is designed with the flexibility to meet the needs of a variety of users. When completed, *The Manhattan Project* will total some 120,000 words and over 250 pages and 500 images. The site is being implemented incrementally, with the Events and Resources sections the first parts to go online. The remaining sections are scheduled to go online over the next several years. *The Manhattan Project* is at <https://www.osti.gov/manhattan-project-history/index.htm>.

- The Portsmouth/Paducah Project Office, in January 2012, launched the Portsmouth Gaseous Diffusion Plant Virtual Museum at <http://www.portsvirtualmuseum.org/>. The Virtual Museum is an online resource on the history and operations of the Portsmouth facility and includes extensive information on the site, oral histories, and archival and recent photographs.
- Consultations on the disposition of the K-25 Gaseous Diffusion Plant Process Building at Oak Ridge culminated with the 2012 signing of a Memorandum of Agreement (MOA) between DOE, the State of Tennessee, the Advisory Council on Historic Preservation, and nine other parties to interpret and commemorate the significance of the plant and its role in the Manhattan Project. The MOA has multiple elements designed to off-set the loss of significant historical properties at the former K-25 site including the demolition of the K-25 Building in its entirety. The Department in the MOA agreed to design and construct an equipment building (to house equipment and artifacts from the K-25 Building), a viewing tower that will facilitate an understanding of the scope and scale of the original K-25 Building, and a history center that would allow visitors to view important items from the Manhattan Project era. The MOA also preserved the footprint of the K-25 Building. In addition, DOE, in accordance with the MOA, awarded a grant in August 2012 to Knox Heritage (an agent of the East Tennessee Preservation Alliance) to purchase and rehabilitate the Alexander Inn. The Alexander Inn (formerly the Guest House) was frequently visited by historically significant individuals during the Manhattan Project such as General Leslie Groves, Enrico Fermi, and Robert Oppenheimer. This was one of the compensatory measures set forth in the MOA. The Alexander Inn was to be purchased with part of the grant funds and improved to meet current building codes. All modifications to the property had to be made consistent with Department of Interior standards for historical properties. The sale was completed in early 2013 and the building has been brought up to code, thereby fulfilling the MOA commitment. Currently, a private company is completing the restoration of the Alexander Inn.
- The Y-12 facility at Oak Ridge completed major renovations to the Y-12 History Center housed in the Y-12 New Hope Visitor Center. The scope of the project included the addition of a reception area, a history library, and a video viewing area for visitors to increase their knowledge and appreciation for the contributions Y-12 made regarding the Manhattan Project, the Cold War, and current missions. The Y-12 site also produced an award winning documentary on the history of Y-12 entitled *The Nuclear Family*. A DVD containing the documentary is given out to visitors at no cost when they tour the History Center.
- The Savannah River Site (SRS), in July of 2012, opened a new curation facility. This 27,000 square-foot facility is a repurposed warehouse/training building that now houses artifacts from both SRS Cold War Era structures and SRS archaeological sites. In addition, DOE's long-standing cooperative agreement for managing cultural resources at the Savannah River Site

with the South Carolina Institute of Archaeology and Anthropology includes a public outreach component designed to identify and provide an interpretive context to cultural sites and artifacts. In this capacity, the program produced a documentary DVD based on pottery unearthed at the Savannah River Site. *Discovering Dave: Spirit Captured in Clay*, focuses on an enslaved bondsman named Dave from the Edgefield District of South Carolina. In the early and mid-1800's Edgefield was a major production center for stoneware. During his long life it is estimated that Dave created over one hundred thousand pots, but to date only about 170 are marked with his name, date, verse, inscription, or poem. One of the major points of the film is Dave's openness to write on the wares he created during a time when slaves were not supposed to be taught to read or write. The film also discusses the artifact's discovery and its use as an aid to discuss the importance of archaeology, history, and relating Dave's story for public education. This award winning DVD has been featured in recent regional, national, and international film festivals and has also been made available for educational use.

- The Richland Operations Office at the Hanford Site created a preservation and public tour program for the B Reactor National Historic Landmark in 2009. The program has grown over the years to now service about 10,000 visitors each year. DOE has lowered the age limit at B Reactor from 18 to 12 in order to enable more families to tour the facility together and in order to be able to work with middle schools to offer visits to the reactor. Annual maintenance and improvement activities at the B Reactor are coordinated with the State Historic Preservation Office and the National Park Service. The Tri Cities Visitor and Convention Bureau estimates that B Reactor's 10,000 visitors likely bring between \$1.5 and \$2 million to the local economy each year in heritage tourism revenue.

- The Richland Operations Office, the B Reactor Museum Association, and the Hanford History Partnership, along with other local sponsors, on September 26, 2014, hosted a 70th Anniversary celebration of the initial criticality of the B Reactor. Held at the B Reactor, the event offered local food and drink, music and other entertainment, and tours of the reactor. An evening multi-media program

consisted of Manhattan Project images projected on the outer wall of the reactor building, tributes, reminiscences, and remarks by DOE Deputy Under Secretary for Management and Performance David Klaus.



*At the B Reactor 70<sup>th</sup> Anniversary celebration, Colleen French of the Richland Operations Office presents Deputy Under Secretary for Management and Performance David Klaus, who was involved in the early efforts to have the reactor recognized as a national landmark, with an award for his significant contributions toward the preservation of the Manhattan Project legacy at Hanford and across the DOE complex.*

- The Hanford Reach Interpretive Center in Richland, Washington, opened on July 4, 2014. The Reach tells the stories of the Hanford Reach National Monument, the community and surrounding area, and the technological and historical achievements of the Hanford Site. Gallery 2 of the two major galleries focuses on the Manhattan Project and Hanford. The previous DOE-supported museum in the area, the Columbia River Exhibition of History, Science, and Technology, closed in January 2014 and was merged into the new museum. Hanford site contractors donated \$1 million to support The Reach.
- The Los Alamos National Laboratory (LANL) routinely gives presentations that focus on cultural resource compliance, awareness, historic properties, and historic preservation activities at the lab. Small-scale tours of historic properties (including archaeological sites and historic buildings) are given to a variety of public, professional, and government groups. In 2014, members of the National Conference of State Historic Preservation Officers (NCSHPOs) and the Federal Facilities Task Force toured various cultural resource sites at LANL. Media requests were also supported during this time; notable highlights include visits by national news outlets, such as CBS, Fox News, and National Public Radio, and national television shows, such as Jeopardy. High profile visitors have included the Associated Press Board of Directors and Bill Gates. LANL also completed a major restoration project involving a significant Manhattan Project facility—the Gun Site—in 2012. Phase 2 of the Gun Site Restoration Project included major repairs to the facility's damaged concrete exterior in addition to site work and exterior changes with the goal of returning the bunkered buildings to their World War II appearance.
- At the Idaho National Laboratory (INL), approximately 10 percent of site rangelands have been inventoried through all efforts, and 2,755 prehistoric and historic archaeological resources have been identified, including 1,400 resources evaluated as potentially eligible for nomination to the NRHP. INL's unique "data management system" integrates geographic information system (GIS) data sets, relational databases, and web-based server technologies to easily access, update, analyze, and manage this inventory. Inventories of cultural resources related to the history of the INL site and its important roles during WW II, the post-War period, and in the pioneering history and development of nuclear power since 1949 have also been initiated. As of 2014, nearly 300 historic architectural properties associated with these contexts and eligible for nomination to the NRHP have been identified. This total includes twelve properties that are nationally important and/or potentially valuable for heritage tourism. Among the notable finds from the World War II period are unique test apparatus appearing as "igloos" made of concrete and wire mesh and associated with testing to establish safe storage and transportation standards for conventional ordnance and wreckage from a B-24 Liberator bomber on an ill-fated test run over one of two bombing ranges established at the time.
- The Nevada National Security Site (NNSS) has documented more than 2,500 prehistoric and historic archaeological sites and almost 500 buildings, structures, and objects associated with the historic nuclear testing and research programs. Heritage tourism at the site consists of monthly public tours to historic nuclear testing locations within this restricted access facility. Displays in the National Atomic Testing Museum in Las Vegas present information related to these historic resources. In 2011, the NNSN completed a stabilization plan for the two remaining two-story houses that were part of the 1955 Apple-2 atmospheric nuclear tower test. For this civil effects test, a typical American community was built. The two

houses contained mannequins in different types of clothes, furniture, and food. In 2012-2013, the foundation of one of the structures was stabilized to prevent the collapse of its interior. The film footage of a similar two-story wood building blowing apart from a nuclear blast is well known throughout the world, making these Apple-2 houses a highpoint of the public tours.

- At the National Renewable Energy Laboratory, DOE in 2011 entered into a Memorandum of Agreement (MOA) with the Colorado SHPO to mitigate impacts that a new south access road to the South Table Mountain campus would have on two offsite former rifle range firing lines associated with Camp George West Historic District. The proposed project would remove approximately 50 feet of the western extent of the southernmost firing line. In lieu of recordation, DOE agreed to design and construct an interpretative display to document this contributing resource that would be readily accessible to the general public, enrich the value of Pleasant View Park at Camp George West, and provide a linkage to the military heritage of the site. This interpretative feature was completed in June 2013. The Colorado SHPO acknowledged in February 2014 that DOE had completed its obligations per the MOA and stated: "The quality and content of the interpretative panel is commendable, and we hope that this feature enhances the visitor experience to the Camp George West Historic District."

## Part II. Field Site Reports

## Bonneville Power Administration

The built resources of the BPA's transmission system have played a role in many significant patterns in history of the United States and the Northwest (e.g., public power, rural electrification, military/defense work, engineering design etc.); the system is associated with the lives of persons significant in our past (e.g., Franklin Roosevelt as the architect of public power, John Ross as the first BPA Administrator); and the built resources can embody distinctive characteristics or important technologies (e.g., BPA's use of streamline moderne architecture during the Master Grid development, "Beautility" during system expansion and the many technological design improvements the Administration had developed, such as the HVDC Intertie).

To address the complexities and streamline compliance while preserving important historic resources, BPA initiated a phased program for historic resource management of BPA's transmission system built resources. The program evaluates the built resources (transmission lines, substations, control centers, and other stations such as compensation, testing, converter, and microwave/radio) at a programmatic level, identifying the general historic context and characteristics that make the elements eligible (or not eligible) for the National Register. Documentation occurring in the format of Multiple Property Documentation Form (MPD) was completed and approved by the National Park Service in 2012.

As a management tool, the thematic approach of the MPD furnishes essential information for historic preservation planning programmatically because it evaluates properties on a comparative basis within a given geographical area and because it can be used to establish preservation priorities based on historical significance.

A manual of best practices is currently being developed for repair, maintenance and modification techniques that are accepted and agreed on with the regulating entities for each property type, allowing agreement up front for these efforts, rather than requiring consultation individually. An overarching programmatic agreement for compliance entered into by BPA and the regulatory agencies documents and is the end goal and will confirm the streamlined approach.

# Brookhaven National Laboratory

## Introduction

Brookhaven National Laboratory sits on the site of the former World War I and World War II Camp Upton. In WW I, the War Department established Camp Upton as one of 16 cantonments for training the American Expeditionary Force to be deployed to Europe. Camp Upton was home to the 77<sup>th</sup> "Liberty" Division of "The Lost Battalion" fame. The BNL site still contains numerous WWI training trenches that have been determined eligible for listing on the National Register. Between the wars Camp Upton became the Upton National Forest and the Civilian Conservation Corps planted thousands of trees to recover the land used for military training. In World War II, Camp Upton was re-established as an Induction Center and toward the end of the war it was converted into a Recovery and Recreation Center for returning troops. In 1946, scientists that worked on the Manhattan Project began petitioning for a National Laboratory for the peaceful research on the atom. On August 1, 1947 Brookhaven National Laboratory was established. Over the years BNL has become a multi-dimensional research laboratory with research in high energy physics, medicine, chemistry, biology, imaging, and energy.

Key facilities of historic importance include the Brookhaven Graphite Research Reactor and High Flux Beam Reactor, both of which have been determined to be eligible for listing on the National Register and have been designated as National Nuclear Landmarks. One other reactor, the Brookhaven Medical Research Reactor, was involved in research looking into the use of radiation for medical purposes. Other facilities included the Cosmotron (no longer in existence), the first accelerator to achieve one billion electron volts, the Alternating Gradient Synchrotron, the National Synchrotron Light Source I & II, the Relativistic Heavy Ion Collider, the National Space Radiation Laboratory, and the Center for Functional Nanomaterials. This diverse set of facilities has been part of many significant discoveries including those related to 7 Nobel Prizes.

## Progress Review 2011 -2014

BNL's Cultural Resources Management Plan (CRMP) is on a 5-year review cycle and was last updated in 2013. The update incorporated progress over the previous 5 years. The CRMP was submitted to the New York State Office of Parks and Recreation & Historic Preservation for review and no comments were received.

The Cultural Resources program has worked with the Long Island Museum of American Art, History and Carriages on two separate displays in which BNL historical items were loaned and incorporated. In 2011-2012, the Long Island Museum put together an exhibit titled "Long Island – America's 1950s Frontier" and borrowed items from the early days of BNL's existence including a scale model of the Brookhaven Graphite Research Reactor and the "Atoms for Peace" mural that normally hangs in the Building 703 staircase.

In 2012, BNL recorded its first lithic isolate providing support for the presence of Native Americans in the vicinity of BNL. The item was transferred to the Institute for Long Island Archaeology at Stony Brook.

In 2014, the Museum borrowed several items from the “Camp Upton Collection” for their exhibit title “Long Island at War.” This exhibit covers the long history of Long Island’s involvement in war from the American Revolution to more recent conflicts in Iraq and Afghanistan. Items loaned included representative period music by Irving Berlin while stationed at Camp Upton (God Bless America and Oh, How I hate to get up in the Morning); WW I Liberty Division helmet; trenching tool, gas mask, Camp Upton Sign, and various other items.

As part of cultural outreach efforts the cultural resources staff periodically provide “talks” about BNL Cultural Resources and the history of the BNL site. These talks have included “The Natural History of the BNL Site” that was presented at the first annual Long Island Natural History Conference in 2012 and focused on the changes in the landscape of the BNL site since the 1700’s. A similar talk titled “The History of the BNL Site” looks more at the cultural landscape and changes to land use of the site within the context of the five historic periods of the BNL site. BNL also supported the development of stories by local newspapers including a story published in the Times Beacon Records on July 24, 2014 titled “Long Island: center of nation’s reluctant war effort,” that focused on the U.S.’s entry into WWI. Finally, as part of BNL’s Summer Sundays program, the Camp Upton displays in Berkner Hall are routinely updated.

## **Future Efforts**

In preparation for the 100<sup>th</sup> anniversary of America entering into WW I, in 2017, cultural resource staff will be working with a local volunteer and the Brookhaven Veterans Association on displays and outreach related to Camp Upton using the Camp Upton Collection. The lab will also support requests from local media and groups supporting information concerning Camp Upton’s involvement in the “War to end all wars.” Cultural resources staff will also be working with BNL’s Community, Education, Government, and Public Affairs directorate to plan for the celebration of BNL’s 70<sup>th</sup> Anniversary, also in 2017.

BNL continues to implement portions of its CRMP and intends to begin cataloguing and tagging historic items found throughout the laboratory.



Atoms for Peace mural that was loaned to the Long Island Museum for their "Long Island, America's 1950s Frontier" exhibit.



Camp Upton Collection, BNL loaned materials (trenching tool, Liberty Division helmet, gas mask, mess kit, bayonet, and field dress kit), displayed at "Long Island at War" exhibit, Long Island History Museum.



Foot locker of Lt. F.J. Baumert from the Camp Upton Collection, BNL on display at the "Long Island at War" exhibit, Long Island History Museum.



Music and bugle from the Camp Upton Collection, BNL on display at the "Long Island at War" exhibit Long Island History Museum.

# Fermi National Accelerator Laboratory ("Fermilab")

## Introduction

Fermilab is located approximately 37 miles west of Chicago, IL on 6,800 acres that straddle Kane and DuPage counties. These ten square miles were donated by the State of Illinois to the Atomic Energy Commission in 1967 to be the home of the National Accelerator Laboratory. When purchased, the site consisted of 77 farmsteads, a Pioneer Cemetery, and the subdivision of Weston. The first proton beam was produced in April 1969, and in 1972 the laboratory was renamed Fermi National Accelerator Laboratory in honor of Enrico Fermi. Today the laboratory consists of a series of large particle accelerators devoted to the Department of Energy, Office of Science's High Energy Physics program. Physicists utilize accelerators and their associated detectors to study the most fundamental particles and forces of nature.

Fermilab employs approximately 1,700 people and hosts as many or more visiting scientists and students. The laboratory is organized into several programmatic areas that include research; operations; information management/computing; accelerators; technology and; environment, safety, health & quality. Employees in these areas may work in office environments, construction areas, technical shops, computing centers, etc. Because the majority of the site's 6,800 acres is natural habitat for wildlife the Roads & Grounds Department maintains the site and spearheads the efforts for land stewardship and restoration. Fermilab also has an Ecological Land Management committee that makes recommendations regarding wildlife habitat and native prairie restoration.

