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

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Acronym List

ACHP	Advisory Council on Historic Preservation
AEC	Atomic Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRMP	Cultural Resource Management Plan
D&D	Decontamination & Decommissioning
EIS	Environmental Impact Statement
FIMS	Facilities Information Management System
GIS	Geographic Information System
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Report
HALS	Historic American Landscape Survey
MAPR	Manhattan National Historical Park
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PA	Programmatic Agreement
NPS	National Park Service
NRHP	National Register of Historic Places
SHPO	State Historic Preservation Officer
SSP	Site Sustainability Plans
THPO	Tribal Historic Preservation Officer

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, October 2011, and September 2014 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 (NHPA).

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 September 2014 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 Eric Boyle, the Department's Chief Historian and Federal Preservation Officer, at 202-586-5241.

Part I. Background and Overview

U.S. Department of Energy

The Department of Energy (DOE) was established 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 20th 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 National Security Site, formerly known as the Nevada Test Site (Cold War), and the nuclear weapons rail cars at the Pantex Plant (Cold War).

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 National Security Site.

As the Federal Government's third largest steward of land, DOE 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 and Idaho National Laboratory archeological sites and the Nevada Test Site and Bonneville Power Administration

petroglyphs. Idaho National Laboratory (INL) has plans to employ research designs outlining sampling and analysis of artifacts and paleontological remains to reveal additional information regarding prehistoric occupation and climate change as reflected in the isotopic signatures preserved in the bones of large game recovered from excavation. Specific future projects will encompass: an updated predictive model; archaeo-climate study, combing isotopic data with x-ray florescence (XRF) based volcanic glass archaeo-tool material sourcing; development of archaeological contexts for Native American archaeological resources; development of historic contexts for pre-1942 historic archaeological resources; and continued research on Goodale's Cutoff. In addition, agency and university collaborations, focusing on the untapped archaeological potential present at INL, have been identified. Agency collaborations include Bureau of Land Management (BLM) and Forest Service, and the University of Utah.

The Department is also 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 has formal and informal relationships with museums located at or near DOE field sites. While a formal relationship exists with the American Museum of Science and Energy, Oak Ridge, Tennessee, informal relationships exist with the National Museum of Nuclear Science and History (formerly the National Atomic Museum), Albuquerque, New Mexico; Bradbury Science Museum, Los Alamos, New Mexico; the Hanford Reach Interpretive Center, Richland, Washington; and the National Atomic Testing Museum, Las Vegas, Nevada. Each museum is unique, due to particular local needs and varying funding and management mechanisms. Some sites also 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.

DOE visitor centers are also located at former weapons complex sites that were closed, went through remedial action and environmental restoration, and then 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. The Fernald Preserve, Ohio, site is the location of a former uranium processing facility that was cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Fernald Preserve Visitors Center is a 10,000-square-foot Leadership in Energy & Environmental Design (LEED) platinum-certified, green building that was converted from a former warehouse on the site. The Visitors Center celebrates the rich and varied history of the Fernald site. Information on the site's natural, Native American, settlement and farming, uranium production, and environmental cleanup eras, as well as the recent ecological restoration and legacy management mission, is presented through a series of exhibits. Admission to the Visitors Center is free, and meeting spaces at the facility are also available for no charge to local organizations. The Weldon Spring Site in Missouri is the location of a former uranium materials plant. The Weldon Spring Site Interpretive Center represents a window to the past and the Office of Legacy Management's commitment to the future through long-term surveillance and maintenance of the Weldon Spring Site and a strong community partnership. The Center houses exhibits that present a photographic history of the Weldon Spring area, the towns that once occupied this area, and the site's historical contributions. It also details progression of the site cleanup process and construction of the 45-acre disposal cell and communicates the legacy of the site to current and future generations. Educational and outreach programs, tours, research opportunities, and volunteer opportunities are provided by the Center.

The Department opened a headquarters visitor center in the lobby of the Forrestal Building at a ceremony marking DOE's 30th 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.

Further Developing a Department-Wide Program

Due in large part to a history of compartmentalization and decentralization throughout DOE's history, substantial power and authority throughout the DOE complex has been allocated to field offices, which means DOE field sites have 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 2014 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 a wide range of resources being applied to historic preservation, especially with the Manhattan Project National Historical

Park. The upgrade and advancement of preservation efforts continues to bring greater visibility, enhanced recognition of the importance of the Department's historic assets, and genuine progress toward preservation and interpretation.

DOE sites take a variety of steps to manage historic assets, including: preparing and implementing annual Site Sustainability Plans (SSP); conducting Phase I, Phase II and Phase III archaeological surveys; utilizing Geographic Information System (GIS) for construction and excavation projects; documenting properties through Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), or Historic American Landscape Survey (HALS) reports; conducting appropriate cultural resource inventory work or other technical studies of unevaluated buildings and structures of sufficient age to merit evaluation; and maintaining accurate historical status of real property assets in the Facilities Information Management System (FIMS), using Federal Real Property Profile (FRPP) definitions.

Several hundred Section 106 reviews for projects have been undertaken in the past three years. Just at the Idaho National Laboratory, from FY 2014 through the beginning of August in FY 2017, a total of 300 Section 106 reviews for projects have been conducted, including 120 reviews for archaeological properties and 180 for historic architectural properties.

Highlighted Accomplishments and Challenges

The establishment of the Manhattan National Historical Park (MAPR) on November 10, 2015 capped more than a decade of work and launched a new partnership between the DOE and the Department of the Interior's National Park Service. As the successor agency to the Manhattan Engineer District, DOE owns and manages the federal properties at most of the major Manhattan NHP sites, including Oak Ridge, Tennessee; Hanford, Washington; and Los Alamos, New Mexico.

The MAPR sites at Oak Ridge include: X-10 Graphite Reactor National Historic Landmark, a pilot nuclear reactor that produced small quantities of plutonium (part of Oak Ridge National Laboratory); the 9731 Pilot Plant and the Beta calutrons in Building 9204-3 at Y-12 National Security Complex (Y-12), that housed the electromagnetic separation process for uranium enrichment; and the K-25 Building site, where gaseous diffusion uranium enrichment technology was pioneered. Highlights at Oak Ridge include the following:

- Y-12 unveiled an introductory film to educate visitors about the history of the site since public access is limited. A virtual tour of the two historic buildings is in the planning stages.
- Expansion of the Oak Ridge Reservation access for park interpretive events has included the Secrecy, Security, and Spies education program at the DOE Historical Gatehouses; bike tours on DOE greenways; and special tours for Girl Scouts and Girls, Inc.
- Hundreds of people participated in public tours of Buildings 9731 and 9204-3 during the Oak Ridge Celebration and during the Secret City Festival.
- DOE expanded the availability of the public tour program for the Oak Ridge facilities. In 2016, more than 3,500 people took these tours, which were consistently filled to capacity.

- NPS and DOE collaborated on a new exhibit at Knoxville's McGhee Tyson Airport. The Tennessee National Parks Exhibit opened in April 2016, highlighting all of the national parks in Tennessee, including MAPR.

- The K-25 Virtual Museum was completed and launched on November 10, 2015 in conjunction with the signing of the Memorandum of Agreement (MOA) between DOE and the U.S. Department of Interior, formally establishing the Manhattan Project National Historic Park. It can be viewed online at http://www.k-25virtualmuseum.org/.

- Per a subsequent 2012 Memorandum of Agreement, conceptual design documents for the K-25 History Center, Equipment Building, and Viewing Tower were submitted to the consulting parties in January 2015 for review and comment. A segregation of the K-25 artifacts was begun in July 2017. Of the more than 600 artifacts collected, the museum professionals have chosen approximately 260 for display in the History Center. These artifacts are being separated from the others in preparation for a pre-bid meeting of exhibit fabricators and installation companies that will be preparing the artifacts for display in the History Center.

The MAPR sites at Hanford include: the B Reactor National Historic Landmark, which produced the fuel for the Trinity and "Fat Man" plutonium bombs; Hanford High School; the Hanford Construction Camp Historic District; Bruggemann's Agricultural Warehouse Complex; and White Bluffs Bank and Hanford Irrigation District Pump House, which together provide a glimpse into the history of the Hanford area before the arrival of the Manhattan Project. Hanford park facilities are now open to the general public, with approximately 13,000 visitors to the site in 2016. Highlights at Hanford include:

- Eliminating the age requirement for all park facilities and increasing tour seats by 40 percent to 14,000.

- Working with partners to enable recreational opportunities inside the park for the first time, including a 20-mile bike ride co-sponsored by REI.

- Piloting an agreement with a riverboat cruise company to bring its own buses to B Reactor and hire Hanford trained guides, resulting in more visitors at no government cost.

- About 400 people came to hear two concerts by the Mid-Columbia Mastersingers when they performed the first-ever full scale choral concert inside a decommissioned nuclear reactor.

- In 2017, DOE completed the rehabilitation of the historic White Bluffs Bank, one of the four pre-WWII facilities included in the Hanford Unit of the Manhattan Project National Historical Park. The bank, built around 1907, was in extreme disrepair and in danger of collapse. DOE and its engineering and construction contractors worked closely with the National Park Service, the Washington State Department of Archaeology and Historic Preservation, area tribes, and local stakeholders to implement a solution that preserved the building for future generations and retained many of its historic features, materials, and finishes.

- In 2015, DOE, through its Hanford contractor, partnered with Washington State University Tri Cities (WSU-TC) for the storage and curation of Hanford's "Manhattan Project and Cold

War Collection" of artifacts, photographs, archive material, and ephemera. Moving the federal collection off the Hanford Site and into WSU-TC's storage facilities enabled DOE to bring the collection into compliant storage conditions and will result in a searchable electronic catalog of the collection online for the first time. As part of its partnership agreement, WSU-TC loans Hanford artifacts to museums, conducts research and education projects on the collection, and is making the collection available to the public for the very first time.

The Los Alamos MAPR sites currently include: the Gun Site Facilities, which includes three bunkered buildings and a portable guard shack, buildings that were associated with the design of the "Little Boy" bomb; the V-Site Facilities, which were used by laboratory personnel to assemble components of the Trinity device; and the Pajarito Site, including the Slotin Building, Battleship Control Building, and the Pond Cabin, all buildings that were used during the World War II either for plutonium chemistry research or later became the main site for critical assembly work at Los Alamos afterwards. Highlights at Los Alamos include:

- The Los Alamos community celebrated the grand opening of the Manhattan Project NHP with presentations by NPS staff at Fuller Lodge and at the Los Alamos ScienceFest in 2015.

- Los Alamos National Laboratory (LANL) published an iPhone/Android app that uses augmented reality and other gaming features to provide users a way to experience and explore the facilities as they were during the Manhattan Project era.

- LANL staff supported the development of an interagency agreement between the Los Alamos Field Office and the National Park Service for preservation assistance at LANL. Key accomplishments during FY 2017 include the completion of condition assessments and treatment plans for two buildings at TA-18, the Slotin Building (TA-18-1) and the Pond Cabin (TA-18-29), where rehabilitation is planned during late FY 2017 and early FY 2018.

- Rehabilitation work has been ongoing and key accomplishments include the installation of a metal shelter to protect the concrete exterior of the Battleship Bunker (TA-18-2) at Pajarito Site and urgent repairs to the roofs of the Slotin Building (TA-18-1) and Casa 1 (TA-18-23) at Pajarito Site. Other urgent stabilization work was conducted and is ongoing at V-Site, and includes repairs to former building areas (concrete foundations) burned during the May 2000 Cerro Grande Fire, and repairs to the roof drainage systems at the two remaining V-Site buildings (TA-16-516 and TA-16-517). Rehabilitation work at TA-22-1, a Park-eligible quonset hut, included the installation of a temporary membrane roof on the building's World War II-era mechanical room. Urgent repairs to the quonset hut's roof and windows to address water leaks are planned for late FY 2017.