## Three-year Progress Overview

Phase I archaeological surveys were completed for two sites in 2011 and 2012. Each site had an open well that were independently discovered by employees working in the areas. The open wells were a hazard to potential passers-by and were properly filled. Phase II testing was recommended for both sites. Phase II archaeological testing was conducted at the Tadpole and Frog sites in 2012. Based on the Phase II testing the Illinois Historic Preservation Agency (IHPA) determined that these two sites were not historic properties.

In 2013, Fermilab contracted with Midwest Archaeological Research Services, Incorporated (MARS, Inc.). MARS, Inc. completed visual field reconnaissance of 87 historic properties and conducted Phase I archaeological surveys of 36 historic properties during the spring and summer of 2013. Reconnaissance may be thought of as a "once over lightly" inspection of an area, most useful for characterizing its resources in general and for developing a basis for deciding how to organize and orient more detailed survey efforts. Phase I investigation consists of a combination of background research and fieldwork designed to identify resources and define site boundaries within a given project area or Area of Potential Effect (APE). MARS, Inc. reviewed various reports and documents relating to the identification of Euro-American historic properties within Fermilab including historical plats and aerial photographs, census and cemetery records and county histories. The archaeologists completed visual reconnaissance at all properties and Phase I field investigations at 38 properties. Phase I fieldwork consists of a number of methods including pedestrian survey, excavation of shovel test probes, remote sensing, and deep testing of appropriate landscapes. The use of specific field methods and techniques is dependent upon the type of ground cover present, the topographic

setting, and the amount of observed disturbance in a given situation. MARS, Inc. submitted ten site correction forms, two site revisit forms and 61 new site forms.

Thirteen sites within Fermilab are on Pre-emption land patent parcels. Andrew Spear settled first in June of 1834 with his wife and five children. Other families followed in 1835 through 1842. Of the architectural resources examined at Fermilab, four appear to merit further consideration under Criterion b or Criterion c of the National Historic Preservation Act.

MARS, Inc. recommended 22 properties for Phase II testing or assessment to evaluate each site for NRHP status. The remaining 64 historic properties do not appear to be eligible for inclusion on the registry.

MARS, Inc. produced the report *Archaeological and Architectural Assessment of Historic Properties within the Fermi National Accelerator Laboratory, Batavia Township, Kane County and Winfield Township, DuPage County, IL* in November 2013. The report concludes that the Pioneer Cemetery and three other sites appear to be eligible for inclusion in the NRHP – Farm Book 29 (Fermilab Director's residence), Farm Book 58 (Samuel and Lucy Bartholomew Farmstead and most recently home to former director and Nobel laureate Leon Lederman), and Farm Book 65 barn (Sanford and Jennie Watson Farmstead).

## **Activities and Accomplishments for the Next Three Years**

Over the next three years, Fermilab will work to update the Cultural Resources Management Plan (CRMP) using the data provided by MARS, Inc. in the *Archaeological and Architectural Assessment of Historic Properties within the Fermi National Accelerator Laboratory, Batavia Township, Kane County and Winfield Township, DuPage County, IL*, and implement the plan to protect Fermilab's historic properties.

In June 2014, the IHPA concurred with the recommendations included in the MARS, Inc. report. With IHPA's concurrence, Fermilab will update the CRMP. Most importantly, the Fermilab Geographic Information System (GIS) will be updated to reflect the MARS, Inc. recommendations. The GIS provides information to engineers and others who may want to disturb land around the Fermilab site for construction or infrastructure repairs. The "archeological" layer indicates exclusion zones where excavating is either totally restricted or requires approval prior to digging. Fermilab has a robust review process for reviewing proposed excavations that ensures no historic locations or properties are disturbed without review.

Aside from the historic properties mentioned above, many of the facilities built by Fermilab are reaching the 50 year minimum threshold for potential consideration of inclusion in the National Register of Historic Places. Fermilab will pay close attention to the proposed activities for these facilities and conduct archaeological surveys when necessary. Artifacts recovered during Fermilab archaeological investigations are curated at the Illinois State Museum in Springfield, Illinois. Fermilab cultural resource records and reports are kept on file at Fermilab by the Environment, Safety, Health and Quality Section and by the Illinois Historic Preservation Agency.

## Idaho National Laboratory

**Overview.** The Idaho National Laboratory (INL) is a science-based, applied engineering facility dedicated to supporting U.S. Department of Energy missions in nuclear and energy research, science, and national defense. Under the jurisdiction of the DOE's Idaho Operations Office (DOE-ID), the 890 square mile laboratory covers portions of five counties on the northeastern edge of the Snake River Plain in southeastern Idaho (Figure 1). Operating facilities, project areas, and modern infrastructure occupy a small percentage of the land within laboratory boundaries, with many acres of undeveloped sagebrush rangelands in the surrounding area. Cultural resources are numerous at the INL Site, including many that are eligible for nomination to the National Register of Historic Places (NRHP). All are managed within the spirit and intent of federal laws and regulations, State laws, DOE Policies, and DOE-ID commitments to the State of Idaho and the Shoshone-Bannock Tribes.

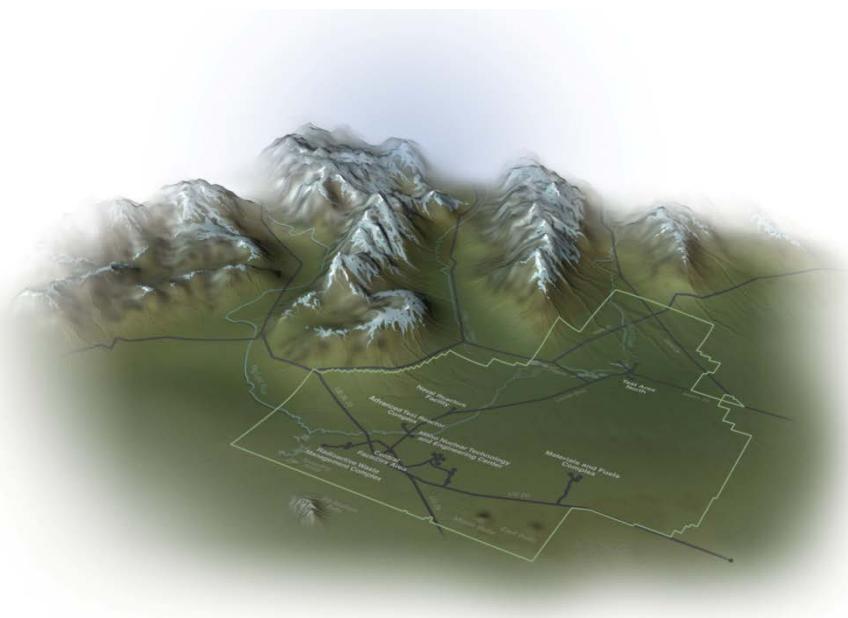


Figure 1. Idaho National Laboratory in Eastern Idaho.

The comprehensive *INL Cultural Resource Management Plan* (DOE-ID 2013) provides a tailored approach to comply with legal mandates and implements DOE cultural resource policies and goals, while meeting the unique needs of the INL. The Plan is legitimized through a 2004 Programmatic Agreement, *Concerning Management of Cultural Resources on the INL Site* (DOE-ID 2004), between DOE-ID, the Advisory Council on Historic Preservation, and the Idaho State Historic Preservation Office. DOE-ID's *Agreement in Principle* (DOE-ID 2012) with the Shoshone-Bannock Tribes is another important component of the overall approach to management of cultural resources at the INL Site.

The lands that comprise the INL Site today have been important to human populations for thousands of years. Access restrictions in place since the early 1940s have preserved a remarkable number of cultural resources reflecting this long period of use. Several unique types of cultural resources have been documented:

- Prehistoric archaeological sites representing aboriginal hunter-gatherer use over a span of at least 13,500 years, including thousands of largely undisturbed campsites and a number of sensitive lava tube caves such as Aviators Cave, which is listed on the NRHP;
- Late 19th and early 20th Century historic archaeological sites representing settlement and agricultural development, ranching, and other activities, including hundreds of homesteads, miles of canals and ditches, and several historic trails such as Goodales Cutoff, a northern spur of the Oregon Trail that is eligible for nomination to the NRHP;

- Modern resources and landscape elements that tell the history of the INL Site from its beginnings as the Arco Naval Proving Ground during World War II and the post-War period; as well as important industrial and scientific resources that reflect INL's initial establishment in 1949 as the National Reactor Testing Station and the many scientific and technological achievements that have followed, including facilities like Experimental Breeder Reactor I (EBR-I), which is recognized as a National Historic Landmark (NHL) and was the first nuclear reactor in the world to produce usable electrical power;
- Cultural and natural places, landscapes, viewsheds, select natural resources, and sacred areas or objects that have importance for Native Americans and others such as the descendants of early pioneers, members of local and regional historical societies, and INL employees.

**Progress Review.** Efforts to identify cultural resources at the INL Site have been ongoing for decades, largely driven by National Historic Preservation Act (NHPA) requirements to evaluate the potential effects of INL activities on significant cultural resources (Section 106). Under INL procedures, a cultural resource review is prompted whenever ground disturbance or major structural or landscape modifications are proposed. Over the past three decades, approximately 35 INL projects per year have been reviewed for potential impacts to archaeological resources and historic architectural properties. This includes over 100 project reviews in the 2012 - 2014 time frame for a variety of INL activities such as new construction (roads, facilities, utilities), environmental cleanup, small research developments and field tests, monitoring wells, facility deactivation and demolition, equipment removal, roof repairs, security and utility upgrades, and general maintenance. Effective management of INL cultural resources and successful overall land use planning is also predicated on a much broader understanding of cultural resources at the INL Site, so some survey efforts over the years have been directed to the broader landscape and the many resources located in areas that are not necessarily subject to potential project impacts (Section 110). In addition to prehistoric, historic, and industrial archaeological sites, features, and artifacts, and historic structures, attention has also been devoted to understanding resources and landscape elements that continue to be of importance to the Shoshone-Bannock Tribes.

As of 2014, approximately 10 % of INL Site rangelands have been inventoried through all efforts and 2,755 prehistoric and historic archaeological resources have been identified, including 1,400 resources evaluated as potentially eligible for nomination to the NRHP. A simple predictive model developed to facilitate long term land use planning indicates that thousands of additional archaeological resources are present in unsurveyed areas. INL's unique "data management system" integrates geographic information system (GIS) data sets, relational databases, and web-based server technologies to easily access, update, analyze, and manage this inventory. Nearly 100 % of identified resources and approximately 75 % of cumulative survey areas are currently mapped in this system and work is ongoing to incorporate remaining legacy data and new functionality. The Shoshone-Bannock Tribes consider many of the archaeological resources identified on INL lands to be an integral part of their ancestry and other natural features also retain cultural importance. Regular meetings and interactions between DOE-ID, INL cultural resource personnel, and tribal representatives ensure that the Tribes maintain an active role in INL cultural resource management.

Inventories of cultural resources related to the history of the INL site and its important roles during WW II, the post-War period, and in the pioneering history and development of nuclear power since 1949 have also been initiated. Over the years, 52 nuclear reactors were built at the INL Site to demonstrate various reactor concepts, and to test materials for commercial and military reactors. Since INL has been an active scientific research facility for its entire history, many of these early properties have been demolished or modified to accommodate new experiments. However, as of 2014, nearly 300 historic architectural properties associated with these contexts and eligible for nomination to the NRHP have been identified. This total includes 12 of DOE's "Signature

Properties," which are nationally important and/or potentially valuable for heritage tourism in the DOE Complex. The 2012-2014 time frame included a proposal to restart historic facilities and initial efforts to document the landscape (buildings, structures, features, artifacts) associated with World War II activities at what is now the INL Site. Holdings in INL's Archive Center also expanded in the period, with ongoing cataloging of important World War II and Nuclear Era documents, photographs, and other media.

NHPA Section 106 and Section 110 goals are also furthered by careful investigation, analysis, and documentation of select INL cultural resources. In the past, this has resulted in the nomination of EBR-I to the NRHP and recognition as a NHL (Figure 2). Today, EBR-I remains open to the public as a visitors center, filling an important role in heritage tourism for DOE-ID with thousands of visitors every year. In recognition of INL's rich technological heritage and to mitigate removal of many physical structures and buildings through deactivation and demolition,

Historic American Building Survey/Historic American Engineering Record (HABS/HAER) reports have also been prepared for ten facilities, including the Army Reactor Area, Test Reactor Area, Advanced Reentry Vehicle Facility Site, Power Burst Facility, Aircraft Nuclear Propulsion Program Facility, Fuel Reprocessing Facilities, Waste Calcining Plant, Experimental Breeder Reactor II, Test Area North, and the Special Excursion Power Reactor. In the 2012 - 2014 timeframe, a number of interesting cultural resources associated with the World War II Arco Naval Proving Ground and the post-War period have been identified as part of a broader investigation of the cultural landscape associated with this period (1942 - 1949). Among the notable finds to date are unique test apparatus appearing as "igloos" made of concrete and wire mesh and associated with testing to establish safe storage and transportation standards for conventional ordnance and wreckage from a B-24 Liberator bomber on an ill-fated test run over one of two bombing ranges established at the time.

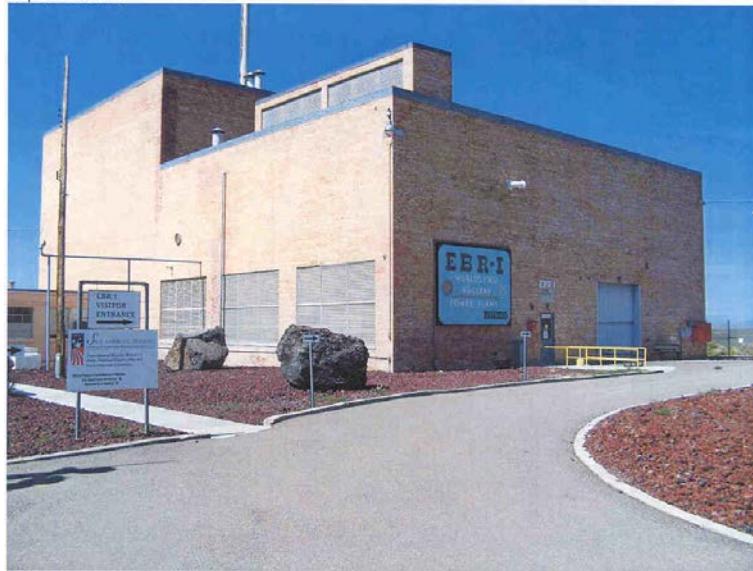


Figure 2. EBR-I Visitors Center.

Detailed evaluations of INL archaeological resources have involved archaeological excavations designed to determine the nature and extent of subsurface cultural deposits as well as detailed analyses of archaeological collections. In the past, this kind of work has supported a successful NRHP nomination for Aviators Cave. In the 2012 - 2014 timeframe, new analyses of perishable artifacts from the Cave have provided additional documentation of its archaeological significance and importance to the Shoshone-Bannock Tribes. Archaeological investigations of deeply stratified cultural deposits at the Pioneer Site, located on the banks of the Big Lost River, have also helped to refine the baseline cultural chronology for prehistoric occupation of the INL and surrounding region over a span of more than 6,000 years (Figure 3). Smaller scale test excavations at eight additional prehistoric sites have also been conducted over the past three years to ensure that INL project activities would result in no adverse effects to NRHP eligible properties, to further understanding of prehistoric use of the area, and to refine techniques for assessing the information potential and NRHP status of small lithic scatters.