- In 2017, cultural resources staff supported the development of an interactive museum exhibit at the Bradbury Science Museum, entitled Manhattan on the Mesa. LANL staff partnered with New Mexico Highlands University's Program in Cultural Technology staff to support the production of 360-degree videos of three Park sites at LANL that are not available to the public, the production of a 15-minute history film about the Manhattan Project at Los Alamos, the development of touch-screen worker profiles, and several new

informational panels that feature all nine LANL Park sites, including the properties at Pajarito Site, Gun Site, and V-Site.

Additional highlights across the DOE complex for the past three years include:

- Continued development of field site inventories and, where applicable, completion of Cultural Resource Management Plans (CRMPs). These CRMPs are being compiled and made available for sites across the DOE complex in order to allow for greater collaboration and transparency. The CRMP at Brookhaven National Laboratory, for example, established a requirement for development and implementation of a 'tagging' program for identifying, cataloguing, and tagging culturally significant items of interest for preservation. These items are typically related to the scientific history of the Laboratory or they are representative of a facet of daily experience at the Lab in the past. The Cultural Resource management program worked with a graduate level intern to develop a spreadsheet to record items, develop a tag, then locate known items and identify new items for inclusion. Small aluminum tags with unique identification numbers were then affixed to items in appropriate locations (either prominently or inconspicuously depending on the item). The tags also contain a requirement to contact the Cultural Resource manager if they are no longer wanted in their current location. If the items are no longer wanted for display or use, then they can be moved to safe storage for future interpretation. To date there are more than 250 items catalogued.

- DOE has made efforts to develop and improve existing strategies for managing and preserving artifacts. Argonne National Laboratory, for example, began a cultural object management program in 2016. Known objects of scientific significance, such as microscopes and scales from the laboratory's early history and research were tagged and recorded in a property inventory management system. Many of these items are on display in building lobbies. DOE loaned a large model of the Chicago Pile-1 reactor to the Chicago Museum of Science and Industry for its use in a display marking the 75th anniversary of the first sustained nuclear reaction at the University of Chicago campus.

- DOE has also improved its outreach efforts and increasingly pursued coordination with museums and local historical societies. Brookhaven National Laboratory (BNL), for example, continues to work with museums for the loan of materials for historic interpretation. In 2016 the Lab loaned materials from the 'Tennis for Two' game, considered to be the very first video game, to two museums. An oscilloscope and hand controller was loaned to the New York Historical Society and Museum for a display they had developed on gaming. These materials were returned to BNL in fall 2016. A complete 'Tennis for Two' set-up was also loaned to The Strong, National Museum of Play located in Rochester, New York for an extended exhibit on video gaming. Public education during FYs 2015 through 2017 at the Los Alamos National Laboratory included the continued development of outdoor informational panels, monuments, and kiosks, such as the installation of trail kiosks in LANL Technical Areas (TAs) 70 and 71, the preparation of an interpretative exhibit for LANL employees on the cultural and biological resources of the Pajarito Plateau, and the preparation of the upcoming Fieldhouse Context Project by cultural resources staff. The Fieldhouse Context

Project is an alternative mitigation requirement that will synthesize archaeological data on fieldhouses (a specific type of archaeological site) located within the boundaries of LANL, Bandelier National Monument, the Valles Caldera National Preserve, and adjacent lands in northern New Mexico. The goal of this creative mitigation is to increase knowledge of Ancestral Puebloan agricultural systems from A.D. 1200 to 1600 and appreciation of the local archaeology of northern New Mexico. In terms of outreach efforts, at the DOE Pantex Plant, there were over eighty outreach opportunities during the past three years. These included tours of the Visitor Center and the historic railcar exhibit, Pantex history briefings for visitors and newly hired employees, and windshield tours of the site. Due to security restrictions, the Visitor Center is not accessible to the general public unless they have been invited. Invited groups have included students from local universities and a local leadership organization.

- In celebration of the 50th anniversary of the National Historic Preservation Act (NHPA), the Idaho National Laboratory (INL) participated in the Making Archaeology Public project. An INL Cultural Resources Management Office (CRMO) investigation of a 1944 World War II B-24 bomber crash site - located on the INL near one of the World War II high-altitude bomber training ranges was selected in FY 2015 to represent the State of Idaho. The INL CRMO coordinated the investigation of the crash site with DOE-ID, Project Remembrance and the family of Sergeant George Pearce, one of the men who perished in the 1944 crash.

- On July 26, 2016, a 25.2-acre portion of Department of Energy Grand Junction Office complex was listed as a district on the National Register of Historic Places (NRHP) in recognition of its significance during the Manhattan Project and Cold War. The complex traces its origins to 1943, when the U.S. government purchased a former gravel mine and log cabin as a uranium-processing site for the U.S. Army Corps of Engineers Manhattan Engineer District (MED). The Office of Legacy Management leases part of the DOE Grand Junction Office Historic District, which is now owned by Riverview Technology Corporation. On February 1, 2017, LM received Colorado's first State Historic Preservation Officer's Award in recognition of the nomination of the DOE Grand Junction Office to the NRHP.

- At the Nevada National Security Site (NNSS), 2,500 acres were surveyed, resulting in the recordation of 32 historic properties determined eligible to the NRHP in consultation with the Nevada State Historic Preservation Office. These historic properties were documented in response to the closure of buildings, environmental restoration activities, national security projects, plans to modernize the town of Mercury, and NNSS maintenance and operation activities. Therefore, historic property identification in the past three years was completed for project-related compliance activities subject to review and consultation under Section 106 of the NHPA. In addition to Section 106 surveys, preliminary assessments were prepared to identify possible adverse effects to historic resources from environmental restoration activities aimed at cleaning up legacy contamination from historical nuclear testing locations. These consisted of identifying nuclear testing resources based on archival review and field visits and providing historic context to supplement environmental investigations for identifying possible contaminants. Among the notable recent accomplishments are the recordation of a series of Cold War resources: Shasta Historic District, Control Point 1 (CP-1)

Building, the Mercury Historic District (ongoing), and the Mercury Bowling Alley. The NNSS poses complex challenges for cultural resources and historic preservation because of its nationally significant Cold War record of nuclear testing. More and more, new NNSS projects are utilizing areas within old testing locales, increasing the frequency for the need of Section 106 evaluations. While this provides opportunities for identification and protection, recordation and consultation need to be completed efficiently to meet mission schedules. For example, for a series of seismic studies projects in Yucca Flat, a geographic area where from 1951 to 1992 a total of 742 nuclear tests were conducted, the survey, recordation, and evaluation of numerous testing resources in advance of mission schedule were required. Recorded historic properties included: military trenches, instrument stations, blast towers, gauge stands, subsidence craters from underground nuclear tests, foundations for various buildings, and a facility used for decontamination during testing, among others.

- At the Pacific Northwest National Laboratory, in the past three years, NHPA compliance activities have resulted in the archaeological inventory of 378 acres of land. This total includes lands located on both the Pacific Northwest National Laboratory (PNNL) Richland and Marine Science Laboratory (MSL) Campuses, the adjacent Hanford Site (managed by DOE-RL) and various locations throughout Washington and Oregon. While most surveys conducted were associated with project related NHPA Section 106 reviews, one large NHPA Section 110 archaeological survey effort was completed in 2015 which included a 100-acre survey of the PNNL Richland Campus. This NHPA Section 110 compliance effort was completed to aid in future decision making and preservation planning for future land use on the PNNL Richland Campus. The cultural resources-related field effort also included a geomorphological analysis to identify areas with a high probability for buried archaeological resources. Results were compiled and recommendations for future subsurface investigations were presented in the final report to guide future subsurface archaeological investigations in the area. The findings of this NHPA Section 110 report were used to formulate the research design for a large field effort (completed in 2017) for a NHPA Section 106 review completed for future development of the PNNL Richland Campus. A total of 254 acres were surveyed for archaeological resources and a total of 390 shovel test units were excavated throughout the PNNL Richland Campus to establish presence/absence of archaeological resources. In addition, an architectural survey was conducted to inventory and evaluate historic buildings and structures located on the PNNL Richland Campus. As part of this field effort, a total of 7 new archaeological sites, 4 archaeological isolates, and 13 historic buildings were identified (bringing the total for the PNNL Richland Campus to 21 sites and 15 isolates 14 historic buildings). The results of these field inventories (including NRHP evaluations) are currently being compiled through the NHPA Section 106 process and National Environmental Policy Act (NEPA) Environmental Assessment. In the past three years, annual cultural resources condition monitoring of culturally sensitive areas on the PNNL Richland Campus (including a pre-contact village site, cemetery, and camp/fishing site) have been completed. Similar to NHPA Section 106 fieldwork, cultural resources condition monitoring is completed in consultation and partnership with area American Indian Tribes. This monitoring involves on-the-ground inspection of culturally significant areas, documentation of changes since the previous site visit, a summary email, and a monitoring

report. Copies of the monitoring report are provided annually to the Washington SHPO and American Indian Tribal consulting parties.

- Notable accomplishments at the Portsmouth Gaseous Diffusion Plant (PORTS) since 2014 include the drafting and finalization of a curation plan for archaeological resources collected during the archaeological surveys of the site and issuance of a request for proposal for implementation of the plan, the drafting of Historic American Engineering (HAER) reports for seven PORTS facilities, the drafting of reports based on the content requirements of the Historic American Building Survey for 26 site facilities, monthly panoramic photo-documentation of site Deactivation & Decommissioning (D&D) progress, and the continuation of outreach and communication activities such as site bus tours during the spring and summer months, and presentations to local groups and gatherings on site history that include showing items from PORTS' operational period.

Part II: Field Site Reports

Argonne National Laboratory

Introduction

Argonne National Laboratory (Argonne) traces its birth from Enrico Fermi's secret charge — the Manhattan Project — to create the world's first atomic bomb. Code-named the "Metallurgical Lab," Fermi's University of Chicago team constructed Chicago Pile-1, which achieved the first self-sustaining nuclear chain reaction on December 2, 1942, on a squash court located underneath the west stands of the University of Chicago's Stagg Field. Because the nuclear reactor experiments were deemed too dangerous to conduct in a major city, the operations were moved to a spot outside of the city in Palos Hills and renamed "Argonne" Laboratory after the surrounding Argonne forest area which itself commemorated the World War I battlefield.

After the Atomic Energy Act on July 1, 1946 was enacted, the Argonne National Laboratory was created, with a mission to conduct "cooperative research in nucleonics". Argonne was the first national nuclear research and development laboratory in the United States. At the request of the U.S. Atomic Energy Commission (AEC), Argonne became the nation's primary nuclear reactor center building on the reactor research conducted by its staff during World War II. The focus now switched to developing nuclear reactors for the nation's peaceful nuclear energy program. In the late 1940s and early 1950s, the laboratory moved approximately five miles from the Argonne Laboratory site to a larger location on its current site in the southwest suburbs of Chicago in Lemont, Illinois. Shortly thereafter Argonne established a sister facility in the Idaho desert called "Argonne-West," where experiments with full scale test reactors could be undertaken safely away from major population centers. This western site became part of Idaho National Laboratory in 2005.

View of original Argonne Laboratory site at Palos Forest preserve.

During its years as the AEC's reactor laboratory Argonne had many notable achievements. The second female Nobel Prize winner in Physics after Marie Curie was Maria Goeppert-Mayer who won for her shell theory of atomic structure. Goeppert-Mayer started with Argonne during World War II and remained an employee throughout her career. She was awarded the Noble prize in 1963. Argonne was also instrumental in the creation of the nuclear power industry. Some of the first

commercial nuclear power reactors were and continue to be based on designs pioneered at Argonne. Many of the first commercial power reactor operators were trained on the reactors at Argonne. Operation of Argonne National Laboratory passed to the Department of Energy in 1977. Since that time, Argonne's research has shifted away from development of energy sources to battery development to improve energy efficiency, medical research and development of high end computing.

Today, Argonne is a multidisciplinary science and engineering research center, where talented scientists and engineers work together to answer the biggest questions facing humanity, from how to obtain affordable clean energy to protecting people and the environment. The diverse and dynamic research agenda spans 14 research divisions, 12 centers, and five national user facilities. Argonne is managed by UChicago Argonne, LLC, for the U.S. Department of Energy - Office of Science. This rich scientific environment provides researchers with an extraordinary range of cutting-edge facilities and scientific tools that support in-depth research, drive technological breakthroughs, and improve the nation's competitiveness and quality of life.

The Argonne campus consists of 687 hectares (1,500 acres) in Downers Grove Township, DuPage County, Illinois and is located approximately 43 km (27 mi) southwest of downtown Chicago. The site is surrounded by the 907-hectare (2,240-acre) Waterfall Glen Forest Preserve.

At Argonne, the Section 106 requirements of the National Historic Preservation Act are integrated with the National Environmental Policy Act (NEPA) review process, as well as the Argonne digging permit process. The Department of Energy will consult with the Illinois State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) if proposed actions may adversely affect properties considered eligible for listing or listed on the National Register of Historic Places (NRHP). Argonne's procedures for satisfying the NHPA and DOE requirements amidst ongoing facility operations are outlined in a 2001 Programmatic Agreement between the DOE-Argonne Site Office (ASO), the Illinois SHPO and the ACHP. Argonne maintains a Cultural Resource Management Plan which contains information on the procedures for considering cultural resources during laboratory operations.

Argonne evaluated its Cold War era structures (i.e. built prior to 1989) for potential listing on the National Register of Historic Places in 2001. The survey identified the Building 200 MA-Wing Caves, as well as Buildings 203, 205, 212, 315/316, and 350, as individually eligible for listing on the NRHP. The Main Campus Historic District (Buildings 200, 202, 203, 205, 208, 211) and the Freund Estate Historic District (Buildings 600, 604 and properties 603 [pool], 606 [pavilion], and 616 [tennis courts]) were determined National Register eligible as part of that evaluation. The main campus district is considered eligible for its association with advancements in nuclear research and development of nuclear power reactors and is considered a unique, specialized cohesive scientific facility. Separate evaluations conducted as part of decontamination and demolition efforts established the Chicago Pile-5 Reactor (Building 330), the Argonne Thermal Source Reactor (Building 316), and specialized scientific facilities including the Physics and Metallurgy Hot Laboratory (Building 301), the High Voltage Electron Microscopy Facility, the Alpha-Gamma Hot Cell Facility (AGHCF), and Zero Power Reactors VI and IX as eligible for listing on the NRHP. In the field of nuclear research, Argonne developed specialized facilities for working with and studying radioactive materials. The research cave, a facility that allows the safe examination of highly radioactive materials, was developed at

Argonne along with the master slave manipulators necessary for the remote manipulation of objects in a cave. The AGHCF in Building 212 is the most advanced example of a research cave at Argonne. This facility was constructed in 1963 to contain alpha radiation from the study of plutonium power reactor fuels.

Approximately 240 hectares (593.6 acres) or, nearly 40 percent, of the Argonne site has been examined through Phase I Archaeological surveys for the presence of cultural resources. Past surveys identified archaeological sites at Argonne, three of which were determined eligible for listing on the NRHP, while 35 were determined ineligible. The remaining 20 archaeological sites are yet to be evaluated for NRHP eligibility. Archaeological sites at Argonne contain evidence from the region's local inhabitants ranging in time from approximately 9,000 years ago up to the 1940s.

Three-Year Progress Overview

Projects requiring review under Section 106 of the NHPA in 2015 included the planned construction of the Materials Design Laboratory (MDL) building, as well as the planned removal of two of the contributing properties (pool and bathhouse) to the NRHP eligible Freund Estate Historic District. The MDL project review resulted in a "no adverse effect to historic properties" determination by Argonne, to which the SHPO concurred. The removal of the Freund pool and bath house, for safety and environmental considerations, are considered an adverse effect to the Freund historic district, and the DOE initiated consultation with the SHPO to mitigate that effect. In the early 20th century, many wealthy Chicago entrepreneurs began constructing summer homes and estates in the countryside surrounding Chicago. The Freund Estate is one such estate owned by a locally prominent businessman, Erwin Freund, as his summer retreat. The Freund Estate pre-dates the laboratory and some of its buildings still stand at Argonne. Mr. Freund was the founder of the Visking® Corporation. He was perhaps best known for his contribution to the meat-packing industry with his invention of Visking® casing for meat and sausage and the subsequent development of the Skinless® hotdog during the late 1930s. The invention was later found useful in the medical field and led to the development of cellulose-based Visking® tubing for dialysis. After consultation, an executed memorandum of agreement was forwarded to the ACHP in 2017 to resolve the adverse effect resulting from removal of the pool bath house.

Freund Lodge prior to acquisition by the Federal government (c. 1940s).

Balance scale on display in a building lobby at Argonne.

Argonne began a cultural object management program in 2016. Known objects of scientific significance, such as microscopes and scales from the laboratory's early history and research, were tagged and recorded in a property inventory management system. Many of these items are on display in building lobbies. DOE loaned a large model of the Chicago Pile-1 reactor to the Chicago Museum of Science and Industry for its use in a display marking the 75th anniversary of the first sustained nuclear reaction at the University of Chicago campus.

Projection of Activities and Accomplishments

As funding is available, Argonne will continue to make eligibility determinations on its remaining structures and undetermined archaeological sites. Updates to the Cultural Resource Management Plan will be finalized and sent to the SHPO for concurrence. Demolition of excess facilities are planned over the next 10 years but are not yet funded; each project will require consultation with the SHPO and/or Advisory Council on Historic Preservation.

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 77th "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, established firebreaks, and water catchments 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 March 21, 1947 Camp Upton was officially transferred from the U.S. War Department to the Atomic Energy Commission, and Brookhaven National Laboratory (BNL) 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. The Chemistry building has been designated as a National Chemical Landmark by the Chemical Society for the diverse work that has been conducted there. This diverse set of facilities has been part of many significant discoveries including those related to 7 Nobel Prizes.

Three-Year Progress Overview

The Cultural Resources program continues to work toward improvements. These improvements include compliance with internally established requirements of the Cultural Resource Management Plan (CRMP) for Brookhaven National Lab as well as outreach and coordination with museums and local historical societies.

The CRMP established a requirement for development and implementation of a 'tagging' program for identifying, cataloguing, and tagging culturally significant items of interest for preservation. These items are typically related to the scientific history of the Laboratory or they are representative of a facet of daily experience at the Lab in the past. The Cultural Resource management program worked with a graduate level intern to develop a spreadsheet to record items, develop a tag, then locate known items and identify new items for inclusion. Small aluminum tags with unique

identification numbers were then affixed to items in appropriate locations (either prominently or inconspicuously depending on the item). The tags also contain a requirement to contact the Cultural Resource manager if they are no longer wanted in their current location. If the items are no longer wanted for display or use, then they can be moved to safe storage for future interpretation. To date there are more than 250 items catalogued.

The tagging program also allowed the collection of representative items during decommissioning projects. As an example the National Synchrotron Light Source in Building 725 was completely decommissioned and dismantled for reuse, recycling, or disposal. In the process various, small items associated with the facility were retained, catalogued, tagged, and put into storage for future interpretation.

Tennis for Two display at The Strong, National Museum of Play

The Laboratory continues to work with museums for the loan of materials for historic interpretation. In 2016 the Lab loaned materials from the 'Tennis for Two' game, considered to be the very first video game, to two museums. An oscilloscope and hand controller was loaned to the New York Historical Society and Museum for a display they had developed on gaming. These materials were returned to BNL in fall 2016. A complete 'Tennis for Two' set-up was also loaned to The Strong, National Museum of Play located in Rochester, New York for an extended exhibit on video gaming.

Doughboys enlisted for the opening of the Suffolk County Historical Society's display on "OVER HERE, OVER THERE: Long Island & the Great War." Some of the items on wall, back left of photo, are on loan from the Camp Upton Historical Collection.

In 2017 as part of celebrations for the 100th Anniversary of the United States entering World War I interest in developing displays resulted in requests for material from BNL's Camp Upton Historical Collection. The largest number of items sent out on loan was to the Suffolk

County Historical Society and Museum in Riverhead, NY. The museum borrowed items for their display titled "OVER HERE, OVER THERE: *Long Island & the Great War*." Additional graphic and photographic materials were loaned to the Town of Brookhaven for display at Town Hall.

The Laboratory celebrated two anniversaries in 2017. The first is the 100th Anniversary of the founding of Camp Upton during WW I which eventually transitioned to Brookhaven National Laboratory in 1947. The second anniversary is the celebration of 70 Years as Brookhaven National Laboratory. The dual celebrations are covered by the theme: 70 Years of Discovery, A Century of Service. The Celebrations are relatively simple but reflect the significance of the two anniversaries. The most extensive of the events was the first 'Summer Sundays' open house that focused on the overall history of the BNL Site held on July 16, 2017. The day included bus tours of the Lab focusing on the history starting with Camp Upton and concluding with our major new facilities National Synchrotron Light Source II, Center for Functional Nanomaterials, and the Integrated Science Building. Within Berkner Hall, where guests arrived and commenced their bus tours, guests could talk with Lab scientists and docents and learn about the history of Camp Upton in World War I and II, the Civilian Conservation Corps, and Brookhaven National Laboratory. They could also look at and read about historic memorabilia from World War I Camp Upton that was on display. Finally, there were opportunities to attend talks about the history of the BNL Site and the Construction of Camp Upton.

Throughout the year BNL has provided opportunities to learn about the history of the site including talks on the History of the BNL Site, and a Commemorative Cancellation Stamp to celebrate 70 years of the U.S. Post Office at BNL where a poster also displayed a "First Day Stamp" from the opening of the Upton Post Office on Aug. 1, 1947. At various times through the year employees could purchase a Camp Upton style lunch taken from historic Army Menus. The culmination of the two celebrations included an Employee Celebration of BNL on September 9, 2017 and a special dedication of a plaque commemorating the 77th Division and all the soldiers who came through Camp Upton during the Veteran's Day memorial on November 9, 2017.

As part of the outreach for the 70th/100th celebrations the talk on the History of the BNL Site has been given or has been scheduled to be given to multiple Historical Societies throughout Suffolk County.

To meet compliance with cultural resource requirements BNL ensures that projects are reviewed under the National Environmental Policy Act and the National Historic Preservation Act. For projects that may have land disturbance or for projects that may impact structures 50 years or more in age, BNL may establish contracts for archeological or architectural surveys. In 2016, as part of the preparation for the redevelopment of a 40 acre parcel where the current apartment complex is located just south of the main entry gate for the Lab, BNL established a contract to conduct a Phase I Archeological Survey of areas that had not seen significant disturbance and an architectural evaluation of four 1960s era efficiency apartments that had reached 50 years of age.

The archeological survey utilized 989 shovel test pits within the area of potential effect. This area consisted of undisturbed forest surrounding the core area of the apartments and had not been disturbed since 1921 when World War I facilities were sold and removed from the property. The core area of the Apartments had seen various levels of disturbance from WW II re-development, development for BNL, and through demolition of WW II and early BNL structures. The archeological

survey resulted in 2,099 artifacts mostly from WWI with some dating to between WW I and WW II. The conclusion of the survey was that no National Register-eligible archeological sites are present within the Area of Potential Effect. This finding was submitted to the New York State Historic Preservation Office and received concurrence.

The architectural evaluation of the four 1960s era efficiency apartments was conducted as the previous architectural inventory document had been completed prior to the apartments turning 50 years old. The evaluation resulted in the apartments being determined as eligible for listing on the National Register of Historic Places as examples of Mid-Century Modern architecture associated with a significant period within U.S. history as these were the first purposeful construction of housing for individuals visiting BNL to conduct scientific studies in atomic research. The report indicated an adverse effect as the proposed Discovery Park project would result in the demolition of these buildings. The detail of the report and retention of records and drawings are intended to meet Section 106 requirements for mitigation of adverse impacts. The report and findings were submitted to the NYSHPO for review, and consultation on resolution of adverse effects is continuing.