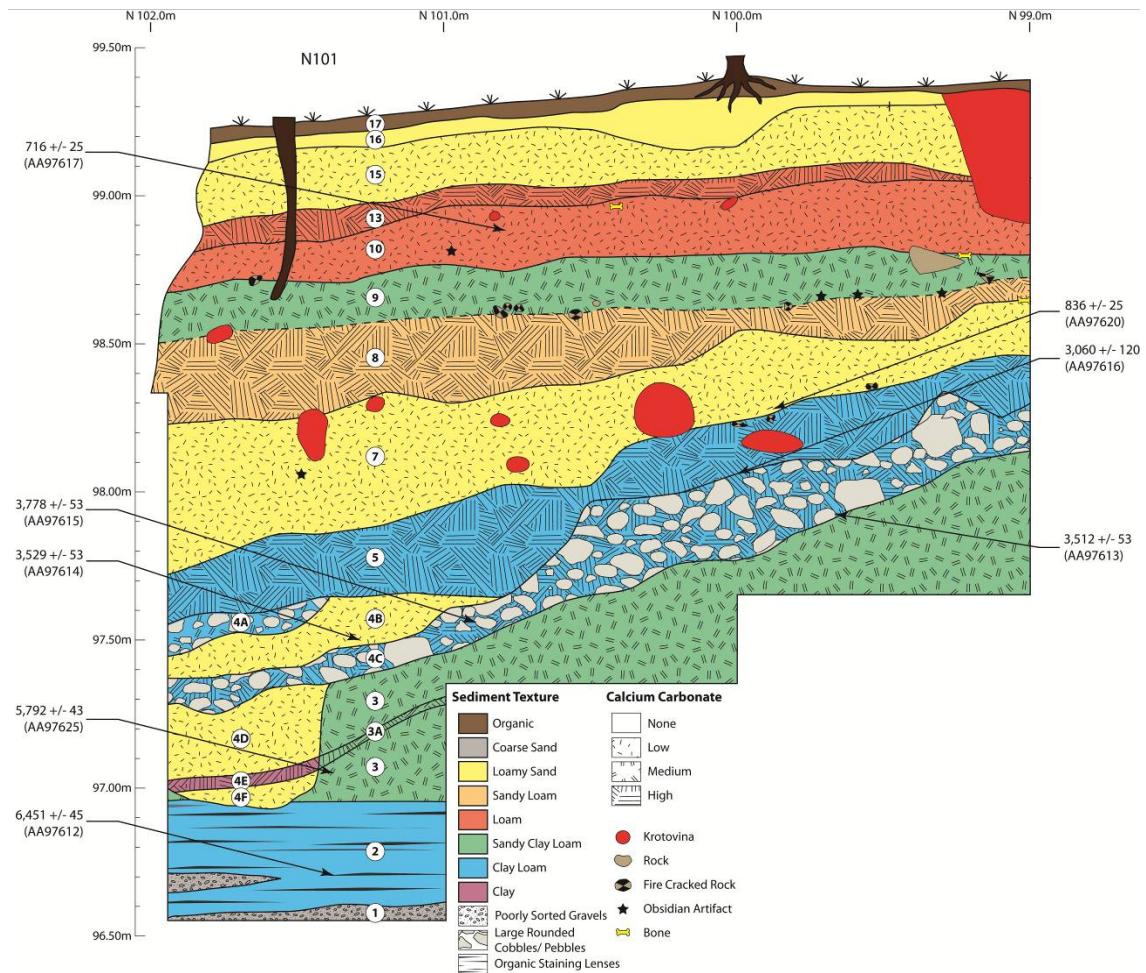


Figure 3. Stratigraphic Profile of Cultural Deposits at the Pioneer Site.

**Future Activities.** Looking forward, DOE-ID will continue to recognize a stewardship responsibility for the rich and irreplaceable cultural resources that are located on the INL Site and with its contractors will continue to implement the *INL Cultural Resource Management Plan* (DOE-ID 2013) to ensure that they are considered in the implementation of Agency missions and long term land use planning. Routine updates to the INL system of cultural resource information will also continue and additional legacy data will be incorporated. Investigations of buildings, structures, infrastructure elements, and artifacts from WWII and the post-War period will be concluded and documented in a Historic American Landscape Survey report that will be cataloged in the INL Archive Center as well as the Library of Congress. Analyses of samples and artifacts recovered from deeply stratified archaeological deposits at the Pioneer Site and other excavations will be designed to reveal additional information regarding prehistoric occupation and climate change as reflected in the isotopic signatures preserved in the bones of bison and large game recovered from the excavations. Basic survey and description of INL historic trails, homesteads, canals, ditches, canal construction sites, and other resources will continue and National Register nominations will be considered. The INL Archive Center will continue to expand its holdings of important documentary evidence of INL's important scientific and engineering accomplishments and development of finding aids to facilitate scholarly use. Finally, the EBR-I visitors center will remain open to the public, providing unique educational opportunities to INL employees and visitors, students, and curious travelers on US Highway 20/26.

## Los Alamos Field Office



*Figure 1. Overview of the Pajarito Plateau, Los Alamos, New Mexico.*

### **Overview of Los Alamos National Laboratory and the Department of Energy, National Nuclear Security Administration Los Alamos Field Office Cultural Resources Management Program**

The U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (the Los Alamos Field Office) manages Los Alamos National Laboratory (LANL or the Laboratory). Los Alamos National Security, LLC (LANS) is the Management and Operations (M&O) contractor for the Los Alamos Field Office. LANL was established in 1943 to develop the world's first atomic weapons as part of the top-secret Manhattan Project. The Laboratory is located in northern New Mexico on close to 36 square miles of land on the eastern flank of the Jemez Mountains along the Pajarito Plateau (Figure 1). More than 10,000 people work at LANL, and operations are conducted within numerous facilities located in 48 designated technical areas (TAs). For more than 70 years, LANL has developed scientific and technological advancements in the areas of nuclear weapons research and development and nuclear stockpile stewardship. Other areas of innovation include energy research, high-speed computing, medical and human genome research, and world-class science. In compliance with federal law, LANL environmental staff review and monitor the Laboratory's varied activities in order to protect the Laboratory's diverse natural environment and rich historical setting.

In consultation with the New Mexico State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, the Los Alamos Field Office has established alternate procedures to Section 106 of the National Historic Preservation Act (NHPA) through the implementation of the LANL Cultural Resources Management Plan (CRMP). The CRMP provides an overview of the cultural resources program and establishes a set of procedures for effective compliance with historic preservation laws specific to the cultural heritage at LANL. The Laboratory has a staff of cultural resources specialists who meet the qualifications set forth in the Secretary of the Interior's Standards and Guidelines for Professional Qualifications or who work under the supervision of individuals who meet these qualifications. As of January 2012, more than 90 percent of LANL's property has been subject to intensive surveys. About 1800 archaeological sites (primarily Ancestral Pueblo in origin—dating from the 13<sup>th</sup> through 15<sup>th</sup> centuries) and 500 historic buildings (dating from the Manhattan Project and early Cold War years) have been identified during these surveys.

## **FY 2012 through FY 2014 Cultural Resources Management Program Highlights**

In compliance with Section 106 of the National Historic Preservation Act (NHPA), the Los Alamos Field Office and LANS cultural resource management staff continued to evaluate proposed Laboratory projects from FY 2012 to 2014 for impacts to historic properties and cultural resources situated on LANL lands. The identification and management of LANL's most significant historic properties as stipulated in Section 110 of the NHPA has also continued to be a programmatic priority. Additionally, the Los Alamos Field Office consults with neighboring Pueblos regarding the identification, management, treatment, and protection of archaeological sites, Traditional Cultural Properties (TCPs), human remains, and sacred objects in compliance with the NHPA, the Native American Graves Protection and Repatriation Act (NAGPRA), and other federal regulations. Other accomplishments from this period are summarized under the categories of 1) Cultural Heritage Outreach and Public Education, and 2) Rehabilitation/Restoration Projects.

### **Cultural Heritage Outreach and Public Education**

As part of implementing the NHPA, LANS cultural resources management staff routinely gives presentations that focus on cultural resource compliance, awareness, historic properties, and historic preservation activities at LANL. Small-scale tours of historic properties (including archaeological sites and historic buildings) are given to a variety of public, professional, and government groups. From FY 2012 to FY 2014, the Los Alamos Field Office and LANS cultural resources staff gave presentations and tours. Specifically, in FY 2012 in honor of New Mexico State Heritage Preservation Month, there were tours of Tsirege Pueblo for 120 members of the general public (Figure 2), tours for smaller groups like the Poeh Center at Pojoaque Pueblo Native American Pueblo Pottery Class, and presentations at the Bradbury Museum for the public. In addition, numerous presentations focused on the cultural resources at LANL were given throughout the FY. Similar tours, presentations, and outreach activities for DOE staff, state, and federal regulator groups including New Mexico SHPO staff and DOE Inspector General took place in FY 2013. In FY 2014, members of the National Conference of State of Historic Preservation Officers (NCSHPOs) and the Federal Facilities Task Force have toured various cultural resource sites at LANL. Media requests were also supported during this time; notable highlights include visits by national news outlets, such as CBS, Fox News, and National Public Radio, and national television shows, such as Jeopardy.



*Figure 2. Site tour of Tsirege Pueblo.*

LANS cultural resources staff also supported requests by local New Mexico television stations, including KRQE, whose short news piece profiled a significant Cold War-era tunnel. The Laboratory's 70<sup>th</sup> Anniversary was celebrated during 2013, and cultural resources personnel supported many outreach activities associated with the anniversary, including a presentation and book signing related to local homestead history and LANL Family Day tours of Manhattan Project building areas. In 2014, LANS cultural resources staff gave presentations and tours supporting local groups, such as the LANL Student Association, the LANL Women's Group, and the Taos Archaeological Society, as well as high profile visitors, such as the Associated Press Board of Directors and William "Bill" Gates.

Annual outreach commitments include support for New Mexico Heritage Preservation Month each May. In addition, LANS cultural resources staff have been active participants in Los Alamos community-wide dialogues regarding the proposed Manhattan Project National Historical Park unit and work closely with Los Alamos County historic preservation representatives and the Los Alamos Historical Society. The Los Alamos Field Office and LANS cultural resources staff provided presentations at public meetings and at a community seminar series in 2013. The Los Alamos Field Office and LANS archaeologists routinely meet with their professional peers (e.g., Bandelier National Monument and the U.S. Forest Service) several times a year as part of a subgroup the East Jemez Research Council, a regional organization.

Public education during this period included the continued development of outdoor informational panels, monuments, and kiosks, such as the installation of trail kiosks in TA-70 and TA-71 (2013), and the installation of the Omega West Reactor monument in Los Alamos Canyon (2014). Other public education projects include development of a three dimensional model of Naké'muu Pueblo (the only remaining standing wall pueblo on LANL property) (Figure 3) and development of an upcoming

Bradbury Science Museum exhibit, which will focus on the archaeological aspects of the cultural resources management program at LANL.



*Figure 3. Site visit to Nakemuu Pueblo with tribal members.*

### **Rehabilitation/Restoration Projects**

During FY 2012 through FY 2014, several projects were completed that involved the rehabilitation of multiple historic properties damaged by wildland fires and subsequent floods, including the Cerro Grande Fire Sites Rehabilitation Project (2012) and the Las Conchas Fire Flooding Monitoring Project (2012 and 2013). In addition to damage assessments, post-fire rehabilitation work included the installation of erosion control features and the removal of burned trees. LANS cultural resources staff also supported fuels (vegetation) mitigation projects to prevent future damage from fires during this period. In consultation with the New Mexico SHPO, the Los Alamos Field Office and LANS completed a major restoration project involving a significant Manhattan Project facility (the Gun Site) in 2012 (Figure 4). Phase 2 of the Gun Site Restoration Project included major repairs to the facility's damaged concrete exterior in addition to site work and exterior changes with the goal of returning the bunkered buildings to their World War II appearance.



*Figure 4. Gun Site, where the “Little Boy” weapon was developed, after restoration.*

## **Future Program Priorities for Cultural Resources Management at LANL**

Future program priorities have been identified in a revision of the 2006 LANL CRMP, which is currently undergoing review by the New Mexico SHPO. For FY 2015, FY 2016, and FY 2017, planned program priorities will include the following: 1) Inventory and Assessment of Historic Properties, 2) Rehabilitation Projects, 3) Historic Property Management Strategies and Initiatives, and 4) continued Cultural Heritage Public Outreach and Education. These priorities are in addition to required Section 106 reviews of LANL undertakings as defined under the NHPA.

### **Inventory and Assessment of Historic Properties**

Historic building assessments will be conducted in areas of the Laboratory that are undergoing mission changes and that are scheduled for building closure and demolition. In anticipation of the demolition of LANL guard stations no longer in use, cultural resources staff will develop a LANL-wide context for Cold War-era guard facilities. Under the direction of the Los Alamos Field Office, LANS cultural resources staff will continue to work on the submittal of the expanded Los Alamos Scientific Laboratory National Historic Landmark (NHL) district nomination, which adds the remaining Manhattan Project buildings at LANL to the existing NHL district. The completion of legacy compliance reports has also been identified as a program priority, and additional archaeological context reports related to the Ancestral Pueblo occupation of the Pajarito Plateau are planned.

### **Rehabilitation Projects**

Several historic buildings will be undergoing rehabilitation for reuse. TA-14-6, a World War II darkroom and storage building, is planned for reuse as a break room and rest room facility. TA-18-23, a Cold War laboratory and experiment area, will be reused to store and display historic Manhattan Project and Cold War artifacts. Routine surveillance and maintenance at key Manhattan Project and Cold War buildings identified for long-term retention will be ongoing during FY 2015.

through FY 2017. Continued archeological site recording to close out the Cerro Grande Rehabilitation Project (CGRP) Tree Thinning Phase will also be a priority.

### **Historic Property Management Strategies and Initiatives**

Programmatic management strategies are an essential component of a mature cultural resources management program. The Los Alamos Field Office and LANS cultural resources staff will continue to coordinate with other internal organizations involved in strategic planning, including long-range facility planning. Additionally, there are two identified priorities for historic property management: 1) monitoring for archaeological site areas most at risk from both human and natural impacts, and 2) modeling/testing for subsurface significance and integrity for determining site eligibility to the National Register of Historic Places (NRHP). In terms of programmatic planning with neighboring Pueblos, key initiatives will include the development of a long-term management plan for Nake'muu Pueblo, (whose standing walls are continuing to deteriorate) and the identification of LANL areas that have significance as Traditional Cultural Properties (TCPs) or have ongoing consultation issues in relationship to NAGPRA and other related federal regulations.

### **Cultural Heritage Public Outreach and Education**

Outreach during the next three years will continue to focus on awareness campaigns, which will include tours of archaeological sites and historic buildings, public presentations, and the production of print and web publications. The Los Alamos Field Office will continue to support the Manhattan Project National Historical Park legislative process. Public education will also include the installation of the new cultural resources exhibit at the Bradbury Science Museum and additional support for publicly accessible visualization projects. One of these visualization projects will be a three dimensional model of TA-01 as it was during the Manhattan Project. The Los Alamos Field Office will continue its government to government outreach and consultation with the Four Accord Pueblos and other culturally affiliated Native American tribes.

## Lawrence Berkeley National Laboratory

### **A brief introduction on the history, purpose, and work activities at the site**

Lawrence Berkeley National Laboratory (Berkeley Lab) was founded as the “Berkeley Radiation Laboratory” in 1931 by Ernest Orlando Lawrence. A UC Berkeley physicist, Lawrence won the 1939 Nobel Prize for his invention of the cyclotron, a circular particle accelerator that opened the door to high-energy physics. In the world of science, Berkeley Lab is synonymous with “excellence.” Under Lawrence’s direction, Berkeley Lab was also the conceptual birthplace of both “team” or collaborative science and “big science,” two approaches that revolutionized the nature and pace of scientific research worldwide. Thirteen Nobel prizes are associated with Berkeley Lab. Seventy Lab scientists are members of the National Academy of Sciences. Thirteen scientists have won the National Medal of Science, our nation’s highest award for lifetime achievement in fields of scientific research. Eighteen engineers have been elected to the National Academy of Engineering, and three scientists have been elected into the Institute of Medicine. In addition, Berkeley Lab has trained thousands of university science and engineering students who are advancing technological innovations across the nation and around the world.

Researchers at Berkeley Lab have discovered 16 elements and many dozens of isotopes, identified good and bad cholesterol, turned windows into energy savers, found the source of large-scale structure in the universe and revealed the existence of dark energy, explained photosynthesis, exposed the risk of radon, redefined the causes of breast cancer, made appliances pull their weight in energy efficiency, and revealed the secrets of the human genome. Significant Berkeley Lab discoveries span the very large (Nobel Prize-winning work on the expanding, accelerating universe); the very small (key discoveries of sub-atomic particles as well as a National User Facility for nano-scale research); the distant past (Nobel Prize-winning work supporting the Big Bang theory); and the future (climate modeling using the NERSC supercomputing system).

Berkeley Lab consists of 76 buildings and is located on a 200-acre site in the hills above the UC Berkeley campus that offers spectacular views of the San Francisco Bay. Berkeley Lab employs approximately 4,200 scientists, engineers, support staff, and students. Two facilities have Historic American Engineering Records filed in the Library of Congress, HAER CA-186-A University of California Radiation Laboratory Bevatron and HAER CA-186-B University of California Radiation Laboratory SuperHilac. Many other facilities have undergone historic evaluation pursuant to the National Historic Preservation Act. In recent years, Berkeley Lab has developed a Cultural Resources Management Plan (CRMP) that governs the Department of Energy’s identification, evaluation, and treatment of potential historic resources and facilities at the Berkeley Lab site. The CRMP further identifies how the Department of Energy would interact with the State Historic Preservation Officer (SHPO) and comply with national historic preservation laws and Department of Energy regulations.

### **A three-year progress overview on historic properties, including highlights and accomplishments**

Notable accomplishments since 2011 include the drafting and finalization of the Berkeley Lab Cultural Resources Management Plan. In addition, Historic Resources Inventory Reports and California Department of Parks and Recreation 523 forms were prepared in draft form of the

following Berkeley Lab facilities: Building 88; Buildings 46, and 46A; Building 47; Building 54; Buildings 58 and 58A; Building 80; and Building 88.