All World War II structures within the Apartment Complex have previously been determined to be in-eligible for listing, with a Section 106 package having been submitted to the NYSHPO with concurrence. As new housing is eventually developed in association with Discovery Park existing WW II era housing will be demolished. The more modern structures including the Child Development Center and the 1970s era Danish House are to be retained.

As BNL works toward sustainability goals several older buildings were identified for inclusion in the 2015 Utility Energy Services Contract which resulted in updating several aspects of these buildings to make them more energy efficient allowing their use for many additional years without impacting an historical features. Many of these buildings were well over 50 years old with the oldest being the former Medical Research Center that was constructed in 1950. As mentioned above the National Synchrotron Light Source facility underwent decommissioning and the building, constructed in the 1970s, is being repurposed as a Data Center.

Projection of Activities and Accomplishments

The Cultural Resource Management Plan for Brookhaven National Laboratory is on a 5-year cycle for review and update. The 2013 CRMP will undergo review in 2018 and will incorporate progress since 2013. While there are no specific plans for the immediate future, there are expectations for Veteran's Day 2018 for specific remembrances for the hundredth anniversary of the Battles of World War I and the conclusion of World War I on November 11, 1917.

As BNL continues to modernize its facilities the Cultural Resource program works to preserve the history of the Laboratory through gathering of information for future reference. Some of the major facilities on the site have met or exceeded the 50 year mark and have not undergone detailed review for historic purposes although they have been inventoried. Should funding allow, these facilities would be targeted for architectural and historic reviews to document their importance to the history of BNL and to make formal determination as to their eligibility. Buildings older than 50 years that have been determined to be eligible for listing, are architecturally significant, or are being retained for historic purposes as examples of the Civilian Conservation Corps or WW II architecture and may

be updated, undergo review with the Architectural Review Committee. The Architectural Review Committee is also consulted for significant changes to exterior landscaping. The Cultural Resource manager sits on this committee to ensure cultural resources are considered in the planning process.

The Cultural Resources program works to identify opportunities for collaboration and utilizes, where possible, outside individuals and organizations to assist with the program.

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 by the state, 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 (DOE), 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.

Pioneer Cemetery

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.

Fermilab manages its cultural resources program in accordance with Executive Order 13287 "Preserve America", DOE Policy 141.1 "Management of Cultural Resources, and Fermilab's Cultural Resource Management Plan (CRMP). Fermilab and its contractor Midwest Archaeological Research Services, Incorporated (MARS) updated the CRMP in 2015. As described in the CRMP, MARS completed Phase I archaeological surveys for the entire Fermilab site and 108 archaeological and architectural sites have been recorded with the Illinois Historic Preservation Agency (IHPA). Of the 108 sites, 4 sites are eligible for inclusion on the National Register of Historic Places (NRHP), 71 sites are not eligible, and 33 sites require Phase II testing to determine their NRHP eligibility.

Fermilab is building a new experiment called the Long Baseline Neutrino Facility and Deep Underground Neutrino Experiment (LBNF/DUNE) that will generate a high-intensity neutrino beam that will be directed and travel underground through the Earth at depths up to 20 miles from Fermilab to detectors located 1 mile underground at the Sanford Underground Research Facility

(SURF) located in Lead, South Dakota. SURF is located at the former Homestake gold mine that is located in the Lead Historic District.

Sanford Underground Research Facility (SURF) located in Lead, South Dakota

Three-Year Progress Overview

In 2015, DOE finalized a Programmatic Agreement (PA) to manage Section 106 activities regarding construction and operation of the LBNF/DUNE at SURF. Signatories to the PA included DOE, South Dakota State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation (ACHP), and the South Dakota Science and Technology Authority (SDSTA). Invited signatories included the City of Lead, the City of Deadwood, and the South Dakota Game, Fish and Parks. There were also 22 invited concurring parties to the PA, including Fermilab and 19 American Indian Tribes.

In 2016, Section 106 consultation under the PA was initiated with signatories and concurring parties for the LBNF/DUNE Cryogen Support Building Construction and Ross Dry Renovation project at SURF. The consultation resulted in a determination of "No Adverse Effect". In 2017, Section 106 consultation was initiated with signatories and concurring parties under the PA for the Tramway Portals Repair project at SURF. The consultation resulted in a determination of "No Adverse Effect".

The PA has been a success in that it provides a formal mechanism for Section 106 consultation for projects at SURF. However, the PA has been challenging because there are responses for 26 stakeholders to track. None of the historic properties located at SURF contribute to the local economies or tourism. However, the Lead Historic District and the associated Visitors Center bring tourism to Lead, Deadwood, and the Black Hills.

In 2015, Fermilab and its contractor MARS updated Fermilab's CRMP using the data provided by MARS 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*. 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).

Farm Book 29 (Fermilab Directors Residence)

Farm Book 58 (Samuel and Lucy Bartholomew Farmstead and most recently home to former Fermilab director and Nobel laureate Leon Lederman)

Farm Book 65 barn (Sanford and Jennie Watson Farmstead)

As described in the CRMP, MARS completed Phase I archaeological surveys for the entire Fermilab site and 108 archaeological and architectural sites have been recorded with the IHPA. Of the 108 sites, 4 sites are eligible for inclusion on the NRHP, 71 sites are not eligible, and 33 sites require Phase II testing to determine their NRHP eligibility. Fermilab utilizes the procedures described in the CRMP to protect its historic properties.

In June 2017, Fermilab celebrated its 50th year anniversary as a DOE laboratory. 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 NRHP. Fermilab will pay close attention to the proposed activities for these facilities and conduct archaeological and architectural surveys when necessary. None of the historic properties located at Fermilab contribute to the local economies or tourism. However, Fermilab is an open site with thousands of visitors coming to Fermilab each year.

In July 2017, MARS completed Phase II archaeological testing for the Site 56 Horse Barn located at Fermilab. Based on the Phase II testing, the site does not appear to be eligible for inclusion on the NRHP. A report will be submitted to the IHPA for concurrence. If IHPA concurs, the Site 56 Horse Barn will be demolished.

Projection of Activities and Accomplishments

Neither Fermilab nor SURF has any immediate plans to sell, lease, exchange or transfer any of their historic properties. Fermilab and SURF are both meeting the goals and requirements of Executive Order 13693 by preparing and implementing annual Site Sustainability Plans (SSP). SSPs will continue to be prepared over the next three years.

Fermilab will follow the procedures in the CRMP to protect Fermilab's historic properties. Phase II archaeological testing will be conducted for the remaining sites as necessary. As LBNF/DUNE construction activities proceed, Fermilab and SURF will implement the Section 106 procedures in the PA for future projects to be conducted at SURF in South Dakota.

Fermilab will continue to utilize its Geographic Information System (GIS) for future construction and excavation projects at Fermilab. 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 NRHP. 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 IHPA.

Idaho Operations Office and Idaho National Laboratory

Introduction

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. 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. Numerous historic properties, both archaeological and architectural, are present within the boundaries of the INL site. There are two historic properties within INL that are listed on the National Register of Historic Places (NRHP), Aviators Cave and Experimental Breeder Reactor One (EBR-I). Aviator's Cave is a significant prehistoric archaeological site that is also important to the Shoshone-Bannock Tribes. EBR-I was designated a National Historic Landmark in 1966 for its association with the history of nuclear reactor research.

The comprehensive INL Cultural Resource Management Plan (CRMP) 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. A 2004 Programmatic Agreement (PA), Concerning Management of Cultural Resources on the INL site, between DOE-ID, the Advisory Council on Historic Preservation (ACHP), and the Idaho State Historic Preservation Office (SHPO) sanctions the establishment and continued update of the CRMP (Department of Energy Idaho Operations Office, Idaho State Historic Preservation Office, Advisory Council on Historic Preservation 2004). In addition, the CRMP outlines the process for communication between DOE and the ACHP, Idaho SHPO, the Shoshone-Bannock Tribes, and other INL stakeholders as mandated by law and DOE-ID agreements, as well as providing INL employees and decision-makers with guidance on regulatory compliance as pertains to management of INL cultural resources. INL Cultural Resource Management Office (CRMO) staff employ tools identified under DOE Policy 141.1 and DOE Order 144.1 to facilitate these communications.

DOE-ID's Agreement in Principle (AIP) with the Shoshone-Bannock Tribes is another important component of the overall approach to management of cultural resources at the INL Site (Shoshone-Bannock Tribes and U.S. Department of Energy 2012). For more than two decades, DOE-ID and the INL CRMO have participated in an important ongoing partnership with the Shoshone-Bannock Tribes based on the AIP, enabling tribal and INL CRMO staff to jointly conduct many general and project-specific activities. Regular, face-to-face meetings of the INL Cultural Resources Working Group (CRWG), with representatives from DOE-ID, the INL CRMO, the Shoshone-Bannock Tribes, and INL project managers, as appropriate, facilitate this important partnership.

Cultural resource management on INL is integrated under Department of Energy (DOE) Order 436.1, and the INL CRMO is identified by DOE-ID through the Management and Operations (M&O) contract with Battelle Energy Alliance, LLC (BEA), as responsible for maintaining INL's compliance with federal regulations pertaining to archaeological and historic architectural properties. In addition to cultural resource compliance, the M&O contract also identifies four items in the Contract Data Requirements

List (CDRL) to be completed and maintained by the INL CRMO. INL's Environmental Management System (EMS) is a component of the Integrated Safety Management System (ISMS), driven by DOE Order 436.1. Through EMS, consideration of environmental impacts, including those to cultural resources, associated with INL projects is incorporated during work planning and execution. Completion of CDRLS, along with maintained project budget and schedule targets, act as a performance measure for the CRMO.

The FY 2017 CRMO staff consists of six individuals, of whom five and three quarters have full time funding; the current CRMO workload is equivalent to approximately eight and one half Full Time Employees (FTEs). Funding is approximately 95% indirect through the M&O contract and 5% direct through project funded Section 106 review; Section 106 and 110 compliance is completed by CRMO staff.

In order to catalogue historic architectural properties, the INL CRMO employs four architectural property categories: Signature, Category 1, Category 2, and Category 3 (INL Cultural Resource Management Office 2016, 160). Signature Properties represent the most historically important properties across the DOE complex and/or those properties viewed as having tourism potential. These properties are documented through Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), or Historic American Landscape Survey (HALS) reports regardless of their ultimate disposition. Category 1 Properties represent key individual INL properties (generally reactor buildings) that, through periodic reviews, may be reclassified as Signature Properties. Category 2 Properties represent INL properties, which are contributing to the historic context and landscape, and that are directly, associated with Signature or Category 1 properties. Category 3 Properties represent INL properties, which are contributing to the historic context and landscape, but that, are not directly associated with Signature or Category 1 properties.

In addition, the CRMO works with INL Facilities Information Management to maintain accurate historical status of real property assets in the Facilities Information Management System (FIMS), using FRPP definitions as required under DOE Order 430.1C, *Real Property Asset Management*. Due to the nature of the research conducted at INL, facilities are located 50-plus miles from any population center and are not accessible to the public, with the exception of EBR-I, which is open to the public free of charge from Memorial Day through Labor Day. Based on visitor logs, estimated visitors to EBR-I are between 5,000 and 10, 000 annually.

Three-Year Progress Overview

During fiscal year (FY) 2014 through the beginning of August in FY 2017, a total of 300 Section 106 reviews have been conducted, including 120 for archaeological properties and 180 for historic architectural properties. Section 110 efforts have been directed to the broader landscape and the many resources located in areas that are not necessarily subject to potential project impacts. As of FY 2016, approximately 10% of lands (nearly 56,000 acres) within the INL site have been inventoried for archaeological properties through Section 106 and Section 110 related efforts; 2,842 prehistoric and historic archaeological resources have been identified, of which 1,422 are potentially eligible for listing on the NRHP. Since 2004, 752 historic architectural properties have been inventoried and evaluated for listing in the NRHP. As of August 2017, 244 historic architectural properties, associated with World War II and nuclear energy research historic contexts, and eligible for nomination to – or

listed on (EBR-I) - the NRHP, have been inventoried. Of these properties, 95 are extant; 149 have been demolished since 2004 following mitigation procedures outlined in the INL CRMP. Of the 95 extant historic architectural properties, 78 are operating research or support facilities, while 17 are on stand-by awaiting new program operations or shutdown pending deactivation, decontamination, and decommissioning (DD&D).