### **A brief projection of activities and accomplishments for the next three years.**

Activities expected to be undertaken and/or completed between 2014 and 2017 include the submittal of historical reports for SHPO concurrence for the following Berkeley Lab buildings: Building 88; Buildings 46 and 46A; Building 47; Building 54; Buildings 58 and 58A; Building 80; and Building 88.

# Office of Legacy Management

## Introduction: history, purpose, and work activities at the site

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) was established on December 15, 2003, to handle DOE's environmental legacy responsibilities primarily related to the defense activities of DOE and predecessor agencies, particularly during World War II and the Cold War. This legacy includes responsibilities for long-term management of properties (legacy sites) that formerly contained radioactive and chemical waste, environmental contamination, and hazardous materials. LM has stewardship responsibilities for 89 legacy sites that are located across the United States and in one territory (Puerto Rico). Sites under LM responsibility include former uranium milling sites covered under the Uranium Mill Tailings Radiation Control Act; sites, primarily privately owned, associated with the original Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations addressed under the Formerly Utilized Sites Remedial Action Program; and sites remediated under the Comprehensive Environmental Response, Compensation, and Liability Act and/or Resource Conservation and Recovery Act. Other sites that are under LM responsibility include DOE Defense Decontamination and Decommissioning Program sites; and underground nuclear testing sites (i.e., the Nevada Offsites) conducted off the Nevada National Security Site (formerly the Nevada Test Site);

LM retains responsibilities to control and maintain records for approximately one-half (39) of the legacy sites. No active site disturbance occurs in association with these sites. Typical activities at the remainder of the 50 sites include site inspections, groundwater monitoring, maintenance actions, and noxious weed control. Occasionally new monitoring wells or erosion control activities are required. The majority of the sites consist of an engineered disposal cell that contains contaminated materials and is covered with an engineered earthen or rock cover and is surrounded by a buffer area of largely undisturbed land.

LM also manages uranium lease tracts. The Uranium Leasing Program (ULP) involves 31 lease tracts in three counties in western Colorado encompassing approximately 25,000 acres in the Uravan Mineral Belt. Only limited maintenance activities occur on a few lease tracts at this time; reclamation of many abandoned mines that were inherited by LM was completed between 2008 and 2011. Abandoned mines and associated areas may contain structures (e.g., portals) and mining-related items that have cultural significance. The US Bureau of Land Management administers public lands on which ULP activities occur and is responsible for the cultural resources when and where mining activities are not active.

DOE owns or leases 30 buildings and 4 trailers at 9 legacy sites. Five of the buildings on the Grand Junction Office site are known to be eligible to the National Register of Historic Places. With two exceptions, the buildings and trailers are used as storage sheds, office buildings, records buildings, and warehouses. Two buildings are used as visitor or interpretive centers and contain Cold War-era objects that were present onsite before remediation and document the early history of the uranium industry. Both centers are visited by local residents, school groups, and area tourists. The Fernald, Ohio, site Visitor's Center averages 10,000 visitors each year. The Weldon Spring, Missouri, site Interpretive Center averages 24,240 visitors per year of which 12,500 are visitors to the Interpretive

Center only; the remainder of the visitors consist of school groups and site use for classes and meetings.

### **Three-Year Progress Overview on Historic Properties**

Several Class III pedestrian inventories were conducted at LM sites in Colorado, New Mexico, Nevada, Ohio, and Wyoming. Prehistoric artifact scatters potentially eligible to the National Register of Historic Places (NRHP) were found at six locations associated with the Gnome Coach, New Mexico, site, the location of an underground nuclear test that was part of the Plowshare Program. Project components were relocated to avoid all locations. Three historic sites and isolated objects were identified during an inventory conducted at proposed hydrologic well locations at the Shoal, Nevada, site. The Shoal site contained objects related to an underground nuclear detonation that was a part of the Vela Uniform Program in the 1960s; project components were relocated to avoid the site areas. The sites are under evaluation as an historic district.

Class III cultural resource inventories were also conducted near the Riverton, Wyoming, site on Northern Arapaho and Eastern Shoshone tribal and private land. Three historic sites and isolated finds were discovered but were not found eligible to the NRHP or of tribal significance. All sites were avoided by project components.

Proposed work activities on the Fernald site required three Phase I Inventories and resulted in no eligible sites and isolated finds.

Two other small inventories resulted in non-declaration reports. A total of 292.3 acres on LM sites was inventoried for cultural resource purposes.

LM developed a Programmatic Agreement (PA) to identify roles and responsibilities related to the LM ULP. Mining activity under the ULP has been on hold during the completion of a Programmatic Environmental Impact Statement process. In anticipation that mining will continue in western Colorado, LM determined there was a need for a PA. In addition to the Advisory Council on Historic Preservation, the Colorado State Historic Preservation Office (SHPO), and the US Bureau of Land Management, LM contacted 26 federally recognized tribes and 5 local entities as potential participants in the PA.

The Fernald site revised their PA with the Ohio SHPO. The former PA required yearly reports, regardless of cultural resource activity. The revised PA stipulates submittal of an annual report only if cultural resource activity occurred during the year.

LM also prepared a Cultural Resource Management Plan that identifies, summarizes, and explains the procedures and actions that LM site managers will implement to meet the intent and spirit of the wide array of cultural resource mandates and policies.

### **Projection of Activities, Accomplishments for 2014–2017**

LM will continue to require cultural resource inventories in support of site activities, as activities are planned.

LM is in the early stages of considering visitor or interpretive centers at additional sites. The initiatives include construction of a new interpretive center at the Weldon Spring site and potentially establishing visitors centers at the Mound, Ohio, site; Rocky Flats, Colorado, site; and at the Grand

Junction, Colorado, site, where an LM office is located. Although the Grand Junction Office site is now owned by a local development corporation, DOE continues to lease part of the site. In 1998, the Colorado SHPO recommended Historic District designation for the Grand Junction site and eligibility for nomination to the NRHP. The proposed Grand Junction site visitor's center would be unique because it would be housed in an historic cabin on the site that was used by the Manhattan Project. The exterior of the cabin remains largely intact although various interior modifications occurred over time. Potential exhibits would include historic objects and memorabilia from the Manhattan Project period and the following Cold War-era legacy. It is anticipated that in addition to tourists and local visitors, local schools would arrange for groups to tour the facility.

# Lawrence Livermore National Laboratory

## Introduction

Lawrence Livermore National Laboratory (LLNL) is a government-owned and contractor-operated (GOCO) national laboratory. It is owned by the Department of Energy, National Nuclear Security Administration (DOE/NNSA). The University of California managed the site for fifty-five years, from its inception to 2007. In 2007, the Lawrence Livermore National Security, LLC (LLNS) was selected by DOE/NNSA to manage LLNL.

Since the end of the Cold War, the mission emphasis of the laboratory has undergone several changes. Since 2005, LLNL's mission is comprised of three areas:

- Nuclear Security, which includes stockpile stewardship, nuclear non-proliferation work and prevention of nuclear terrorism;
- International and Domestic Security, which includes counter terrorism and other threat reduction capabilities, as well as military technologies; and,
- Energy and Environmental Security, which includes climate change studies and the pursuit of technologies to enable a carbon-free energy future.

In 2005, Michael Anne Sullivan and Rebecca Ann Ullrich completed the *Historic Context and Building Assessment for the Lawrence Livermore National Laboratory* (2007). Five buildings, two districts, and selected objects were recommended by DOE to be eligible for the National Register of Historic Places (NRHP). The State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) concurred with these recommendations and a programmatic agreement was drafted and submitted by DOE to articulate the management of these properties and ongoing assessment activities. Since the original PA draft, minor comments and feedback were received, and it was very challenging to get SHPO to focus on finalizing the PA. Facilities and equipment continue to evolve to carry out the mission of the DOE/NNSA. In 2014, the new SHPO communicated that she was no longer interested in pursuing the programmatic agreement.

After some research with other DOE sites, it became clear that an agency-level PA with the Advisory Council on Historic Preservation would have been extremely helpful in working with the SHPO to structure a site specific PA. There are several other DOE sites struggling to draft and finalize programmatic agreements with their respective SHPOs or operating under old (more than ten years) or expired programmatic agreements.

The *Historic Context and Building Assessment for the Lawrence Livermore National Laboratory* (2007) can be found at

<https://www-envirinfo.llnl.gov/content/wildlife/cultural.pdf>

## Highlights and Accomplishments

Over the past three years, preservation via recordation has been initiated for four of the NRHP eligible properties. Recordation is in the form of a Historic American Building Survey/ Historic American Engineering Record (HABS/HAER). In addition, a Five Year NRHP Re-Evaluation of Historic Building Assessment was completed and submitted to the SHPO and ACHP in 2012. There were no

new buildings recommended to be eligible for the NRHP. Table 1 is a summary of the current status of properties considered eligible for the NRHP.

*Table 1- Current Status of Properties Considered NRHP-Eligible*

<b>Building or District</b>	<b>Year Built</b>	<b>Description</b>	<b>Criterion</b>	<b>Current Status</b>	<b>NRHP Eligibility</b>
Building 194	1958	100-MeV Electron-Positron Linear Accelerator Facility	A and C	Active research facility. Preservation via HABS/HAER documentation is complete.	NRHP Eligible
Building 280	1958	Livermore Pool-Type Reactor	A	Reactor and building are inactive. No change since original assessment.	NRHP Eligible
Building 332	1961	Plutonium Facility	A and C	Active research facility. Preservation via HABS/HAER documentation is complete.	NRHP Eligible
Building 391	1976	Nova Facility	A and C	Active research facility. Preservation via HABS/HAER documentation is complete. Mitigation Plan sent to SHPO in May 2006.	No longer NRHP Eligible
Building 865A	1980	Advanced Test Accelerator	A and C	Preservation via HABS/HAER documentation initiated. Building is inactive and some equipment has been removed for reuse.	NRHP Eligible
Building 174 Objects	1974	Janus laser and control panel	A and C	No change since original assessment.	NRHP Eligible
Site 300 Process Area and Chemistry Area Historic District	1957	Process Area and Chemistry Area: Buildings 805, 806A, 806B, 807, 810A, 817A, 817B, 817F, 825, 826, 827A, 827C	A	Most buildings in active use. Added Building 810A to district elements	NRHP eligible
Site 300 Hydrodynamic Test Facilities Historic District	1955	Hydrodynamic Test Facilities Area: Buildings 850 and 851A	A	850 is now inactive; 851A remains in active use	NRHP eligible

An interactive history of LLNL has been completed and is available to the public on the external website at <http://education.llnl.gov/archives/>. A companion document of six decades of photographs was published by the Regents of the University of California in 2007, it is entitled *Lawrence Livermore National Laboratory and the University of California, Making History...Making a Difference.*

## **Future Plans**

There are plans to eventually close and replace the Discovery Center at LLNL. The timing will depend on implementation of the Open Campus initiative. NHPA Section 106 reviews will be conducted as required and additional HABS/HAER documentation will continue to be prepared for the remaining NRHP eligible properties. A second periodic NRHP re-evaluation will take place with the next site-wide National Environmental Policy Act review which is likely to be initiated in the next five years.

# Nevada National Security Site

## Introduction

The Nevada National Security Site covers 1,360 square miles and was the United States continental nuclear testing ground from 1951 to 1992. During this Cold War era, there were 100 atmospheric and 804 underground nuclear tests conducted at this facility, formerly known as the Nevada Test Site. Other activities included research on the development of nuclear powered rockets and missiles, dosimetry, spent fuel storage, and an experimental farm to investigate the potential transport of radioactive materials in the food chain. Since the Cold War, the Nevada National Security Site has continued to support the nuclear, energy, and environmental security efforts of the Department of Energy's National Nuclear Security Administration.

The Nevada National Security Site Cultural Resources Management Program has documented more than 2,500 prehistoric and historic archaeological sites and almost 500 buildings, structures, and objects associated with the historic nuclear testing and research programs. Heritage tourism at the Nevada National Security Site consists of monthly public tours to historic nuclear testing locations within this restricted access facility. Displays in the National Atomic Testing Museum in Las Vegas present information related to these historic resources.

Thirteen historic districts have been established over the past 20 years. Five districts are associated with atmospheric nuclear tests: Frenchman Flat, Apple-2, Smoky, Yucca Lake, and the Structural Response Safety Program. Six are associated with underground nuclear tests: U12b, U12e, U12n, U12t, U16a, and U15a/e. The other two are associated with nuclear research programs: the Bare Reactor Experiment Nevada (BREN) Tower Complex and the Pluto Control Facility.

## Accomplishments

Accomplishments over the past three years at the Nevada National Security Site are the documentation of National Register eligible historic districts for the Smoky atmospheric nuclear test location, the Structural Response Safety Program structures, and completion of an on-going study of nuclear testing tunnels and two vertical shafts associated with an underground test bed. Also, stabilization work was conducted at the Apple-2 wooden structure and the BREN Tower Complex Historic American Engineering Record was completed prior to this tower's demolition. These projects provide diverse information about several aspects of nuclear testing history.

At the 1957 Smoky atmospheric nuclear tower test location, the usual post-shot cleanup procedures were not done after the detonation of this weapons related test. As a result, this test area offers a unique view of a post-shot landscape with scattered tower fragments and lead bricks along with several types of instrumentation stations. Also present are nine German and five French concrete personnel underground shelters with varying amounts of damage, built to evaluate the effectiveness of their designs. In addition, there is a set of military trenches, constructed specifically for this test, at a location several miles away.

The purpose of the Structural Response Safety Program was to gather ground motion and structural response data to ensure the safety of the off-site population and minimize damage to public and private structures from ground motion caused by underground nuclear testing. There were 14

structures built for this program between 1963 and 1966 and they were used in studies into the late 1970s. All 14 were relocated and recorded and form a discontiguous historic district. Twelve are wood framed and concrete masonry single room buildings and two are four story concrete bare frame structures. They were placed at various locations across the NNSS to study the test effects with assessments of distance from the ground zero and the magnitude of the ground motion.

In 2006, a cultural resources project was established to conduct historical evaluations of five nuclear testing tunnels (U12b, U12e, U12n, U12t, and U16a), and two vertical nuclear test shafts (U15a and U15e) related to an underground test bed. These tunnels and shafts were associated with nuclear tests sponsored by the Department of Energy and the Department of Defense through the Defense Threat Reduction Agency. The historic district documentation for tunnels U12b, U12e, and U12t was completed during the first five years of the project with reports on U12n, U16a, and U15a/e completed in recent years. This project documents the evolution of nuclear testing in horizontal tunnel drifts. The 1957 Rainier test in U12b was the first contained underground nuclear test in the world. The last test in a tunnel was the 1992 Hunters Trophy in U12n, thirty-five years later. Through the years the tunnels became larger and more complex culminating in U12n having a total of 24 drifts in which there were 22 nuclear tests with two drifts were used for high explosives tests. Outside the tunnels are rail lines, mining equipment, building foundations, vent pipes, and other items, such as light fixtures and electrical panels that supported the activities. The U15 Complex, containing the U15a and U15e shafts, has a unique test layout tailored to the purpose of the three underground tests conducted there between 1962 and 1966. At 785 feet and 1,518 feet below the surface, drifts were constructed to determine the survivability of various underground structures when subjected to a nuclear explosion. From 1977 to 1985, underground nuclear fuel storage experiments were conducted at this location to test the suitability of a hard rock medium to store spent nuclear waste. After an initial experiment in an alcove, a new facility was built off one of the drifts for the Spent Fuel Test – Climax experiment. This experiment primarily involved recording the conditions of the spent fuel and surrounding underground environment over the years the facility was in use. On the surface are two hoists and hoist houses, ventilation equipment, trailer parks, and a variety of features.

Apple-2 was a 1955 atmospheric nuclear tower test. For this civil effects test, a typical American community was built that included two story and single story houses, a radio station, a propane tank filling station, other small buildings, automobiles, and trailer homes. The two story houses contained mannequins in different types of clothes, furniture, and food. Two of these houses survived the test and are almost 60 years old. They are distinct from one another only on the exterior with one covered in wood and the other brick. Due to their age, weathering, and effects from the Apple-2 detonation, the condition of the buildings is deteriorating. A stabilization plan for both structures was completed in 2011 and in 2012 and 2013 the foundation of the wood structure was stabilized to prevent the collapse of its interior. The film footage of a similar two story wood building blowing apart from a nuclear blast is well known throughout the world, making these Apple-2 houses a highpoint of the public tours.

In 2011, a decision was made to demolish the BREN Tower as a result of the tower's increasing structural instability. The tower was built in 1962 for the Operation BREN dosimetry studies related to the Hiroshima and Nagasaki detonations. At 1,527 feet, it was 50 feet taller than the Empire State Building and, at the time of its construction, was the tallest structure ever built for the U.S.

government. It supported an unshielded reactor, positioned at various heights in the vicinity of analog Japanese houses. Records showed that a significant percentage of the survivors at Hiroshima and Nagasaki were in the homes and because of the structural uniformity of Japanese house, the emphasis of the study was on this group of survivors and the shielding characteristics of their homes. In 1966, the tower was moved due to ground motion effects from underground testing. In its new location it was used for Operation HENRE programs that continued radiation, shielding, and dosimetry studies. In 2007, a historical evaluation of the BREN Tower complex was completed. In addition to the tower, the complex contains associated buildings (a mock Japanese House and a bunker), structures that range from experiment stations to small towers, and other features associated with the experiments conducted there. Prior to the 2012 demolition of BREN Tower, Historic American Engineering Record documentation was completed for the complex.

## Future Activities

For the next three years, the Nevada National Security Site Cultural Resources Program plans to continue documentation of atmospheric and underground nuclear testing locations, such as the Grable nuclear cannon site and the portable above ground chamber used for the Huron King underground test. Cultural resources inventories for new project locations will continue as will the annual monitoring of National Register eligible properties on a rotating basis.



*Smoky Test Area*



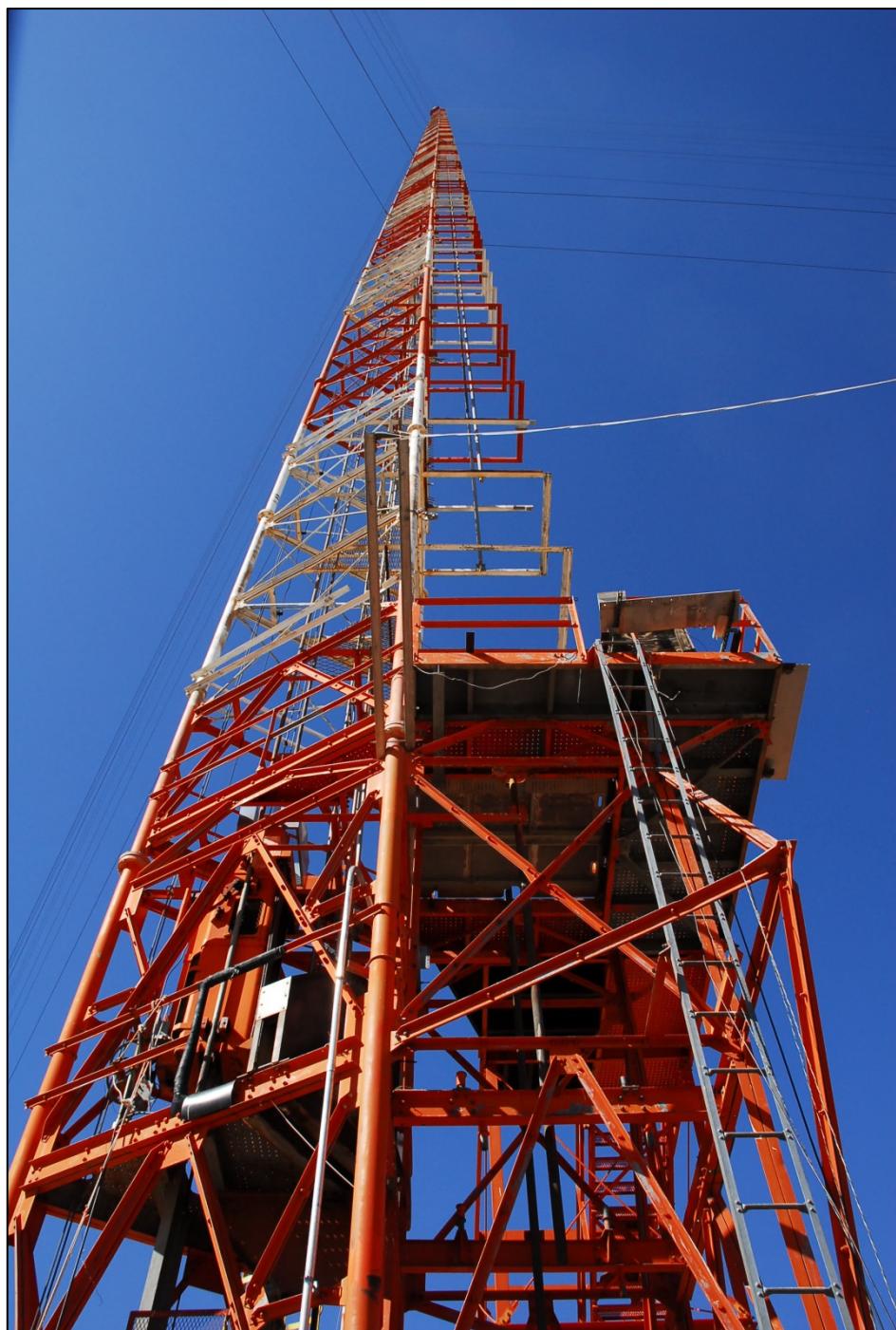
*U12b Tunnel*



*U12n Tunnel*



*Apple-2 Wood House*



*BREN Tower*

# National Renewable Energy Laboratory

## NREL Mission

The National Renewable Energy Laboratory (NREL) is the only national laboratory solely dedicated to advancing renewable energy and energy efficiency technologies from concept to commercial application. NREL's mission is to develop renewable energy and energy efficiency technologies and practices, advances related science and engineering, and transfers knowledge and innovations to address the nation's energy and environmental goals. The laboratory's main 327-acre South Table Mountain campus in Golden, Colorado, is a living model of sustainable energy. NREL also operates the 305-acre National Wind Technology Center (NWTC) located between Boulder and Golden, Colorado. The operation of NREL is overseen by the Golden Field Office (GO) for DOE.

## NREL History

The site of the NREL South Table Mountain campus was formerly part of Camp George West, a Colorado Army National Guard facility that operated from 1902 until the 1960s. In 1977, the State of Colorado transferred this property to DOE to establish Solar Energy Research Institute (SERI), which achieved national laboratory status and was renamed NREL in 1991. Currently, the NREL South Table Mountain campus consists of multiple laboratory buildings, testing facilities, and support facilities dedicated to renewable energy and energy efficiency research and development in areas such as photovoltaic solar cells, concentrated solar power, biomass, biofuels, vehicles, hydrogen and fuel cells, energy systems integration, and geothermal.

Since the mid-1970s, DOE has conducted wind energy research and development at the NWTC site, then known as the Wind Energy Test Center, which is located northwest and just outside the buffer zone of the former DOE Rocky Flats site. The site was later renamed the NWTC and today is the nation's premier wind energy technology research facility, and advances the development of innovative land-based and offshore wind energy technologies through its research and testing facilities.

Due to the age of both of these DOE sites, there are currently no historic DOE-built buildings or structures over 50 years old or otherwise eligible for inclusion to the National Register of Historic Places. Cultural resource surveys have been completed for the entirety of both sites. There are no known cultural resources present at the NWTC. As a result of surveys at the South Table Mountain campus, three historical structures were recognized as significant cultural resources that should be preserved, including an open-air amphitheater, a stone bridge spanning a natural drainage channel adjacent to the amphitheater, and a stone and concrete ammunition igloo below the amphitheater site. These structures were constructed during the Works Progress Administration (WPA) era in the 1930s when the property was part of Camp George West. Through DOE's efforts, these sites were added to the National Register of Historic Places in 1992, with the amphitheater and stone footbridge listed together as a single site. To date, traditional cultural properties have not been identified at either the South Table Mountain campus or NWTC.

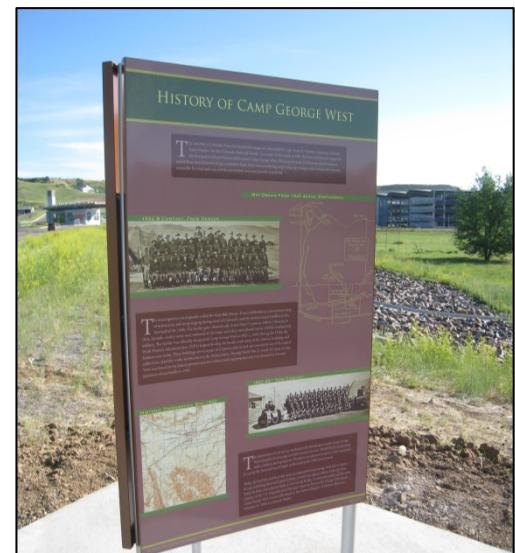
## Cultural Resource Management Program and Highlights

NREL and GO identifies and protects cultural resources in several ways:

- Integrating cultural resource management into site activities and minimizing and/or mitigating impacts to historic properties and features.
- Implementing procedures to manage historic features and to protect undiscovered cultural resources and artifacts.
- Periodically conducting surveys to document presence or absence of cultural or historic resources while considering project impacts to the human environment. When surveys reveal artifacts, NREL and GO staff works with the Colorado SHPO to determine if the artifacts are eligible for consideration as cultural or historic resources.
- Requiring construction contractors to provide workers with site orientation training that includes guidance on what to do in the event they discover any evidence of cultural resources during ground-disturbing activities. Workers are to stop all work in the vicinity until a qualified archaeologist evaluates the significance of the find.

By integrating cultural resource management with the National Environmental Policy Act (NEPA) process and other planning processes at NREL, DOE minimizes when possible or mitigates potential impacts from NREL activities, operations, and new development on cultural resources. Site-wide NEPA documents and campus planning documents for the South Table Mountain campus specifically designate the two historical sites in a protected and non-developable 11-acre zone to prevent direct impacts to these resources. Indirect impacts, such as visual effects, to these features and nearby offsite historic properties from the campus development activities and STM operations are considered and analyzed in NEPA documents in concert with Section 106 consultations conducted with the Colorado State Historic Preserve Officer (SHPO) and other consulting parties. While there are no eligible historic properties on the NWTC site, NEPA documents for activities at the NWTC also consider indirect visual impacts to offsite historic properties in conjunction with the Section 106 consultation process.

In 2011, DOE entered into a Memorandum of Agreement (MOA) with the Colorado SHPO to mitigate impacts that a new south access road to the South Table Mountain campus would have on two offsite former rifle range firing lines associated with Camp George West Historic District. The proposed project would remove approximately 50 feet of the western extent of the southernmost firing line. In lieu of recordation, DOE agreed to design and construct an interpretative display to document this contributing resource that will be readily accessible to the general public, enrich the value of Pleasant View Park at Camp George West, and provide a linkage to the military heritage of the site. This interpretative feature was completed in June 2013. The Colorado SHPO acknowledged in February 2014 that DOE had completed its obligations per the MOA and stated: *“the quality and content of the interpretative panel is commendable and we hope that this feature enhances the visitor experience to the Camp George West Historic District.”*



GO and NREL began preparing in 2012 a Site-Wide Environmental Assessment under NEPA for potential future improvements over the next five to ten years at the NWTC. This included an analysis of potential impacts to cultural resources by activities including expansion of existing facilities, new facilities, and installation of additional wind turbines and meteorological towers. An area of potential effect of two miles was established to consider indirect visual impacts of the potential turbine and tower installations. Within this area, eighteen offsite historic sites were identified with one listed on the National Register, seven determined to be eligible, and ten unevaluated sites. A view shed analysis was completed and DOE determined that the proposed undertaking would not result in an adverse effect to historic properties. The Colorado SHPO concurred with this determination in September 2013, thus completing the Section 106 process for this undertaking.

Similarly, in 2014 GO and NREL initiated the preparation of a Site-Wide Environmental Assessment for potential future improvements at the South Table Mountain campus over the next five to ten years. This assessment also considered the potential impact to on- and off-site cultural resources and included consultations with the Colorado SHPO and other consulting parties per Section 106 of the NHPA. The Colorado SHPO's primary concern involves indirect visual impacts to the amphitheater and ammunition igloo. These effects could occur from new development near and within the view shed of these resources. However, there is an insufficient level of detail available about the location and design (such as dimensions, architectural features, etc.) of potential future facilities near these resources to properly characterize whether effects would occur or not. As a result, DOE proposed to address its Section 106 obligations by initiating future Section 106 consultations, on project-by-project basis, as individual campus improvements and infrastructure are funded or authorized. The Colorado SHPO concurred with this approach in June 2014. This subsequent consultation and coordination will allow for further effects analysis, including the exploration of impact avoidance, minimization and mitigation strategies as appropriate.

## **Future Culture Resource Management Activities**

GO and NREL are currently evaluating the feasibility of entering into a Programmatic Agreement with the Colorado SHPO and other consulting parties to streamline future Section 106 compliance for activities and operations at the NREL South Table Mountain campus. GO and NREL have had meetings with the Colorado SHPO to discuss this option and potential specific conditions of the agreement to protect the three historic resources onsite. The Programmatic Agreement would outline what types of undertakings (e.g. activities or projects) could move forward without consultations and what undertakings would require consultations.

In the next three years, DOE is also proposing the siting, design and installation of an aboveground electrical transmission line from the NWTC to a local electric utility's offsite switchyard. The proposed transmission line would be less than two miles long and run to the south along an existing railroad line from the southwest corner of the NWTC. In conjunction with the NEPA analysis for this proposed action, DOE would research and consult with the Colorado SHPO and other consulting parties per Section 106 of the NHPA.

## Oak Ridge Reservation: ETTP

### Introduction

The Oak Ridge Reservation (ORR) consists of roughly 33,000 acres of Federally-owned land in Anderson and Roane counties, Tennessee, and resides within the corporate limits of the city of Oak Ridge. The ORR has three Department of Energy (DOE) industrial complexes geographically isolated from each other: the Oak Ridge National Laboratory, Y-12 National Security Complex and East Tennessee Technology Park (ETTP). The Oak Ridge Office of Environmental Management (OREM) is responsible for clean-up activities at all three sites; however, it serves as the landlord for ETTP. ETTP is located approximately 10 miles west of Oak Ridge, Tennessee and had five Gaseous Diffusion Process buildings (including the K-25 Building) as well as approximately 500 other support structures. Construction began on the U-shaped K-25 Building in 1943 to enrich uranium in support of the war effort. Operations began in 1945 and continued until 1964, when most operations were shut down. However, the purge cascade remained operational until 1977. At one time, the K-25 Building was the largest building under roof at approximately 44 acres. In 2001, DOE identified the K-25 Building as a Manhattan Project signature facility and original intentions were to preserve a portion of the facility. Severe structural deterioration and extensive contamination concerns made it impossible to preserve. OREM worked with stakeholders to develop a memorandum of agreement (MOA) which would preserve the historical significance of the East Tennessee Technology Park and in 2012, DOE signed the MOA with 11 other parties to interpret and commemorate the significance of the former gaseous diffusion plant and its role in the Manhattan Project through other activities. This agreement had multiple elements designed to off-set the loss of significant historical properties at ETTP. Some of the primary components of this agreement are to design and construct: an equipment building (to house equipment and artifacts from the K-25 Building), a viewing tower which will facilitate an understanding of the scope and scale of the original K-25 Building; a history center which would allow visitors to view important items from the Manhattan Project era. The MOA also preserved the footprint of the K-25 Building.

### Progress overview for the last three years (2012 – 2014)

The following identifies DOE's progress in complying with the requirements of the MOA:

In accordance with the MOA, a grant was awarded in August 2012 to Knox Heritage (an agent of the East Tennessee Preservation Alliance) to purchase and rehabilitate the Alexander Inn. The Alexander Inn (formerly the Guest House) was frequently visited by individuals who were historically significant during the Manhattan Project such as General Leslie Groves, Enrico Fermi, and Robert Oppenheimer. This was one of the compensatory measures set forth in the MOA. The Alexander Inn was to be purchased with part of the grant funds and improved to meet current building codes. All modifications to the property had to be made consistent with Department of Interior standards for historical properties. The sale was completed in early 2013 and the building has been brought up to code, thereby fulfilling the MOA commitment.



*Alexander Inn (Original Condition)*



Currently, a private company is completing the restoration of the Alexander Inn.

OREM, through a grant with the City of Oak Ridge, has developed a collection of oral histories from people who worked in the Manhattan Project facilities and/or lived in Oak Ridge during the Manhattan Project era. This grant is in its fifth year and we have collected or recorded approximately 400 oral histories most of which are available online. These histories will be available through the Virtual Museum, which can be accessed online or in the History Center at ETTP consistent with the stipulation of the MOA.

Historic American Engineering Record (HAER) standard photographs were taken inside the North Tower of the K-25 Building prior to its demolition. We are preparing to write histories consistent with HAER standards for the K-25 Building and two other facilities at ETTP. This documentation will be provided to the HAER representative from the National Park Service. This data will likely be incorporated into the designs and displays at the History Center at ETTP.



*HAER Photography of K-25 North End*

OREM has collected and stored more than 800 artifacts from the Manhattan Project to be used for commemorative activities. In July 2014, a final inventory was conducted to evaluate the condition of the artifacts, resolve contamination and classification issues, and determine potential future uses, including which artifacts could be used in the History Center and Equipment Building at ETTP once they are constructed.

OREM has collected and stored bricks that were used to construct the S-50 Boiler House Chimney. These bricks are being preserved and will be used to design National Park Service standard wayside exhibits in the future.



*A few of the artifacts removed from K-25*

In August 2013, a listing was compiled of all available classified and unclassified documents pertaining to the Manhattan Project and the K-25 Building. This list was transmitted to the National Park Service and the consulting parties of the MOA. DOE will work with the HAER representative from the National Park Service to provide copies of unclassified documents for HAER.