During World War II, the area that now forms the central core of the INL site was designated as the Arco Naval Proving Ground (NPG). Additionally, the U.S. Army Air Force, flying out of Pocatello, used two areas currently encompassed by the INL site for high altitude bomber training. Ordnance from the U.S. Navy's Pacific Fleet was tested at the Arco NPG, after undergoing maintenance at the Naval Ordinance Plant (NOP) in Pocatello. During the post-war period, the Army-Navy explosives safety board conducted a variety of tests at areas within the NPG to evaluate and revise existing standards for the safe storage and transport of ordnance and munitions. In FY 2014, in response to a DOE-ID proposal to demolish five NRHP eligible structures associated with the Arco NPG, INL CRMO staff facilitated consultation between DOE-ID, the Idaho SHPO, and the ACHP.

Arco NPG, Mass Detonation Area camera shelter, view looking SW.

Consultation resulted in the development of a Memorandum of Agreement (MOA) stipulating measures to mitigate the adverse impact demolition would have on these historic properties. The mitigation measures included completion of HALS documentation, creation and installation of interpretive signage in a publically accessible location, and retention of original features of the Proofing Area, which includes a concussion wall, gun proofing and storage alleys, gantry crane, transfer rail truck, and transfer tracks.

Figure 1: Arco NPG, gantry crane with concussion wall in background, view looking W/SW.

Activities were initiated in FY 2014 to meet the MOA stipulations. HALS documentation and interpretive signage were completed in FY 2015. Many unique structural, linear, and landscape elements were identified during survey and assessment of the 271 square-mile Arco NPG including buildings and structures (Figure 1) linear elements (Figure 2) and other landscape elements (Figure 3).

Figure 2: Arco NPG, West Monument Road, view looking N/NW.

Figure 3: Arco NPG, concrete test wall with detonation crater in foreground, view looking S/SW.

In celebration of the 50th anniversary of the National Historic Preservation Act (NHPA), INL participated in the Making Archaeology Public project. An INL CRMO investigation of a 1944 World War II B-24 bomber crash site - located on the INL near one of the World War II high-altitude bomber training ranges - was selected in FY 2015 to represent the State of Idaho. The INL CRMO coordinated the investigation of the crash site with DOE-ID, Project Remembrance and the family of Sergeant George Pearce, one of the men who perished in the 1944 crash.

Pre-World War II historic properties on the INL include dry canal channels and associated structures left from early 20th century irrigation projects, homestead sites, railroad construction campsites, and sections of the Oregon Trail. Several prominent cutoffs strayed from the main route of the Oregon Trail, including the Lander Road, Hudspeth's Cutoff, and Jeffery's/Goodale's Cutoff. These cutoffs were promoted as shorter and faster routes with Goodale's seeing heavy use starting in 1862 as conflict between white settlers and Native Americans increased on the main route. Tim Goodale, a scout and guide familiar with the region, set off with a large train of emigrants across the Cutoff in 1862. The Goodale Train was made up of 1,195 emigrants and 38 wagons, including 795 men and300 women and children, that crossed Jeffrey's Road at the end of July in 1862. This train gained notoriety and the Cutoff was soon called Goodale's Cutoff. The collection of emigrant diaries ranging from 1854 to 1866 all tell the same story of leaving the Fort Hall area and crossing over 30 miles of desert without water, with the idea that water could be found at a spring on the northwestern flank of the Big Southern Butte. However, the meager spring on the side of the Butte was only a trickle and there was never enough water for horses, oxen and other livestock. The exhausted emigrants were only allowed a short rest before traveling almost 10 miles to the banks of the Big Lost River in order to water their weakened weary animals.

Approximately 11 miles of Goodale's Cutoff traverses the southwestern section of the INL. Intensive survey and evaluation was conducted on this segment in FY 2016 using Federal Trail Data Standards In July of 1862, 12-year-old Nellie Slater, traveling from the Big Butte to the Big Lost River wrote about the journey and the landscape, while describing her father's demise and eventual burial along Goodale's Cutoff (Slater 1832). Using Nellie Slater's description of the landscape and conducting pedestrian surveys, a few potential gravesite locations were located. With the assistance of Anne Christensen and licensed cadaver dogs, Kessa and Rocco, two graves were confirmed in the general vicinity and description based on the Slater journal.

Cadaver dogs, Rocco (top), and Kessa (bottom) with trainer Anne Christensen.

Projection of Activities and Accomplishments

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 and stakeholders will continue to implement the INL CRMP to ensure that they are considered in the implementation of Agency missions and long term land use planning.

Archaeological Properties:

Research designs outlining sampling and analysis of artifacts and paleontological remains will be employed to reveal additional information regarding prehistoric occupation and climate change as reflected in the isotopic signatures preserved in the bones of large game recovered from excavation. Specific projects will encompass: an updated predictive model; archaeo-climate study, combing isotopic data with x-ray florescence (XRF) based volcanic glass archaeo-tool material sourcing; development of archaeological contexts for Native American archaeological resources; development of historic contexts for pre-1942 historic archaeological resources; and continued research on Goodale's Cutoff. In addition, agency and university collaborations, focusing on the untapped archaeological potential present at INL, have been identified. Agency collaborations include the U.S.

Department of the Interior, the U.S. Bureau of Land Management (BLM), and the U.S. Forest Service; university collaborations include the University of Utah.

Historic Architectural Properties:

In addition to the EBR-I NHL remaining open as a public outreach opportunity for INL, specific projects related to historic architectural properties over the next three years include: review and update of the INL architectural inventory and expansion of the historic context for nuclear research; Heritage Documentation for Signature and Category 1 historic architectural properties and landscapes; review and update NRHP documentation and preservation plan for EBR-I; and establishment of an INL oral history program.

Lawrence Livermore National Laboratory

Introduction

Lawrence Livermore National Laboratory (LLNL) is a secure government-owned and contractor-operated (GOCO) national laboratory in which public access is strictly controlled. It is operated by both Department of Energy program offices and the 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 (PA) was drafted and submitted by DOE to articulate the management of these properties and ongoing assessment activities.

The B865 Complex was built specifically to house the Advanced Test Accelerator (ATA) to investigate the feasibility of directing intense electron beams through atmosphere for use as a defensive weapon.

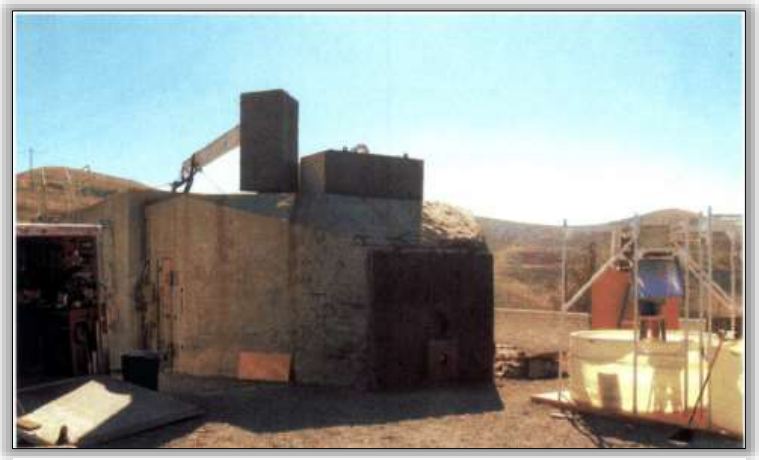
DOE and LLNL comply with and will continue to comply with Section 106 of the National Historic Preservation Act. DOE/NNSA is proceeding with necessary consultation under that law as it considers the demolition of Buildings B280, B850 and B865A, as well as facility remodels and equipment upgrades and disposals in B332, B391, B851A, and the Process Area Historic District at Site 300. NNSA will continue to negotiate appropriate resolution of adverse effects for historic properties with the California SHPO and ACHP. In addition, LLNL has well-developed process for pre-reviewing any excavations and building modification plans to assess adverse impacts to cultural resources and

implement any necessary mitigation activities. These processes include public outreach when required to solicit public interest with the public or other agencies.

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.

Three-Year Progress Overview

Over the past three years, preservation via recordation has been initiated for five NRHP eligible properties to mitigate potential impacts from DOE's need to refurbish facilities, to replace outdated programmatic equipment, update security equipment, and to provide employees with modern services and safety requirements. In accordance with Section 111 of the NHPA, recordation has been prepared in the form of Historic American Building Surveys and/or Historic American Engineering Records. These recordation efforts have included B858, the Advanced Test Accelerator; B391, the Nova Facility; B332, The Plutonium Facility; and B850 and B851A, and the Hydrodynamic Test Facilities District.



The Firing Facility at B851A was engaged in hydrodynamic testing of non-fissionable nuclear weapons components and devices in support of the LLNL weapons program during the Cold War.

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*.

Projection of Activities and Accomplishments

There are plans to eventually 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 in accordance with Section 110 of NHPA will take place with the next site-wide National Environmental Policy Act review which is likely to be initiated in the next five years.

Activities expected to be undertaken in the next three years include the submittal of historical reports for SHPO concurrence as mitigation for the proposed D&D of B280, and for equipment and building upgrades and remodels to the Process and Chemistry Area Historic District. These facilities will then no longer be NRHP eligible.

Table 1- Current Status of Properties Considered NRHP-Eligible

Building or District	Year Built	Description	Criterion	Current Status	NRHP Eligibility
Building 194	1958	100-MeV Electron-Positron Linear Accelerator Facility	A and C	Active research facility. Recordation via HABS/HAER documentation is complete.	NRHP Eligible
Building 280	1958	Livermore Pool-Type Reactor	A	Proposed for D&D. HAER documentation completed as mitigation. Consultation in process.	NRHP Eligible
Building 332	1961	Plutonium Facility	A and C	Active research facility. HABS documentation completed as mitigation for upgrades and remodels.	No longer NRHP Eligible
Building 391	1976	Nova Facility	A and C	Active research facility. HABS documentation completed as mitigation for upgrades and remodels.	No longer NRHP Eligible
Building 865A	1980	Advanced Test Accelerator	A and C	Proposed for D&D. HAER documentation completed as mitigation.	No longer NRHP Eligible
Building 174 Objects	1974	Janus laser and control panel	A and C	No change since original assessment. Active research facility.	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,	A	Most buildings in active use. Preparation of HABS documentation in process as mitigation for upgrades and remodels.	No longer NRHP Eligible
Site 300 Hydrodynamic Test Facilities Historic District	1955	Hydrodynamic Test Facilities Area: Buildings 850 and 851A	A	HABS/HAER documentation completed as mitigation for upgrades and remodels to B851 and D&D of B850.	No longer NRHP eligible

Office of Legacy Management

Introduction

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) was established December 15, 2003, to manage DOE's environmental legacy responsibilities, primarily related to the activities of DOE and its predecessor agencies during World War II and the Cold War. This legacy includes responsibilities for long-term management of properties (legacy sites) that contained radioactive and chemical waste, environmental contamination, and hazardous materials where active remediation is complete, but where residual risks may remain. As of June 2017, LM manages 92 sites in 28 states and Puerto Rico, with more sites being transitioned into LM's portfolio over the next five years. Ownership status varies among LM sites. At many of its sites, LM has responsibilities related to property that it does not own.

Most of the sites under LM responsibility are either former uranium milling sites covered under the Uranium Mill Tailings Radiation Control Act (UMTRCA) or sites associated with the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. Many LM sites related to the Manhattan Project and early AEC are privately owned and addressed under the Formerly Utilized Sites Remedial Action Program (FUSRAP). Other sites under LM responsibility include four Defense Decontamination and Decommissioning Program sites; nine underground nuclear testing activity sites (Nevada Offsites); eight sites remediated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and/or the Resource Conservation and Recovery Act (RCRA); and a number of other remediated sites.

LM also manages the Uranium Leasing Program (ULP), which involves lands withdrawn from the public domain. Thirty-one lease tracts, totaling 25,000 acres, are located in the Uravan Mineral Belt in southwestern Colorado. Due to an injunction preventing active mining, only limited maintenance activities occur on a few lease tracts at this time. Abandoned mines and associated areas contain structures, such as mine portals, and mining-related items that may have historic or cultural significance. LM, supported by the LM Support contractor, partners with the U.S. Department of the Interior, the Bureau of Land Management (BLM), and the Colorado State Historic Preservation Officer (SHPO) to identify and evaluate historic properties on ULP tracts, as needed.

Archaeological surveys are often required before making decisions about proposed activities. Archaeological surveys are obtained as needed for proposed work locations in previously unsurveyed areas as part of the Section 106 consultation process. Qualified archaeological companies are contracted, as needed, to conduct archaeological surveys (Class I or Class III) to address site-specific proposed actions. Architectural history studies are currently prepared in-house.

DOE LM Facilities

The use of historic properties within LM is limited by how few historic properties are under LM ownership or are otherwise available to LM.

Approximately half of LM sites are "records only," where it retains only the responsibility to control and maintain records of past activities. Many of the other LM sites consist of an engineered disposal cell containing contaminated materials, covered with an engineered earthen or rock cover, and surrounded

by a buffer area of largely undisturbed land. Typical activities at these sites include inspections, groundwater monitoring, maintenance activities, and noxious-weed control. Occasionally, these sites require modifications to the groundwater monitoring well network, erosion control, or other maintenance, such as road and fence repair. The LM CERCLA/RCRA sites may also require inspections, groundwater monitoring, groundwater treatment, noxious-weed control, new groundwater monitoring wells, erosion control, and other activities.

Regarding LM sites that have disposal cells, the proposed locations of the engineered cells, and associated ground-disturbing activities, were surveyed for archaeological resources prior to disturbance. Important sites were avoided or removed before construction activities began. At smaller sites where the cell occupies most of the property, this resulted in a 100 percent site survey. However, complete archaeological surveys were often not performed for the large sites. The majority of buildings and structures associated with these disposal sites have been erected since 1985 and none are old enough to merit evaluation for historic significance at this time.

DOE is the lessee of historic buildings located within the Department of Energy Grand Junction Office Historic District in Colorado. DOE leases nonhistoric buildings and nonhistoric trailers at 12 locations, nine of which are co-located on LM sites. The buildings and trailers are used as visitors and interpretive centers, storage sheds, office spaces, records storage buildings, and warehouses.

The Fernald Preserve, Ohio, site is the location of a former uranium processing facility that was cleaned up under the CERCLA. The Fernald Preserve Visitors Center is a 10,000-square-foot Leadership in Energy & Environmental Design (LEED) platinum-certified, green building that was converted from a former warehouse on the site. The Visitors Center celebrates the rich and varied history of the Fernald site. Information on the site's natural, Native American, settlement and farming, uranium production, and environmental cleanup eras, as well as the recent ecological restoration and legacy management mission, is presented through a series of exhibits. Admission to the Visitors Center is free, and meeting spaces at the facility are also available for no charge to local organizations.

The Weldon Spring Site, Missouri, is the location of a former uranium materials plant. The Weldon Spring Site Interpretive Center represents a window to the past and the LM's commitment to the future through long-term surveillance and maintenance of the Weldon Spring Site and a strong community partnership. The Center houses exhibits that present a photographic history of the Weldon Spring area, the towns that once occupied this area, and the site's historical contributions. It also details progression of the site cleanup process and construction of the 45-acre disposal cell and communicates the legacy of the site to current and future generations. Educational and outreach programs, tours, research opportunities, and volunteer opportunities are provided by the Center.

Decommissioned nuclear reactor building, Piqua, Ohio. January 2017.

DOE owns a decommissioned nuclear reactor located in Piqua, Ohio, and manages the reactor building as a historic

property. LM is evaluating the facility for its historic significance. DOE leases the property at no cost to the City of Piqua, Ohio, and the city will take ownership of the property when the lease expires as per the original lease agreement. DOE retains responsibility for long-term stewardship of the radiological materials entombed onsite within the reactor core to ensure protection of human health and the environment. The City of Piqua is responsible for facility maintenance and upkeep as part of their lease arrangement.

While not funded by the DOE, the Puerto Rico Electric Power Authority (PREPA) operates a public museum at the LM's Boiling Nuclear Superheater (BONUS) decommissioned reactor site in Puerto Rico. PREPA has a formal agreement to allow controlled public access to the Dr. Modesto Iriarte Technological Museum, located at the BONUS reactor site in Rincón. The museum provides visitors with one of the best available educational examples of a demonstration reactor.

Three-Year Progress Overview

No new historic properties or other cultural resources were identified on LM sites during this reporting period. A total of 197 archaeological sites have been identified since the beginning of the LM cultural resources management program. Of these, 20 were determined to be historic properties, thereby meriting protection under the National Historic Preservation Act of 1966 (NHPA) and/or the Archaeological Resources Protection Act.

In 2015, LM created a program analyst position to serve as a historian for LM to promote awareness of historic property, cultural resources, and the histories associated with LM sites. The program analyst is also responsible for maintaining and updating LM's *Cultural Resource Management Plan* (CRMP).
On July 26, 2016, a 25.2-acre portion of the Department of Energy Grand Junction Office complex was listed as a district on the National Register of Historic Places (NRHP) in recognition of its significance during the Manhattan Project and Cold War. The complex traces its origins to 1943, when the U.S. government purchased a former gravel mine and log cabin as a uranium-processing site for the U.S. Army Corps of Engineers Manhattan Engineer District (MED). LM leases part of the DOE Grand Junction Office Historic District, which is now owned by Riverview Technology Corporation (RTC). On February 1, 2017, LM received Colorado's first State Historic Preservation Officer's Award in recognition of the nomination of the DOE Grand Junction Office to the NRHP.

2017 State Historic Preservation Officer's Award ceremony at the History Colorado Center on February 1, 2017. Pictured L to R: William Frazier (LM), David Shafer (LM), Padraic Benson (LM), John Horn (Alpine Archaeological Consultants, Inc.), Dr. April Gil (LM), Jon Maraschin (Riverview Technology Corporation), and Sam Marutzky (LM Support). Photo courtesy of History Colorado.

In 2016, a full-time Principal Representative to the Manhattan Project National Historical Park was hired by LM. Established November 10, 2015, the Manhattan Project National Historical Park (MAPR) is managed through a collaborative partnership by the U.S. National Park Service (NPS) and DOE to preserve, interpret, and facilitate access to key historical resources associated with the Manhattan Project. LM is the lead DOE office in working with the NPS on development of the Park.

In 2017, LM established a webpage dedicated to LM sites that have associated listings on the NRHP and/or associated structures recorded by the Historic American Engineering Record program in recognition of their importance in American history. The webpage is located at https://energy.gov/lm/sites/historic-sites.

Also in 2017, LM prepared a Historic Building Survey for the decommissioned reactor building in Piqua, Ohio. City of Piqua staff and Ohio SHPO staff were active partners to LM in identifying and evaluating the Piqua decommissioned reactor building as a potentially eligible site for listing on the National Register of Historic Places. City of Piqua staff facilitated a site visit, provided an extensive tour of the facility, and assisted in archival research. Personnel from the Piqua Public Library provided hours of assistance in working through the extensive city archives on file at the downtown library. Library personnel also provided copies of documents and digital copies of historic photographs that were significant in the development of LM's historic building survey. Ohio SHPO staff provided important documents regarding previous evaluations made of the Piqua decommissioned reactor building.

The Fernald Preserve near Harrison, Ohio, has an active Programmatic Agreement (PA) concerning cultural resources management (CRM) at the location, which was signed in 1996 and 1997 by the U.S. Department of Energy (DOE), the Ohio SHPO, and the Advisory Council on Historic Preservation (ACHP). As required by the agreement, LM must submit a summary of its archaeological activities at the site. Recently, the requirement to submit the report annually was revised to be provided as needed. No archaeological investigations were conducted at the preserve during this reporting period.

The DOE ULP has an active PA, which was recently reviewed by the signatory parties and extended for two more years. The PA concerns CRM activity during the life of the leasing program, and it was signed by LM, the BLM, the Colorado SHPO, and the Zuni Tribe. Due to an injunction, the ULP has been limited during this reporting period. During the current reporting period, personnel conducted scheduled, routine reconnaissance of mining leases and geologic and geographic features. However, no new historic property was identified at any of the ULP lease tracts. The BLM, as the federal surface-management agency, is responsible for managing all non-DOE lease-related activities.

The LM Support (LMS) contractor created a new course on cultural resources awareness and made it required training for most field employees. The LMS contractor course has been provided to LM for their modification and use as a training tool. LM and the LMS contractor are including consideration of historic properties on project planning tools such as the Environmental Review Form and the Project or Activity Evaluation Form, respectively. Once the Environmental Review Form has been finalized, the LMS contractor will incorporate newly developed form into their evaluation of proposed projects, as appropriate.

Projection of Activities and Accomplishments

In Piqua, Ohio, an LM-owned decommissioned nuclear reactor building is expected to undergo abatement of lead based paint and asbestos. A historic building survey was prepared to provide knowledge of important historic elements found within the building to facilitate preservation and the use of appropriate replacement materials. The survey resulted in the LM determination that the Piqua decommissioned reactor building is eligible for inclusion in the National Register of Historic Places under Criterion A, for its association with important aspects of American history, and under Criterion C for its architectural and engineering qualities. If this finding has been confirmed by the Ohio SHPO, LM will nominate the decommissioned reactor building for listing on the National Register of Historic Places.

In Miamisburg, Ohio, near Dayton, LM is assisting in the development of a heritage tourism destination. LM has entered into a Cooperative Agreement with Dayton History, Dayton's leading historical organization, to develop the Mound Cold War Discovery Center. Under the terms of a separate Memorandum of Agreement, Dayton History will lead a partnership with LM, the Mound Development Corporation, and the Mound Science and Energy Museum to remodel an existing facility and develop new interpretive exhibits. The Mound Development Corporations is the landlord of the Mound property and the Mound Science and Energy Museum is a nonprofit comprised of former DOE Mound site employees.

In Colorado, LM is planning to turn a log cabin located at the DOE Grand Junction Office Historic District into a destination for heritage tourism. The cabin was used by the Manhattan Project. Throughout planning, LM has engaged with the property owner, the RTC; the Museums of Western Colorado; the Grand Junction Historic Preservation Board (GJHPB); Mesa County; and the Colorado SHPO.

The log cabin at the GJO. This National Register-listed historic property is being renovated to serve as a learning center for its location and contributions to World War II and Cold War history.

Also in Colorado, in accordance with the Rocky Flats National Wildlife Refuge Act of 2001, DOE entered into an agreement with the U.S. Fish and Wildlife Service (USFWS) to construct a multipurpose building on refuge land that will contain exhibits about DOE's past national defense mission, their continuing long-term surveillance and maintenance activities, and USFWS wildlife and habitat management activity at the site.

In New Mexico, LM is planning to nominate its Gasbuggy site for listing on the National Register of Historic Places. This site was previously determined to be eligible for listing by its property owner, the U.S. Forest Service (USFS). The proposed work is being coordinated between LM and USFS.

LM has also established the following short- and long-term cultural resource management goals that are intended to fill in data gaps; streamline NHPA Section 106 consultation for individual sites or for states with multiple sites; and fulfill LM's NHPA Section 110 responsibilities.