Demolition of the K-25 Building and waste disposal was completed in June 2014, and a survey of the K-25 Building Slab is being conducted to determine the possible end states for commemoration. Because the facility was contaminated, it is necessary to perform radiological surveys of the area to determine what, if any, cleanup actions are required. The findings of this review will be incorporated into a design for preserving the area where the K-25 Building stood.



*K-25 Building Slab*

OREM (through a subcontractor to URS|CH2M Oak Ridge) has awarded a subcontract to a Site Design Team and Museum Professional. Input to the design for marking the footprint of the K-25 Building and constructing a History Center, Equipment Building, and viewing tower was solicited from the parties to the MOA. The design is underway and final design issued in December 2015.



*Design of Equipment Building Conceptual Drawing from Park Service Report*

In addition, the MOA calls for the following actions and activities to occur within the reporting period and are either complete or ongoing.

- Appoint a K-25 Historic Preservation Coordinator, with responsibility for the implementation of the MOA's stipulations (Complete August 2012).
- Issue a Mitigation Plan and Execution Plan (Complete November 2012).

- Initiate discussions with the City of Oak Ridge for the use of a City of Oak Ridge fire station as the K-25 History Center (Initiated August 2012).
- Initiate procurement of a web-based K-25 Virtual Museum (Initiated February 2013).
- Prepare and deliver a semi-annual progress reports on MOA adherence (4<sup>th</sup> report August 2014).

## **Progress overview for the next three years (2015 – 2017)**

In the next three years, provided adequate funding is received, OREM plans to construct a History Center, an Equipment Building and a viewing tower. These structures will allow public access to the records, artifacts, and equipment that helped end World War II. In addition, artifacts from the Cold War era will also be maintained in these areas.

The footprint of the K-25 Building will be preserved to provide visitors a perspective of the magnitude of the facility.

A virtual museum will be developed and available for the public to experience the facilities through a web-based application. This website will also provide access to many of the oral histories recorded from a grant agreement with the City of Oak Ridge, as well as give viewers the opportunity to add their own histories.

OREM will also develop National Park Service Standard wayside exhibits to mark significant areas of ETTP; develop tour brochures; dedicate the footprint of ETTP; and complete HAER documentation for the K-1037 Building and Portal 4 at ETTP.

# Oak Ridge: Oak Ridge National Laboratory

## Introduction

In 1947, the Atomic Energy Commission designated the facilities at Oak Ridge the Clinton National Laboratory and in 1948 renamed the lab the Oak Ridge National Laboratory (ORNL). ORNL is the oldest national laboratory on its original site and the site of the world's oldest nuclear reactor. Today, ORNL is the U.S. Department of Energy's (DOE) largest science and energy national laboratory, with scientific programs focused on materials, neutron science, energy, high-performing computing, systems biology, and national security.

ORNL partners with the state of Tennessee, universities, and industries to solve challenges in energy, advanced materials, manufacturing, security and physics. The laboratory's science and technology innovations are translated into applications for economic development and global security.

The laboratory is home to several of the world's top supercomputers and is a leading neutron science and nuclear energy research facility that includes the Spallation Neutron Source and High Flux Isotope Reactor. ORNL hosts a DOE Leadership Computing Facility—home of the Titan supercomputer; one of DOE's nanoscience centers—the Center for Nanophase Materials Sciences; the BioEnergy Science Center—one of DOE's Energy Research Centers; and the Consortium for Advanced Simulation of Light-Water Reactors, a DOE Innovation Hub.

## Three-Year Progress Overview on Historic Properties

During the past three years (2012-2014) ORNL continued to maintain and operate its historic resources and make them available to users where security and safety concerns allow. ORNL continues to manage several structures that are listed, or eligible to be listed, on the National Register of Historic Places, many of which cannot be accessed by the public; i.e., the Air Mail Beacon House and Freel's Cabin. In addition, ORNL continues preserving important historical documents, such as a memo from Ernest O. Wollan, seeking permission to perform neutron diffraction experiments at the Graphite Reactor – the birth of neutron analysis.

DOE owns the American Museum of Science and Energy in Oak Ridge, Tennessee, and ORNL's contractor UT-Battelle, LLC, manages and operates the facility, which sees about 70,000 visitors per year. The museum opened in 1949 in an old wartime cafeteria and was named the American Museum of Atomic Energy. Its guided tours took visitors through the peaceful uses of atomic energy. The present facility opened in 1975, was renamed the American Museum of Science and Energy in 1978, and has always been dedicated to preserving Manhattan Project history and enhancing science education for the general public. Among the permanent exhibits is a panorama of historical photographs, documents, and artifacts explaining the Manhattan Project and construction of the city of Oak Ridge. The museum is open daily to the public, except Thanksgiving, Christmas Eve, Christmas, and New Year's Day. ORNL also participates in DOE's Oak Ridge Summer Public Bus Tour, which departs from the [American Museum of Science and Energy](#) Mondays through Fridays at noon during June-August. The tour stops at historic ORNL sites like the Graphite Reactor and the New Bethel Baptist Church. More than 22,000 people from all 50 states have taken this tour since its inception in 1996.

ORNL continues to operate, as a museum, a portion of the oldest nuclear reactor in the world. The 1943 Graphite Reactor was designated a historic landmark by the U.S. Department of the Interior in 1966 and by the American Nuclear Society (ANS) in 1992. It is part of the ORNL Public Tour, which originates at the American Museum of Science and Energy in Oak Ridge. In 2014, ORNL began working with the local stakeholders to find ways to strengthen the museum as a community and regional asset, as well as a destination attraction.

DOE continues to maintain the 1927 New Bethel Baptist Church located at ORNL. The church is representative of the pre-World War II era at Oak Ridge. New Bethel Baptist Church was listed on the National Register of Historic Places in 1992. Each spring, the church hosts families who have relatives buried in the cemetery. It is also a stop for the Summer DOE Public Tour bus.

In 2013, an ORNL Site-Wide Master Plan was completed which integrates factors such as sustainability and reuse of ORNL's historic buildings and historic districts in the context of current and future missions.

In 2014, a historic recordation of Buildings 4500N and 4500S was completed. These buildings, which are located in the ORNL historic district, have been the central administration and research facilities since they were constructed in 1952 and 1961, respectively.

During 2012 to 2014, recordations, including architectural and historical descriptions, were completed for Building 3000, an electrical substation; 7001 and 7002, both warehouses; 7012 and 7015, both shop facilities; and 7751, a sentry post. In addition, recordation was completed for the Holifield Radioactive Ion Beam Facility and its supporting facilities.

The Smithsonian Institution and the Department of Energy's Oak Ridge National Laboratory announced a new partnership to support collaborative research programs and science education efforts. This is the first partnership between Oak Ridge National Laboratory and the Smithsonian, which was formalized during the signing of a memorandum of understanding on June 12, 2014.

This new partnership between the Smithsonian and ORNL allows the Smithsonian Associates a rare chance to go behind the scenes at this center of cutting-edge research and science. An unprecedented 4-day study tour will bring 40 participants into the heart of Oak Ridge's past and present, guided by the staff and the scientists who lead and conduct its research.

In July 2014, the High Flux Isotope Reactor has been approved as an ANS Nuclear Historic Landmark. Final approval of this site was given by the ANS Board of Directors following an initial ballot by the Society's Honors and Awards Committee.

Recognition of this new landmark will take place during the Honors and Awards President's Special Session at the ANS 2014 winter meeting in Anaheim, California.

## **Projection of Activities and Accomplishments for the Next Three Years**

During the next three years, ORNL will update its Historic Preservation Plan.

ORNL will transition the AMSE to a community-based resource in an effort to ensure its sustainability for years to come.

Master planning for Buildings 4500N and 4500S will incorporate appropriate, sustainable, reuse and modernization informed by historic recordation of these buildings.

## Oak Ridge: Y-12

### Introduction

The Y-12 Plant was the first Manhattan Project site to break ground. Managed by the Army Corps of Engineers, Y-12 went from the drawing board to an industrial plant of 22,000 people in less than three years. Y-12's role was to develop the electromagnetic process to enrich uranium for the first atomic bomb. The electromagnetic process used equipment called calutrons to separate U-235 from U-238 by forcing the particle stream through a field of powerful magnets. The production of the new technology calutrons was possibly the most important project in the Manhattan Engineer District. The calutrons required vast amounts of electricity and conducting material, namely copper. However, with copper in short supply because of the war, a substitute conductor was named: silver. The United States Treasury loaned Y-12 14,700 tons of silver, most of which was returned after the war. However, 67 tons of silver was retained for use in the calutrons, in Building 9731 (The Pilot Plant), to separate stable isotopes. Many of these stable isotopes were used to create medical isotopes that are still used in many life-saving medical tests and treatments. In May of 1970, the 67 tons of silver was replaced with copper and returned to the U.S. Treasury.

### Three-Year Progress Overview on Historic Properties

In 2007, the Y-12 New Hope Visitor Center opened which houses the Y-12 History Center. The History Center featured historical photographs and artifacts conveying Y-12's role in the Manhattan Project. The Y-12 History Center is open to the public, Monday through Thursday from 8:00 a.m. to 5:00 p.m. and on Fridays by special request.

Since 2008, Y-12 conducts hundreds of tours each year of the Y-12 History Center and the Pilot Plant facility for schools, universities, various organizations, and conferences from many states across the U.S. Posters, exhibits and artifacts are displayed to help visitors understand and value the history of Y-12.

In 2010, major renovations to the Y-12 History Center began. The scope of the project included the addition of a reception area, a history library, and a video viewing area for visitors to increase their knowledge and appreciation for the contributions Y-12 made regarding the Manhattan Project, the Cold War, and current missions.

In 2010 and 2011, the documentary DVD of the history of Y-12, "The Nuclear Family," received international film festival awards for each of the four episodes: *I've seen it, Manhattan, District; A race for peace*; and *Lifting the veil*. It was featured on the East Tennessee Public Broadcasting System. The Nuclear Family DVD is given to visitors at no cost when they tour the Y-12 History Center.

In 2010, a multi-year plan was developed for cleaning up and restoring the Pilot Plant, one of Y-12's historic facilities recommended as a National Historic Landmark facility. A major clean-up on the interior and exterior was completed. Original windows were repaired and painted.

In 2011, major renovations were initiated in the Y-12 History Center to incorporate a history library and history video viewing area.

In 2011, Y-12 won the Best Event within an Event Award for its tours at Y-12 of the Y-12 History Center and the Pilot Plant facility during the Secret City Festival.

In 2012, major renovations in the Y-12 History Center were completed. The new reception area, the history library named for Dr. John Goigin (a Y-12 scientist), and the history video viewing area (named for Ed Westcott, the only Oak Ridge Manhattan Project photographer) have been extremely instrumental in visitors maximizing their Y-12 experience and increasing their appreciation for the scientific accomplishments made at the site and its role in our national heritage. The history library houses a collection of historical photographs, books, documents, and artifacts. The video viewing area displays artifacts, historical photographs, and continuously runs historical videos to help visitors better understand and appreciate the speed with which the site was constructed and the importance of winning the "race" for the atomic bomb.

In 2012, interpretive signs providing historic photographs of historic buildings, the building's history, and its role in the history and development of Y-12 were developed and installed throughout Y-12 showing the location of existing or former historic properties.

In 2013, a large timeline mural was added in the entrance of the Y-12 New Hope Visitor Center to convey Y-12's history and historical events prior to the development of Y-12, during the Manhattan Project and Cold War era, and for current missions. Several TV monitors are strategically located throughout the visitor center to continuously run various documentary DVDs for visitors to hear the oral interviews of former New Hope residents before the government displaced them and to better understand the history of Y-12 and its role during the Manhattan Project.

## **Projection of Activities and Accomplishments for the Next Three Years**

Plans are to continue providing the tours and to continue making the selection of materials, including documentary DVDs, books, pamphlets, postcards, and fact sheets available to the public at no cost.

Plans are to develop more interactive, video-based, and engaging displays to enhance the tour routes in the Y-12 History Center and the Pilot Plant facility to better convey Y-12's history to the next generations and to give our visitors the complete story of the Pilot Plant's contribution during the Manhattan Project.

Plans are to install more interpretive signs providing historic photographs of historic buildings, the building's history, and its role in the history and development of Y-12 throughout the plant.

# Pacific Northwest National Laboratory

## Introduction on the History, Purpose, and Work Activities

Pacific Northwest National Laboratory (PNNL) includes facilities in Richland, Washington at the PNNL Campus and the PNNL Marine Sciences Laboratory (MSL) near Sequim, Washington. One of 10 Department of Energy Office of Science (DOE-SC) national laboratories, it is a multi-program facility that delivers breakthrough science and technology in the areas of energy and environment, fundamental and computational science, and national security. Operated by Battelle Memorial Institute (Battelle) under contract to DOE-SC's Pacific Northwest Site Office (PNSO), PNNL also performs work for a diverse set of clients including the National Nuclear Security Administration, U.S. Department of Homeland Security, U.S. Nuclear Regulatory Commission, U.S. Environmental Protection Agency (EPA), DOE Office of Environmental Management (DOE-EM), and other federal agencies. PNSO is responsible for program implementation, acquisition management, and laboratory stewardship at PNNL. Through its oversight role, PNSO manages the safe and efficient operation of PNNL while enabling the pursuit of visionary research and development (R&D) in support of complex national energy and environmental missions.

In Richland, the PNNL campus is located in an area that was a construction housing camp for post-World War II development. From 1951 to 1961 it was known as Camp Hanford, and was used to house military personnel and support activities. In 1964, the federal government issued a request for contractors to bid to operate the Hanford Site laboratories to conduct R&D activities related to nuclear energy and the non-destructive use of nuclear materials. In January 1965, Battelle was awarded the Pacific Northwest Laboratory (PNL) contract and, as part of the successful proposal, was able to invest its own funds to construct facilities to conduct non-Hanford Site research to promote R&D around the Pacific Northwest. Battelle bought 93 ha (230 ac) of former Camp Hanford land from the City of Richland to build its facilities.

In the late 1970s research at PNL expanded into energy, health, environmental, and national security endeavors. With the expanded areas of research, PNL contributed to areas such as robotics, environmental monitoring, material coatings, veterinary medicine, and the formation of new plastics. In 1995, PNL was renamed as Pacific Northwest National Laboratory (PNNL). Throughout the ensuing years, PNNL researchers have developed versatile technologies, earning numerous R&D 100 awards, Federal Laboratory Consortium awards, and Innovation awards for their R&D work and contributions.

Construction at MSL in Sequim began in 1967. Part of the acreage was originally a Native American village listed in the Washington Heritage Register in 1972 as Suxtcikwi'in, Washington Harbor Indian Village. Before being selected as the site of the MSL, the land was the site of the Bugge Clam Cannery, which was established in 1907. The original cannery, destroyed in a fire in 1929, was rebuilt and continued operation until Battelle acquired the land in 1967.

In 2002, PNNL established a Coastal Security Institute as a new component of MSL. The Institute's mission is to support intelligence, national security, and homeland security operations in coastal regions and marine environments, both domestically and globally. In October 2012, the PNNL

operating contract was revised, giving DOE exclusive use of MSL and consolidating operations under PNSO oversight.

Currently, researchers at MSL provide innovative science and technology solutions critical to the nation's energy, environmental, and security future. Capabilities include environmental chemistry, water and ecosystem modeling, remote sensing, remediation technology research, environmental sensors, ecotoxicology, biotechnology, and national and homeland security.

### **Past 3 years (2012-2014)**

In the past three years Historic Preservation efforts at PNNL have consisted of annual site condition monitoring of culturally sensitive areas including a pre-contact village site, cemetery, and camp/fishing site. In addition compliance with NHPA Section 106 for PNSO driven undertakings on campus has resulted in multiple cultural resource reviews which have had public involvement through consultation.

### **Next 3 years (2015-2017)**

In the next three years the PNSO Cultural and Biological Resource Management Plan (CBRMP) will be revised. The existing PNSO CBRMP does not include the MSL, so the plan is being revised to include protection and monitoring of the biological and cultural resources at MSL.

The culturally sensitive areas will continue to be monitored and any potential threats will be documented and addressed. Cultural resource reviews will continue to be prepared for individual actions and projects as needed.

## Pantex Plant

### **Brief Introduction on the history, purpose, and work activities at the site**

In 1942, the U.S. Army Ordnance Department chose the current Pantex site for construction of a bomb-loading facility. The 16,000-acre industrial Pantex Ordnance Plant, designed and constructed in only 9 months, sprang up in the middle of a traditional rural farming and ranching community, bringing with it great social and demographic change.

With the end of World War II in August 1945, the Plant ceased operation even more abruptly than it had begun. However, this inactivity ended in 1951, when the newly created Atomic Energy Commission reclaimed more than half of the original site as a high explosives fabrication and nuclear weapons assembly facility. From 1951 to 1991, a period defined by the large-scale production of nuclear weapons, Pantex Plant's mission and activities fluctuated according to the cycles of the Cold War, remaining always at the very core of the nation's Cold War nuclear weapons complex. After 1991, the Plant's primary mission shifted to the disassembly of nuclear weapons, and remains so today.