1. Continue to evaluate properties where LM has long-term surveillance and maintenance responsibilities to determine if they contain buildings, structures, monuments, landscapes, or objects that are eligible for listing on the NRHP.
2. Consider developing programmatic agreements with applicable SHPOs, Tribal Historic Preservation Officers, and other interested parties if warranted.
3. Obtain copies of relevant cultural resource management reports from Uranium processing sites addressed by Title II of Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) prior to their transfer to LM. These sites were commercially owned and regulated under a U.S. Nuclear Regulatory Commission (NRC) or NRC agreement state license. Knowledge of existing historic property, locations, and site qualities allows LM to manage these sites effectively once they are transitioned.
4. As necessary, conduct appropriate cultural resource inventory work or other technical studies of unevaluated buildings and structures of sufficient age to merit evaluation at unsurveyed portions of LM sites.
5. Continue to digitize LM's, hard copy, cultural resource data into a Geographic Information System database (https://energy.gov/lm/sites/historic-sites, "Historic Sites").
6. Add data for new cultural resources to applicable LM records.

Los Alamos National Laboratory and Field Office

Introduction

The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Los Alamos Field Office (Los Alamos Field Office) manages Los Alamos National Laboratory (LANL or the Laboratory). Los Alamos National Security, LLC (LANS) is the Management and Operations contractor at LANL. The Laboratory 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 approximately 40 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 47 designated technical areas. For more than 70 years, LANL has developed scientific and technological advancements in the areas of nuclear weapons development, nuclear stockpile stewardship, alternative 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 diverse natural environment and rich historical setting.

Overview of the Pajarito Plateau, Los Alamos, New Mexico

In consultation with the New Mexico State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, the Los Alamos Field Office established streamlined Section 106 procedures for compliance with the National Historic Preservation Act. These were included in the *Programmatic Agreement Between the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office, and the Advisory Council on Historic Preservation Concerning Management of the Historic Properties of Los Alamos National Laboratory*. The LANL Cultural Resources Management Plan 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 (*A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico*). The Laboratory has a staff of cultural resources specialists who meet the qualifications set forth in the *Secretary of the Interior's Professional Qualification Standards* or who work under the supervision of individuals who meet these qualifications. As of March 2017, approximately 90 percent of LANL property has been subject to intensive surveys.

About 1,900 archaeological sites (primarily Ancestral Pueblo in origin—dating from the thirteenth through fifteenth centuries) and about 450 historic buildings (dating from the Manhattan Project and Cold War eras) have been identified during these surveys.

Three-Year Progress Overview

In compliance with Section 106 of the National Historic Preservation Act, the Los Alamos Field Office and LANS cultural resources staff continued to evaluate proposed Laboratory projects from fiscal years (FYs) 2015 through 2017 for impacts to historic properties situated on LANL lands. The identification and management of LANL's most significant historic properties, as stipulated in Section 110 of the National Historic Preservation Act, has also continued to be a programmatic priority. Additionally, the Los Alamos Field Office consults with neighboring Pueblos on the identification, management, treatment, and protection of archaeological sites, traditional cultural properties, human remains, and sacred objects in compliance with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and other federal regulations. Other accomplishments from this period are summarized under the categories of Cultural Heritage Outreach and Public Education and Rehabilitation/Restoration Projects.

Cultural Heritage Outreach and Public Education

There were a number of notable cultural heritage outreach and public education accomplishments during FYs 2015 through 2017. As part of implementing the National Historic Preservation Act, LANS cultural resources staff continue to give presentations and site tours that focus on cultural resource compliance, awareness, historic properties, and historic preservation activities at LANL. Legislation authorizing the Manhattan Project National Historical Park (Park) was signed by President Obama on December 19, 2014. Since then, LANS cultural resources staff have supported the implementation of the Park by assisting with the development of the Memorandum of Agreement between the Secretary of Energy and the Secretary of the Interior that established the Park in November 2015, participating in the DOE Scholars Forum, contributing to the National Park Service Foundation Document for the Park, and helping delineate the first Park boundaries and associated historic sites at three LANL technical areas. LANS cultural resources staff have also been a part of planning and executing a variety of public education projects related to the new Park and to LANL's cultural resources program.

Tsirege Pueblo

Tours of historic properties (including archaeological sites and historic buildings) are given to a variety of public, professional, and government groups by LANS cultural resources staff. In FYs 2015 through 2017, there were annual tours of Tsirege Pueblo for more than 100 members of the general public, tours for smaller groups like the Pueblo de San Ildefonso summer youth program, and public presentations at the Bradbury Museum. Presentations focusing on the cultural resources at LANL were provided to a variety of audiences including LANL employees, educational

institutions, other federal agencies, and federal regulator groups including New Mexico SHPO staff. Historic buildings and archaeological site tours were provided to various DOE groups including:

- Legacy Management staff
- Los Alamos Field Office staff and General Klotz, head of the NNSA
- LANL groups (including yearly tours for the LANL Student Association)
- National Park Service staff
- Congressional staff
- Other local groups, such as the Albuquerque Archaeological Society.

The Los Alamos Field Office and LANS archaeologists routinely meet with their professional peers (e.g., Bandelier National Monument and U.S. Forest Service archaeologists) several times a year as part of a subgroup of the East Jemez Research Council, a regional organization. LANS cultural resources staff also present annually on various aspects of LANL's cultural resources program at the Society for American Archaeology conference.

Media requests were also supported during this time. Notable highlights include several interviews for Japanese television programs and for local and state-wide radio stations and newspapers related to the new Park. Staff were also interviewed about Women's History Month and spoke to media outlets regarding the development of a new educational Apple and Android application that provides a way to virtually experience the Manhattan Project of the 1940s at Los Alamos.

LANS cultural resources staff have been active participants in Los Alamos community dialogues regarding the Manhattan Project National Historical Park and they continue to 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 Park presentations at public meetings, community lectures and events, university venues, professional conferences, and at Energy Community Alliance meetings. From June 1 through 4, 2015, staff hosted the Park planning team, including high-level National Park Service and DOE managers, for a four-day meeting at Los Alamos with tours of historic building areas, including off-site tours to Trinity Site. Tours of LANL and townsite Manhattan Project properties and a public open house were part of the June planning visit. This visit also included the preparation of pamphlets, safety publications, graphics, conceptual maps and posters. A second high-level tour of LANL historic building areas was arranged on July 15 and 16, 2015, for David Klaus, DOE Headquarters, and Victor Knox, National Park Service. In 2016 and 2017, staff supported the development of National Park Service pamphlets to supplement the downtown walking tour experience and also updated the LANL brochure, *History & Legacy of the Manhattan Project at Los Alamos National Laboratory*, which is given out during official tours and visits to LANL.

Public education during FYs 2015 through 2017 included the continued development of outdoor informational panels, monuments, and kiosks, such as the installation of trail kiosks in LANL Technical Areas (TAs) 70 and 71, the preparation of an interpretative exhibit for LANL employees on the cultural and biological resources of the Pajarito Plateau, and the preparation of the upcoming Fieldhouse Context Project by LANS cultural resources staff. The Fieldhouse Context Project is an alternative mitigation requirement that will synthesize archaeological data on fieldhouses (a specific type of archaeological site) located within the boundaries of LANL, Bandelier National Monument, the Valles Caldera National Preserve, and adjacent lands in northern New Mexico. The goal of this creative mitigation is to increase knowledge of Ancestral Puebloan agricultural systems from A.D. 1200 to 1600 and appreciation of the local archaeology of northern New Mexico.

A new exhibit entitled *Environmental Research and Monitoring Highlighting Archaeology, Wildlife Biology, and Climate Change* opened at the Bradbury Science Museum in September 2014. The environment exhibit focuses on the rich history and current archaeology, biology, and local climate research at the Laboratory. LANS cultural resources staff worked with other divisions from across the Laboratory, the Four Accord Pueblos, and Bradbury Museum staff to create this exhibit. The exhibit uses posters, interactive elements, and videos to highlight the Laboratory's research into the diverse local archaeological and biological resources, local climate research, and the Laboratory's environmental sustainability activities.

Laboratory employee visiting the Environmental Research and Monitoring Highlighting Archaeology, Wildlife Biology, and Climate Change exhibit at the Bradbury Science Museum

The exhibit's elements include three new interactive, digital applications (apps). The first app allows museum visitors to identify various species of bats and owls living within habitats on Laboratory property, listen to owl calls, and test their knowledge in a quiz. In a second interactive app, visitors are able to explore and learn about the extensive archaeological sites and artifacts identified on Laboratory grounds, dating from 5,500 years ago up to the Manhattan Project era. A third app allows visitors to experience a three-dimensional virtual tour of Nake'muu, an 800-year-old archaeological site with standing masonry walls. The wildlife biology areas of the new exhibit showcase the Laboratory's research and protection efforts of three threatened and endangered species, and large animal and migratory bird studies. The exhibit also shows how current Laboratory research into tree mortality is giving clues to how global climate change will affect our local area, and allows visitors to learn about the Laboratory's energy savings activities.

In 2017, LANS cultural resources staff supported the development of an interactive museum exhibit at the Bradbury Science Museum, entitled *Manhattan on the Mesa*. LANL staff partnered with New Mexico Highlands University's Program in Cultural Technology staff to support the production of 360-degree videos of three Park sites at LANL that are not available to the public, the production of a 15-minute history film about the Manhattan Project at Los Alamos, the development of touch-screen worker profiles, and several new informational panels that feature all nine LANL Park sites, including the properties at Pajarito Site, Gun Site, and V-Site.

Rehabilitation/Restoration Projects

During FYs 2015 through 2017, LANS cultural resources staff conducted field monitoring of significant cultural resources most vulnerable to impacts from vandalism, natural erosion or decay, or mission activities. Following the Cerro Grande Fire Sites Rehabilitation Project (2012) and the Las Conchas Fire Flooding Monitoring Project (2012 and 2013), LANS cultural resources staff continued to support fuels (vegetation) mitigation projects to prevent future damage to historic properties from wildfires. A

number of rehabilitation projects were also completed in accordance with LANL's site monitoring and protection plan that included the installation of soil erosion control measures around historic properties.

LANS cultural resources staff continued surveillance and maintenance monitoring of LANL's most significant Manhattan Project and Cold War buildings and structures during FYs 2015 through 2017. These "Candidates for Preservation" are listed in the LANL Cultural Resources Management Plan and include the 17 Park and Park-eligible properties identified in the Manhattan Project National Historical Park legislation. Rehabilitation work has been ongoing and key accomplishments include the installation of a metal shelter to protect the concrete exterior of the Battleship Bunker (TA-18-2) at Pajarito Site and urgent repairs to the roofs of the Slotin Building (TA-18-1) and Casa 1 (TA-18-23) at Pajarito Site. Other urgent stabilization work was conducted and is ongoing at V-Site, and includes repairs to former building areas (concrete foundations) burned during the May 2000 Cerro Grande Fire, and repairs to the roof drainage systems at the two remaining V-Site buildings (TA-16-516 and TA-16-517). Rehabilitation work at TA-22-1, a Park-eligible quonset hut, included the installation of a temporary membrane roof on the building's World War II-era mechanical room. Urgent repairs to the quonset hut's roof and windows to address water leaks are planned for late FY 2017.

Significantly, LANS staff supported the development of an interagency agreement between the Los Alamos Field Office and the National Park Service for preservation assistance at LANL. Key accomplishments during FY 2017 include the completion of condition assessments and treatment plans for two buildings at TA-18, the Slotin Building (TA-18-1) and the Pond Cabin (TA-18-29), where rehabilitation is planned during late FY 2017 and early FY 2018.

The Pond Cabin at TA-18 (Pajarito Site)

Projection of Activities and Accomplishments

Future program priorities were identified in the 2017 LANL Cultural Resources Management Plan. For FY 2017 and beyond, planned program priorities include: 1) integration of cultural resources priorities with other LANL long-range planning initiatives, 2) continued site inventory surveys and register-eligibility assessments, 3) continued site monitoring and protection, 4) continued outreach and interpretation, 5) emergency procedures and response planning and support, 6) records management, and 7) quality assurance program development. These priorities are in addition to required Section 106 reviews of LANL undertakings as defined in the National Historic Preservation Act and Section 110 priorities outlined in the LANL Cultural Resources Management Plan.