### **A three-year progress overview on historic properties, including highlights and accomplishments**

The cultural resource staff was consulted to ensure procedures were followed for proper protection of historical facilities. All Plant projects were reviewed and identified through the National Environmental Policy Act (NEPA) process. In the cultural resource review, the properties and archeological sites being impacted were identified and then compared to the Programmatic Agreement to determine if documentation or additional consultations would be required. Usually, properties and archeological sites were informally surveyed before and after a project, due to the NEPA process, identifying any adverse effects that might impact properties or sites. If properties or activities involved were exempted under the Programmatic Agreement, the project was approved as is.

Historical records were identified and retention schedules were finalized with the National Archives. Preservation and storage decisions for different media were made.

Pantex continued evaluating artifacts associated with Cold War weapons processes for its historic collection. Decisions were whether to photo document or preserve.

The history of Pantex was updated for the Pantex website. The World War II Pantexans were added to the website.

A B53 trainer was relocated to the patio area of Building 16-12, as a continuation of the Visitor Center. This added to the weapons that were already displayed in that area. This relocation fulfills

one of the preservation activity requirements under the Pantex Programmatic Agreement signed in 2004.

Monitoring of archeology sites was done periodically. Additional fragments in the 1996 bison bone site were discovered, noted, and photographed.

Not long after the 2011 Preserve America report was submitted, prehistoric bones were uncovered on October 5, 2011 by the Corps of Engineers while they were overseeing the digging of a deep foundation for the new High Explosive Pressing Facility. As required of all construction projects, the Cultural Resource staff was notified when the ground disturbing activities uncovered the bones. A Professor of Geology, of the Life, Earth and Environmental Science Department from West Texas A&M University determined the bones were a significant paleontology discovery. At that point, B&W Pantex and the Pantex Site Office decided that the bones should be removed as soon as possible and all material would be documented and archived at the Plant in accordance with 36 CFR 79. The bones were later identified as being that of *Platygonus*, a genus of peccary believed to have become extinct during the Pleistocene period, at least 11,000 years ago. The excavated bones were sent to West Texas A&M University and will remain there for further study. See photos below.





There were approximately ninety outreach opportunities during the past three years at Pantex. These included tours of the Visitor Center and the historic railcar exhibit, Pantex history briefings for visitors and a local high school, windshield tours of the site, and providing historical information and for the celebration of Pantex's 70<sup>th</sup> anniversary. The Plant historian was invited to speak on Pantex's history and Cultural Resource Program at Sandia National Laboratory.

Sandia National Laboratory started converting historical videos to digital technology. The Pantex Records group is managing this initiative.

In June 2014, the National Museum of Nuclear Science and History (Sandia – Albuquerque) received the "Honest John" weapon from Pantex on a loan agreement. This weapon did not originate from Pantex.

The Panhandle Plains Museum in Canyon, Texas created an exhibit, the World War II Gems of the Plains exhibit which features World War II Pantex women. A respirator and metal badge frame from Pantex were loaned to the museum.

### **A brief projection of activities and accomplishments for the next three years.**

Cultural resource staff will be consulted to ensure procedures are followed for proper protection of historical facilities. All plant projects will be reviewed and identified through the NEPA process. In the cultural resource review, the properties and archeological sites being impacted will be identified and then compared to the Programmatic Agreement to determine if documentation or additional

consultations will be required. Pantex will continue to evaluate artifacts associated with Cold War weapons processes for their historic collection.

Sandia National Laboratory will continue to convert historical videos to digital.

Photographs will be taken of historic equipment to fulfill documentation requirements prior to decontamination and demolition of the equipment.

A B53 trainer, originating from Pantex, was painted in 2014 and will be formally loaned (until July 2017) to the Pampa Freedom Museum (Pampa, Texas) as part of their exhibit.

Historical trailers used by the Office of Secure Transportation for the transport of weapons in the early 1980's may be displayed near the historic railcars that Pantex displays.

Monitoring of archeology sites will continue periodically through the years. Additional discoveries will be noted and photographed.

Pending funding, the Visitor Center needs computer updates, and the Plant's Access Control area will be redeveloped to coordinate with the entry design. A design for the Access Control area had been previously approved but funding was withdrawn.

Cultural Resource staff will meet the Secretary of Interior's Standards for historic preservation. This includes requiring all Plant personnel to complete annual birth month environmental training which incorporates the cultural resources management program (CRMP). NEPA Training for Project Managers touches on regulations pertaining to the CRMP. Historical briefings have been incorporated into the new hire training schedule.

## Portsmouth Gaseous Diffusion Plant

### Introduction to the history, purpose, and work activities at the site

This report was prepared to satisfy the U.S. Department of Energy (DOE) reporting requirements under Executive Order 13287, Preserve America, 2014 Progress Report. Between 2011 and 2014, DOE completed numerous projects aimed at fulfilling their responsibilities under Sections 110 and 106 of the National Historic Preservation Act (NHPA). These projects and associated documentation identify and assess cultural resources (archaeological and architectural) located within the facility.

Site activities at the Portsmouth Gaseous Diffusion Plant (PORTS) generally fall into one of the following categories:

- Full-scale operations at PORTS are no longer conducted. There are ongoing maintenance actions and some operations of specific site facilities performed on an ongoing basis. These actions take place with Section 106 review, the majority of which have been previously determined to have no potential to effect historic properties.
- DOE is pursuing several key regulatory decisions to support proposed cleanup work at PORTS including the decontamination and decommissioning of site facilities, site-wide waste disposition activities, and remediation of soil and groundwater. These regulatory decisions are being pursued under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and the NHPA review is taking place under CERCLA.

### Progress on historic properties and highlights and accomplishments 2011 - 2014

- **Interaction with Ohio Historic Preservation Office (OHPO) and Native American Tribal Nations:**
  - Meetings and teleconferences are held with the OHPO and Native American Tribal Nations on a regular basis regarding proposed site undertakings, in particular the proposed clean-up and waste disposition activities. .
  - DOE traveled to Oklahoma in November of 2012 to meet with the Eastern Shawnee Tribe of Oklahoma, the Shawnee Tribe, the Absentee-Shawnee Tribe of Indians of Oklahoma, and the Seneca-Cayuga Tribe of Oklahoma to discuss the scope and schedule of planned cleanup activities at PORTS.
  - The Cultural Preservation Directors' for the Absentee-Shawnee Tribe of Indians of Oklahoma and the Eastern Shawnee Tribe of Oklahoma, respectively, visited PORTS in May of 2013 to further discuss the scope and schedule of proposed cleanup activities at PORTS and their potential affects to historic properties.
  - There are ongoing meetings with the OHPO, Native American Tribes, and Consulting Parties to review proposed undertakings.
  - DOE continues to provide public participation and educational outreach opportunities and regularly engages with the public on matters pertaining to historic properties.

- In January of 2012, DOE released the PORTS Virtual Museum to the public. The Virtual Museum is an on-line resource on the history and operations of the PORTS facility and includes extensive information on the site, oral histories and archival and recent photographs.
- **Evaluation of Architectural Resources at PORTS:**
  - The architectural resources at PORTS were thoroughly inventoried in 1996-1997 with a reevaluation in 2006. A total of 196 architectural buildings or structures were evaluated. Thirty four properties were identified as historic, with ties to the Cold War-era mission of the site.
- **Archaeological Investigations at PORTS:**
  - In 2011 and 2012, DOE completed numerous cultural resource investigations over 2,500 acres of the PORTS Site and have developed associated technical reports. These studies have documented project findings, assessed the National Register of Historic Places (NRHP) eligibility of identified cultural resources, and provided recommendations for further work. Cultural resources identified include an array of prehistoric and historic-era archaeological sites, as well as many historic-era and DOE-era structures. Specifically, the resources identified include 99 archaeological sites assigned formal trinomial state site numbers.
  - In 2012, a Phase II archaeological investigation was conducted to determine the NRHP eligibility of sites identified in the Phase I investigations. Four prehistoric sites on PORTS property are considered eligible for the NRHP.
  - Planning is ongoing for Phase III investigation for one archaeological site at PORTS that may be potentially impacted by proposed cleanup activities.
  - DOE issued two reports in 2011, focusing on the possible presence of prehistoric earthworks or mounds on the PORTS facility and in the surrounding area. Although no evidence of earthworks and mounds were found on the PORTS property, there are numerous sites in the region around the site.
  - In January 2013, a geomorphological investigation was conducted along the Little Beaver Creek on the PORTS Site to determine if the buried surfaces had the potential to contain archaeological resources. No sites or landforms of significance were identified.

## Projection of activities and accomplishments for the next three years.

- DOE is planning to initiate and complete a Phase III archaeological survey (i.e., data recovery) for one archaeological site at PORTS that has been determined to be National Register-eligible and would be adversely affected by a waste disposition activity that is presently being evaluated (but for which a decision is pending). Both the SHPO and representatives from two Native American Tribal Nations have visited the potential Phase III site and have provided input on the planned data recovery work.
- DOE has initiated and will complete work on Historic American Engineering Record (HAER) reports for the 34 buildings directly tied to the historic Cold War-era mission of the site.
- DOE has initiated and will complete a Historic Context Report that puts the PORTS reservation into perspective within the DOE's gaseous diffusion and Cold War-era activities.
- Complete development of a Geographic Information System Atlas to support understanding of operations and infrastructure at PORTS.

- Complete development of a Comprehensive Summary Report that summarizes all NHPA-related surveys conducted at PORTS (pre-historic, historic-era, and DOE-era). This report will be shared with the public, Native American Tribal Nations, and NHPA Consulting Parties.
- DOE will consider and evaluate the feasibility of recommendations from the Native American Tribal Nations regarding the display of items from PORTS, In particular those of prehistoric significance.
- DOE will continue to update and enhance the PORTS Virtual Museum.
- DOE will continue to collect and evaluate items of historic interest from selected .PORTS facilities and seek opportunities to share those items with the public for interpretative and educational purposes.
- DOE will continue to seek ways to share information about the history of PORTS and its mission.
- DOE will continue to provide public outreach and make NHPA-related presentations to local schools and other interested parties.

# Richland Operations Office, Hanford Site

To meet the requirements of Section 3 of Executive Order 13287, "Preserve America" an initial summary report in 2004 and three subsequent status reports in 2005, 2008, and 2011 has been submitted by DOE. This document is intended to meet the requirements for the 2014 status report.

This report contains three sections:

1. A brief introduction on the history, purpose, and work activities at the site
2. A three-year progress overview on historic properties, including highlights and accomplishments
3. A brief projection of activities and accomplishments for the next three years

## **Section 1: A brief introduction on the history, purpose, and work activities at the site**

The archaeological record of the Mid-Columbia Basin bears evidence of more than 10,000 years of human occupation. While there has been continual development in the region, there are still places that remain largely undisturbed. The Hanford site is located within the Southern Plateau region that was occupied by various Native American groups that shared similar social, political and subsistence patterns. Groups in the region include the Wanapum, Yakama, Umatilla, Nez Perce, Walla Walla, Cayuse, Palouse and other neighboring groups.

The Lewis and Clark expedition of 1805 began the Euro-American exploration and settlement of the region. The explorers sought trade items from Native Americans and trade routes were established. Gold miners, livestock producers, and homesteaders soon followed. The Homestead Act of 1862 enabled legal land ownership to those 21 years of age or older who were willing to live on and develop the land. With the development of irrigation networks the Hanford area became a highly productive agricultural area with numerous farms and orchards throughout the irrigated lands.

In 1943 the U.S. government took control of the Hanford area to establish plutonium production facilities for national defense. Production of materials for nuclear weapons remained the main mission of the site until the late 1980s. In 1989, with the Hanford Site no longer producing materials for nuclear weapons the site mission shifted to waste management and environmental cleanup. At the onset of the cleanup mission the focus was to mitigate or resolve immediate hazards such as highly contaminated spent fuel stored in leaking basins. As the cleanup mission has progressed over the last 20 plus years many of the immediate hazards have been resolved and DOE has begun shifting its focus to mitigating long term risks including treatment of contaminated groundwater and the retrieval, treatment, and disposal of remaining waste.

## **Section 2: A three-year progress overview on historic properties, including highlights and accomplishments**

Since the last progress report in 2011 a total of 21 resources have been identified, evaluated and recommended eligible for listing in the National Register of Historic Places (NRHP). With the addition of these 21 properties the Hanford Site contains 64 individually eligible historic properties. In

addition to these sites there are 142 resources that are contributing components to NRHP eligible districts including the Native American/Pre-Contact and Early Settler/Pre-Hanford landscapes. Within the Hanford Site Manhattan Project and Cold War Era Historic District there are 527 contributing properties.

DOE-RL's public access to date has focused almost exclusively on the B Reactor National Historic Landmark, where a preservation and public tour program was created in 2009 and has grown over the years to now service about 10,000 visitors each year. DOE has lowered the age limit at B Reactor from 18 to 12 in order to enable more families to tour the facility together and in order to be able to work with middle schools to offer visits to the reactor. Annual maintenance and improvement activities at the B Reactor are painstakingly coordinated with the State Historic Preservation Office and the National Park Service. The Tri Cities Visitor and Convention Bureau estimates that B Reactor's 10,000 visitors likely bring between \$1.5 and \$2 million to the local economy each year in heritage tourism revenue.



*DOE Deputy Chief of Staff Jonathan Levy, center, and Senior Advisor to the Secretary David Foster, far right, visiting the control room at Hanford's B Reactor. July 2014*

Since the last progress report in 2011, DOE-RL began work on the stabilization and rehabilitation of one of its historic structures, the White Bluffs Bank. The White Bluffs Bank was constructed in 1907 and incorporated in 1909, and has been determined eligible for listing in the National Register of Historic Places (NRHP) as a contributing component to the White Bluffs Historic District. DOE-RL worked with an architectural engineering firm, in

consultation with the Washington SHPO, to outline treatment recommendations, consistent with the Secretary of the Interior's Standards. DOE-RL will continue to work with the architectural/engineering professionals and the SHPO on the development of a rehabilitation plan for the Bank, as part of Phase II of the project. The goal of the rehabilitation efforts is to restore the bank using materials and supplies appropriate for its period of significance (or an approved substitute). The intent is to include the White Bluffs Bank building in public tours of the Hanford Site to educate the community about the importance of the pre-Hanford landscape. Once the bank is restored the interior will be accessible to tour groups.



*Interior of the First Bank of White Bluffs, circa 1922*  
[Source not known]



*Main entry at the northwest corner; September 2012.*

### **Section 3: A brief projection of activities and accomplishments for the next three years**

Over the next three years DOE-RL will be putting a considerable effort into both the rehabilitation of pre-Manhattan Project structures such as the Allard Pumphouse and Hanford High School; and planning for controlled public and Tribal access to cleaned up areas in the Columbia River Corridor. This new, controlled public access may support interpretation of one or more of the pre-Manhattan Project facilities on a more regular basis. In the nearer term, once rehabilitated, DOE-RL would like to add them to the escorted B Reactor tours that will continue into the future. The goal is to increase accessibility and interpretive value of the Hanford Site's historic properties to educate the community about the importance of the historic resources on the site.

## Strategic Petroleum Reserve

The creation of the Strategic Petroleum Reserve (SPR) was mandated by Congress as part of the Energy Policy and Conservation Act on December 22, 1975. The objective of the SPR is to provide the United States with petroleum should a supply disruption occur. At its inception, the Department of Energy (DOE) (then the Federal Energy Administration [FEA]) evaluated the potential impacts of implementation of the SPR mission at the proposed sites as well as the potential impacts of its mission as a whole. The evaluations undertaken by the FEA resulted in a programmatic Environmental Impact Statement (EIS) (FES-76-2) that addressed the potential environmental impacts of the SPR as a Federal program. This EIS identified 32 potential crude oil storage sites throughout the contiguous United States. This number was narrowed when implementation of the Early Storage Reserve (ESR) program was considered. Consideration of timely implementation of the ESR left eight potential sites that provided for the storage of oil underground in salt caverns.

Of these, five sites were chosen based on their immediate utility for the ESR and the ease with which they could be used or developed for permanent storage. These sites were then evaluated specifically for the purpose and needs of the ESR and the SPR, the potential impacts of the initial implementation of the SPR program, and the long-term operation of these sites relative to the SPR's mission. The initial site-specific evaluations for these sites resulted in five draft EISs (DES 76-4 through DES 76-8) that were subsequently finalized (FES 76/77-4 through FES 76/77-8) and have, since the actual implementation of the program, been amended/superseded by additional EISs. Subsequent to the development of the initial sites, major changes occurred on the SPR, including the expansion of the SPR with the development of the Big Hill (BH) site and accompanying Texoma Group pipeline distribution enhancements [BH to Unocal Nederland and tie-in to the Texaco pipeline system from BH and West Hackberry (WH)], the development and subsequent leasing of an oil distribution river terminal at St. James (SJ) and accompanying pipelines to Capline Terminal and LOCAP, the construction and operation of a pipeline by Shell Pipe Line Corporation (Shell) connecting the Bayou Choctaw (BC) facility to the Placid Refinery, the construction and operation of a pipeline from the Bryan Mound (BM) facility to the Arco Terminal, the decommissioning of the Sulphur Mines (SM) and Weeks Island (WI) sites, the sale of the accompanying WI pipeline (WI to SJ) for use, the sale of the accompanying SM pipelines for salvage, the upgrade of all sites through the Life Extension (LE) project and the implementation of two oil degasification (degas) projects. These major activities have been evaluated in more recent National Environmental Policy Act (NEPA) documents.

The crude oil currently stored by the SPR in salt caverns along the Louisiana (LA) and Texas (TX) Gulf Coast serves to mitigate the effects of a significant oil supply interruption. Due to the location of these reserves, oil can be distributed through interstate pipelines to refineries or transported via barge to more remote refineries. Currently, the SPR consists of four Gulf Coast underground salt dome oil storage facilities in LA and TX and a project management facility in LA. The SPR also operates a warehouse facility contained within the Stennis Space Center (Stennis).

There are four active storage sites still under the control of DOE. The WI site was decommissioned 1995 and was sold in 2008. However, SJ, which is still owned by DOE, is leased to other operators.

DOE also occupies facilities which are leased from third parties such as SPR Headquarters in New Orleans and the Stennis warehouse.

The SPR's facilities have been evaluated and determined to be not eligible for inclusion in the National Register. According to the Facility Information Management System's (FIMS) dictionary, the SPR currently has the status of "Evaluated, Not Historic" and is described in the definition below from FIMS:

"Evaluated, Not Historic" – The property has been evaluated according to the criteria in 36CFR60, and DOE has determined that the property is not eligible for inclusion in the National Register, and the SHPO (or THPO) has concurred. Properties can be evaluated under either a site-wide Section 110 related effort or under a project driven Section 106 evaluation.

Since the SPR does not have any historic properties, there are no activities or accomplishments to report.

The SPR does not have any historic properties; therefore, there are no projected activities or accomplishments planned for the next three years pertaining to the preservation of historic properties.

# Savannah River Site

## Introduction

The DOE's Savannah River Site (SRS) is located in parts of Aiken, Barnwell, and Allendale counties in South Carolina. This 198,400-acre site is bordered on the southwest by the Savannah River and is located approximately 25 miles southeast of Augusta, Georgia.

From 1953 through 1992, the SRS produced nuclear materials –primarily plutonium and tritium – for the U.S. Department of Defense to support the US nuclear deterrent. These nuclear materials were formed by irradiating special targets in nuclear reactors and recovering desired products by chemical separation processes. With the end of the Cold War in the early 1990s, SRS greatly reduced the production of nuclear materials and shifted to nuclear waste stabilization, environmental restoration, and related site clean-up missions. Today, SRS remains focused on reducing the environmental legacy of past nuclear materials production, accelerating the deployment of nuclear energy and promoting regional energy sustainability, and supporting ongoing tritium processing and an array of nuclear nonproliferation programs.

## Progress Review

During the past three years, the DOE Savannah River Operations Office (DOE-SR) has successfully managed both its archaeological and its Cold War Era structures in full compliance with programmatic memorandums of agreement with the South Carolina State Historic Preservation Office, Advisory Council on Historic Preservation, and other DOE stakeholder organizations. SRS archaeological sites, historic structures, and cultural resource artifacts have been identified and protected; compliance-based research was completed; and stakeholder education and outreach efforts have continued. Two notable highlights are listed below:

- In July of 2012, DOE-SR opened a new curation facility at SRS. This 27,000 square-foot facility is a repurposed warehouse/training building that now houses artifacts from both SRS Cold War Era structures and SRS archaeological sites. The SRS Curation Facility meets all requirements of the *Curation of Federally-Owned and Administered Archaeological Collections* (36 CFR 79) and also fulfills DOE cultural resources management commitments previously made to the South Carolina State Historic Preservation Office.
- The DOE and the South Carolina Institute of Archaeology and Anthropology (SCIAA), Savannah River Archaeological Research Program (SRARP) have a long standing cooperative agreement for managing cultural resources at the Savannah River Site. This includes a public outreach component designed to identify and provide an interpretive context to cultural sites and artifacts. In this capacity, SRARP produced a documentary DVD based on pottery unearthed at the Savannah River Site. *Discovering Dave: Spirit Captured in Clay*, focuses on an enslaved bondsman named Dave from the Edgefield District of South Carolina. In the early and mid-1800's Edgefield was a major production center for stoneware. During his long life it is estimated that Dave created over one hundred thousand pots but to date only about 170 are marked with his name, date, verse, inscription, or poem. One of the major points of the film is Dave's openness to write on the wares he created during a time when slaves were not supposed to be taught to read or write. The film also discusses the artifact's

discovery, and its use as an aid to discuss the importance of archaeology, history, and relating Dave's story for public education. This award winning DVD has been featured in recent regional, national, and international film festivals and has also been made available for educational use.

## **Projected Activities**

Over the next three years, DOE-SR plans to maintain its existing cultural resources agreements and contracts to meet its cultural resources management responsibilities. This will be done in conjunction with appropriate Federal, state, and local stakeholders. DOE-SR also plans to oversee the complete the transfer of all SRS historic and archaeological artifacts into the new SRS Curation Facility. In the near future, DOE-SR also plans to finalize an agreement with the Savannah River Site Heritage Foundation to allow escorted public tours of the historic Ellenton town site. Ellenton was the largest of several communities that were vacated or relocated to create the Savannah River Plant in the early 1950's.

## Southwestern Power Administration

The Southwestern Power Administration (Southwestern), an agency of the Department of Energy (DOE), is a Power Marketing Administration (PMA) that sells hydropower, produced at 24 United States Army Corps of Engineers (COE) multipurpose dams, in a six state marketing region. Along with this main activity, Southwestern operates and maintains 1,389 miles of electrical transmission lines throughout Arkansas, Missouri, and Oklahoma and numerous substations, communication sites, and several maintenance facilities.

### The Beginning, 1935-1943

The early 1930s set the stage for the creation of Southwestern. Economic depression and major droughts placed tremendous stress on the nation and the six states that Southwestern was to later serve. President Roosevelt's New Deal led to numerous programs that put people back to work and gave attention to infrastructure problems within rural areas. The New Deal programs led to the federal government having stronger control over much of the infrastructure of the country, including the control of agricultural production, the regulation of investment companies, the control of major waterways, and the control of electrical power generation. Early New Deal programs included the Works Projects Administration (WPA), the Tennessee Valley Authority (TVA), and the Rural Electric Authority (REA). Additionally, the US Army Corps of Engineers was tasked to study the major river valley, the Red River and the Arkansas River, for opportunities to place dams, generate hydropower, control flooding, and provide recreational areas.

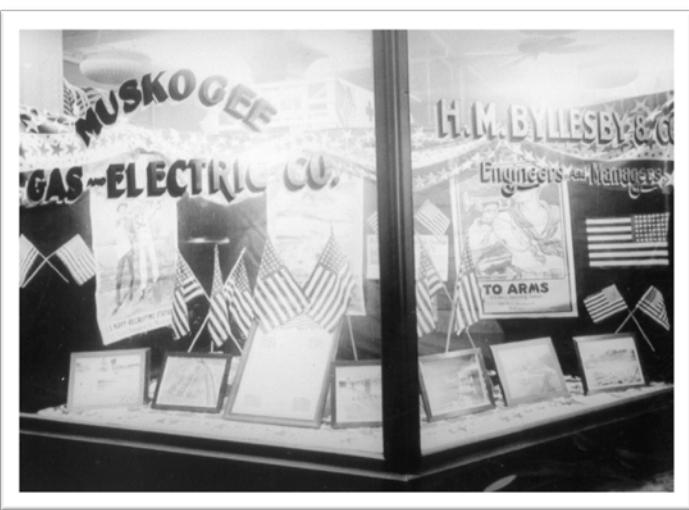


Working within this broad federal plan, the state of Oklahoma created the Grand River Dam Authority (GRDA) in April 1935 and authorized construction of Pensacola Dam. The WPA and President Roosevelt approved funding for the dam and it was completed in March 1940. In November 1941, with the threat of World War II looming on the horizon, the federal government, via the Federal Power Act, took control of Pensacola Dam from the state of Oklahoma. All the nation's resources, including electrical generation, were soon directed towards the war

effort. The Federal Works Administration (FWA, previously the WPA) took over completion of Pensacola Dam and the GRDA.

At this point in the evolution of federal hydropower, a restructuring was needed. The Department of the Interior (DOI) became the primary department outside of the TVA responsible for marketing federal hydropower. Locally, in July 1943, DOI was assigned responsibility to market power from Denison Dam. On August 30, 1943 the FWA's hydropower marketing responsibilities were transferred to DOI. On September 1, 1943 the Secretary of the Interior created Southwestern and gave authority to market power from three generating dams, Pensacola Dam, Norfork Dam, and Denison Dam. Formal congressional authority was still needed and Section 5 of the Flood Control Act of December 22, 1944 provided it. Southwestern controlled the assets and operations of GRDA until September 1, 1946 when that portion of the agency was returned to the state of Oklahoma.

### Integration: The first ten years, 1943-1953



The first ten years of Southwestern's history were frequently controversial. Most of the power grids across the country were not integrated. Private utilities controlled most power generation and distribution across the country. The creation of federal agencies to market power from federal plants was seen as a threat to the private utilities, who lobbied heavily against the concept. The intent of Southwestern and the other PMA's was to create an integrated power grid

across the nation and to provide low cost power to rural areas. Specifically, due to the Preference Clause in the authorizing legislation, Southwestern was to sell power to United States facilities and agencies, to rural cooperatives financed by REA, and to private cooperatives. In 1948, President Truman championed a major expansion of public power as part of his Fair Deal program. However, the opposition of private power companies, discord among agencies and individuals in the executive branch, and a split in the Democratic Party eventually compromised these plans.

In the midst of the political wars around rural electrification subsidized by the federal government, Southwestern continued to expand and build out its transmission system. In 1947 a funding bill was passed providing 7.5 million dollars to build the main trunk line between Denison and Norfork dams. Between 1947 and 1953 various segments of this line began construction, with a very long portion completed in late 1949. Additionally, more hydropower generating dams were added to the system as they were completed and connections between the main trunk and these new dams were built.

## Finishing the build-out, 1953-1969

During the late 1950s and 1960s Southwestern grew to its largest status. Rural electrification had become commonplace and was expected in those areas that had not yet received power. Private utilities that had once feared federal competition now faced the local electrical cooperatives as competitors. In addition, more regulation was in place to control rates and to ensure regular supplies of power.



By the end of 1969, Southwestern's transmission system was ninety percent complete, the agency's number of employees was the highest it would ever be, and the era of construction was coming to a close. More miles of transmission line were added in the 1970s, but the building phase was slowing down. Several new dams were also added to the system and in several cases Southwestern's role was only that of marketing the power and not transmission.

## Maintenance and upgrade mode 1970-present



Since 1970, Southwestern has been more in a maintenance and upgrade mode than a construction mode. Construction of new lines continued for a few years but at a slower rate that eventually ceased. Many other changes, however, transformed the power industry. In the 1970s, difficult economic and regulatory mandates occurred and the power industry found itself challenged by

the prospects of deregulation and restructuring. Technological stagnation in terms of power generation and transmission also set in due to the long and successful history of managing conventional technologies. Industry wide, the national power grid was aging and it was clear that upgrades were needed. In the midst of these restructurings, DOE was created and DOI transferred its PMA's to DOE in 1977. Throughout the 1980s and 1990s, Southwestern upgraded its aged transmission lines and facilities, often to higher voltages to meet increased power demand. Along with these upgrades came better communications and dispatching systems to monitor and administer the power grid. A major communications system was in operation by the end of 1987 with the majority of communication facilities undergoing rehabilitation

presently. Today, Southwestern continues in the maintenance and upgrade mode to meet reliability standards and customer demand.

Southwestern abides by obligations under Section 110 and Section 106, of the National Historic Preservation Act (NHPA) as amended (16 USC 470f) to assess the agencies' potential impacts to historic properties. During 2004 and 2005, using these guidelines, Southwestern entered into three separate state-based regional (Oklahoma, Arkansas, and Missouri) Programmatic Agreements (PA) with the Advisory Council for Historic Preservation (AChP) and State Historic Preservation Offices (SHPO) regarding Southwestern's maintenance activities and their compliance pursuant to Section 106. These PAs continue to remain in force and have proved beneficial in protecting the interests of Native Americans, historic properties, and cultural resources or artifacts.



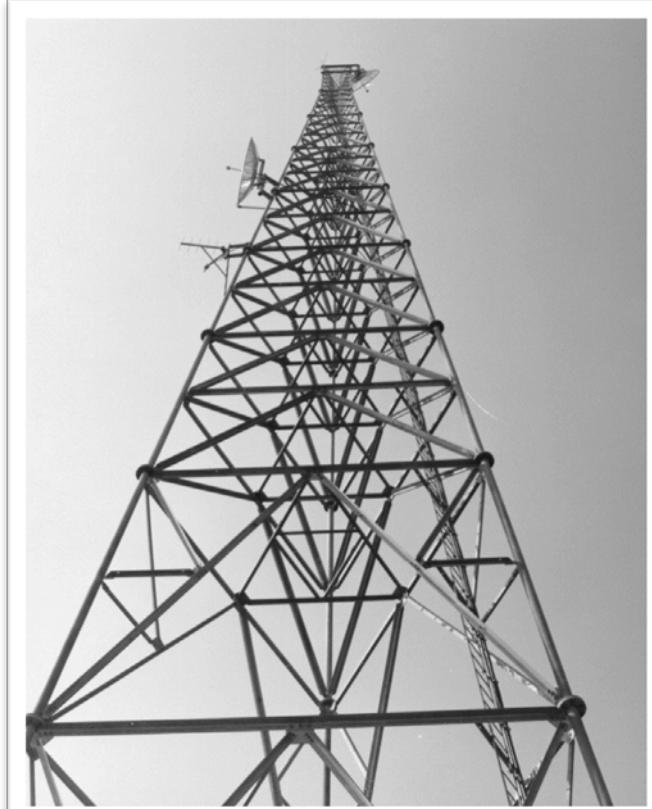
Stipulations for the Missouri and Oklahoma PA required Southwestern to conduct a Section 110 evaluation. During 2006, Southwestern conducted Section 110 assessments, which included evaluation of radio tower placements, substations, switchyards, fiber communications stations, and maintenance facilities that were located within the state of Oklahoma, Arkansas, and Missouri. That evaluation did not include intensive field investigations of transmission line properties. There were no listed or potentially eligible historical properties identified during this evaluation, however, for some Missouri facilities, deep disturbance archeological monitoring was recommended during future soil disturbing construction activities. In addition, the study in Arkansas revealed the potential for the brick structure at the Van Buren substation to become eligible for inclusion in the NRHP when it reaches 50 years of age in 2018. Other facilities could become

eligible for inclusion in the NRHP, in the future, for the association with rural electrification efforts in Arkansas.

Additionally, a second stipulation of the Missouri and Arkansas PA, was to complete a Class I Heritage Inventory to serve as Southwestern's database of historic properties and other cultural resources that are located within one-half miles of Southwestern's transmission lines, rights-of-way,

substations, communication sites, maintenance facilities, and ancillary features. As of 2012, there were 1,314 archaeological sites and historic properties, unrelated to the theme of power, within the study area. The majority of these cultural resources are of undetermined NRHP eligibility, and 107 of the sites are potentially eligible or listed, and 126 are not eligible for inclusion within the NRHP. The Class I Heritage Inventory is updated every three years and was last updated in 2012. This inventory helps provide Southwestern with a comprehensive picture of the cultural resources on lands owned and administered by Southwestern and serves as the foundation of a proactive cultural resource management program that ensures compliance with all NHPA regulations.

The National Telecommunications and Information Administration (NTIA) of the Department of Commerce regulate Southwestern's communications sites. Southwestern's communications towers are exempt from the Federal Communications Commission (FCC) application and permitting processes, and not included within the FCC Nationwide Programmatic Agreements. They are, however, subject to Section 110, Section 106, and NHPA requirements under DOE's 10 CFR Part 1021 NEPA Implementing Procedures.



None of the 24 dams currently associated with Southwestern are listed on the NRHP. One other dam, Pensacola, was at one time associated with Southwestern and has been listed on the NRHP since 2003. The various COE districts that manage these 24 dams are responsible for the related NHPA compliance process.

During 2014 and 2015, Southwestern will collaborate with the SHPOs, ACHP,

and tribes to draft and execute a new multi-state PA which will replace Southwestern's current Oklahoma (expires August 2014), Missouri, and Oklahoma PAs (both due for review in April 2014, and then later expire April 2015). In addition, Southwestern's Class I Heritage Inventory is scheduled for an update in 2015.