National Energy Technology Laboratory

Introduction

The National Energy Technology Laboratory (NETL) facilitates the responsible and effective use of our Nation's extensive fossil resources. NETL is one of 17 laboratories in the U.S. Department of Energy's National Laboratory System and the only National Lab dedicated to fossil energy research. For more than a century, NETL and its predecessor labs have been at the forefront of technology development, consistently creating safe and environmentally sound technical solutions that satisfy the world's demand for affordable, abundant energy. Today, at state-of-the-art facilities in Pittsburgh, Morgantown (WV), and Albany (OR), NETL analysts conduct in-depth energy studies, as researchers develop advanced energy technologies and accelerate their commercialization in the United States and around the world. As the only National Lab that is both government- owned and -operated, NETL is uniquely positioned to cultivate strategic partnerships that accelerate the development of technology solutions. NETL's collaborations with industry, academia, and other government organizations supplement the laboratory's research and energy analysis portfolios. Through this strategic approach, NETL addresses our most compelling energy challenges, creating solutions for today and options for tomorrow.

NETL is distinguished by its strategic focus on applied research programs that are directly linked to the laboratory's aim of driving technology to the marketplace. NETL's research addresses such national energy challenges as developing and deploying advanced energy conversion systems; development of materials, sensors, and advanced computer systems for future energy systems; enhanced natural gas and oil production and environmentally prudent resource development; safe and efficient natural gas transmission and delivery systems; unlocking methane hydrate resources; and carbon management.

NETL's core research competencies include computational science and engineering; materials engineering and manufacturing; geological and environmental systems; energy conversion engineering; systems engineering and analysis; and program execution and integration. NETL also possesses extensive project management capabilities that it uses to shape, fund, and manage research throughout the United States. The laboratory's research portfolio includes more than 900 projects and activities, with a total award value that exceeds $7 billion and private sector cost-sharing of more than $3.5 billion. In addition, NETL conducts studies of large, complex energy systems and the interactions among those systems. Published results of these studies supply analysis and insight that form a technical foundation for the policymakers responsible for providing direction and funds to meet national energy goals.

Three-Year Progress Overview

DOE career professionals of NETL interact with tribal nations and State Historic Preservation Offices in conducting environmental reviews to comply with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA).

NETL projects may be sited in any state across the country, near or adjacent to Tribal trust lands, or to historic properties of religious and cultural significance to tribes off land, as determined by the selection process of funding opportunity announcements from DOE. These projects have ranged from small-scale research projects to large-scale demonstration projects. Because these projects are proposed by private parties seeking federal financial assistance rather than government-directed projects, NETL's interaction with tribes generally consists of seeking input from tribes on the scope of

the environmental reviews and ensuring that potential adverse effects on historic properties of religious and cultural resources of significance to tribes are properly assessed. For these projects, consultation with individual Federally tribes recognizes the government-to-government between the Federal government and Indian tribes.

In 2013, several Tribes were contacted regarding the Pacific Gas and Electric (PG&E) project that was given a NEPA determination that required an environmental assessment (EA) to be completed. More detailed information of the interactions with the various Tribes may be found within the associated final EA. DOE demonstrated its commitment to fulfill its government-to-government responsibilities to the Tribes, and conducted consultations with the federally recognized tribes of California in a respectful and productive way. As a result of these steps, DOE established a clear path for continued engagement with the Tribes throughout the proposed project's NEPA review and project development.

Tribal notifications and communications were initiated for the (PG&E) Compressed Air Energy Storage Testing Project, King Island, San Joaquin County, California for its proposed project to conduct pressure testing of a depleted gas field to confirm its geologic and engineering suitability for future use as the air storage reservoir for a compressed air energy storage (CAES) facility. Tribes requested additional information, a project site visit was arranged for Tribal representatives and Tribal monitoring agreements were implemented for the temporary power upgrade installations.

In 2014, DOE attended in-person consultation meetings with the Buena Vista Rancheria of Me-Wuk Indians and the Ione Band of Miwok Indians at their respective California offices. Also, a project site visit with the Ione Band of Miwok Indians and PG&E was conducted. As a direct result of the consultation process with the Tribes, DOE included conditions to safeguard cultural resources within the signed (May 2014) Finding of No Significant Impact (FONSI). Since 2015, DOE has been communicating and working with the Tribes to complete the ethnographic study as agreed upon in the FONSI.

The NETL site in Albany, Oregon, occupies a 47-acre site near the western boundary of the city. Starting in 1923, the property was the campus of Albany College, one of the earliest colleges in the region. During World War II the property was converted into a federal metallurgical research facility operated by the U.S. Bureau of Mines, and was the site of several important contributions to modern metallurgy. Due to the historic significance of these two points, in 1997 the property was evaluated by the Department of the Interior's Bureau of Reclamation and was consequently found to be eligible for the National Register of Historic Places as an Historic District, by the Oregon State Historic Preservation Office (SHPO).

The site was transferred to the Department of Energy in 1996 and placed under the jurisdiction of NETL in 2005, which continues to operate it today as a working research institution. Research brings with it the associated need for some flexibility in the type of spaces and laboratories required as projects evolve and are completed, and new projects are started. This need, and the ongoing demands of building maintenance, repair, and refurbishment on the campus have the potential at times to affect the preservation of the site's historic qualities. To facilitate and guide this process, NETL and the SHPO entered into a Programmatic Agreement in 2002, which stipulates what maintenance and refurbishing work may be done to buildings and landscape on the campus without the involvement or approval of the SHPO. This partnership with the SHPO continues to this day.

Projection of Activities and Accomplishments

Over the next three years NETL would continue to interact with tribal nations and the respective State Historic Preservation Offices, depending on where the future projects are sited as proposed by private parties seeking federal financial assistance, in connection with environmental reviews conducted to comply with NEPA and NHPA. Also, the Albany site plans to discuss and work with the Oregon State Historic Preservation Office to revise and update the existing programmatic agreement.

National Renewable Energy Laboratory and the Golden Field Office

Introduction

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, advance related science and engineering, and transfer knowledge and innovations to address the nation's energy and environmental goals. The laboratory consists of two sites: the main 327-acre South Table Mountain site (STM) in Golden, Colorado, and the 305-acre National Wind Technology Center (NWTC) located between Boulder and Golden, Colorado. The operation of NREL is overseen by DOE's Golden Field Office.

The STM site is located at the base of South Table Mountain and 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). SERI achieved national laboratory status and was renamed NREL in 1991. Currently, the STM site 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, 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.

Surveys have been completed for 100% of both the STM site and the NWTC, so no further identification of resources is necessary. Due to the age of both of these sites, there are no historic DOE-built buildings or structures over 50 years old or otherwise eligible for inclusion to the National Register of Historic Places. There are no known cultural resources present at the NWTC, and traditional cultural properties have not been identified at either the STM site or NWTC to date. The NREL STM site and the NWTC have each had independent cultural surveys completed for site characterization purposes, but not in partnerships with SHPO or consulting parties. Consultations are conducted on a project-by-project basis, and additional surveys for a project will be conducted if the nature of the project has the potential to unearth cultural resources.

As a result of surveys at the STM site, 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

The locations of the Colorado Amphitheater and Ammunition Igloo on the STM site

amphitheater and stone footbridge listed together as a single site. Neither of these resources are in use by DOE or NREL. Even though the Colorado Amphitheater and Ammunition Igloo are located on a secure campus and do not contribute to the local economy, they are accessible by the public, with prior arrangement. NREL holds regular tours of the STM site which are open to the public, and the history of the campus, including the resources, are highlighted. NREL will also accommodate requests to see the amphitheater and ammunition igloo should they arise. Lastly, half of the STM site (approximately 177 acres) is preserved in a conservation easement where no construction is to occur, with the exception of existing utility easements and trail maintenance. The purpose of the conservation easement is to preserve the natural character of the property, including its natural, scenic, ecological, and historical aspects. Both resources are visible to the public from the trails on the conservation easement which contributes to the natural setting of the site and surrounding area.

The Colorado Amphitheater

The Colorado Amphitheater is a stone structure with seats of concrete placed on stone bases, a concrete center aisle, and a stone projection booth. The stone used is the local volcanic rock which covers the top of South Table Mountain. The structure was built on the natural slope of the hill and is in a heavily deteriorated condition. The stone bridge spans a natural drainage channel adjacent to the amphitheater. It was constructed of the same materials and in the same manner as the amphitheater. The Ammunition Igloo is constructed with a stone façade made with two steps in the style of old western town buildings. The stone and method of construction are similar to that of the amphitheater. The amphitheater and

The Ammunition Igloo

stone bridge are culturally important in their association with Depression-era work projects, a significant period in the history of our nation. The ammunition igloo's significance is an integral component in the operation and mission of Camp George West. NREL considers the amphitheater, stone bridge, and ammunition igloo as potentially significant cultural resources which must be protected from damage, and workers on the STM site must conduct activities to avoid these sensitive areas.

DOE and NREL protect cultural resources in several ways:

- Cultural resource management is integrated into project planning to avoid, minimize and/or mitigate impacts to historic properties and features from the design phase through project completion.
- Procedures are developed and implemented to manage historic features and to protect undiscovered cultural resources and artifacts.
- The cultural resource management program is reviewed every three years to ensure that all procedures and processes are up-to-date and effective.
- Periodic surveys are completed to document the presence or absence of cultural or historic resources while considering project impacts to the human environment. If a survey reveals artifacts, DOE and NREL staff will work with the Colorado SHPO to determine if the artifacts are eligible for consideration as cultural or historic resources.
- Construction contractors are required to provide workers with training to maintain an awareness of the possibility of unearthing archaeological or historic artifacts or other cultural resources and provide guidance on what to do in the event that such resources are discovered. Workers are to stop all work in the vicinity until a qualified archaeologist evaluates the significance of the find. NREL has a contract with an archeology firm to evaluate the site if such a find is discovered.
- Campus planning documents for the STM site specifically protect the two historical sites in a 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 campus development activities routine operations are considered and analyzed in NEPA documents in concert with Section 106 consultations conducted with the Colorado State Historic Preservation Officer (SHPO) and other consulting parties.

Three-Year Progress Overview

In 2014, DOE completed Site-Wide Environmental Assessments (EA) for both the STM site and the NWTC. The NEPA analysis evaluated potential future improvements over the next five to ten years at both sites. At the time the STM site EA was drafted, there was an insufficient level of detail available about the location and design (such as dimensions, architectural features, etc.) of potential future facilities near the cultural resources to properly characterize whether effects would occur or not. The Colorado SHPO concurred with DOE's determination that it meet its Section 106 obligations by initiating consultation on a project-by-project basis as individual activities are proposed. Because there are no eligible historic properties at the NWTC, the NWTC EA analyzed indirect visual impacts to offsite historic properties in the Section 106 consultation process. The Colorado SHPO concurred with DOE's determination that the range of future activities at the NWTC will result in no adverse effect to offsite historic properties.

In 2015, the U.S. Army Corps of Engineers (USACE) contacted DOE to request right-of-entry (ROE) to the STM site. USACE was in the process of conducting an environmental investigation of lands previously used as military training sites, and the STM site, being part of the former Camp George West, was identified as a property to survey for this effort. DOE granted the ROE later that year, and the USACE's contractor conducted their investigation in November 2016. Representatives from DOE and NREL were in attendance during the investigation. The survey was conducted as a hand-held detector-aided visual walking survey to identify any direct munitions evidence on the surface, and no ground disturbing activities occurred during the survey. The contractor did not find any evidence to support the presence of munitions on the conservation easement. Had any munitions been found, they would also have been evaluated for historical significance.

In May 2017, an archeological survey was performed at the NWTC. The survey was needed to assess potential impacts to archeological resources due to a potential utility installation project at NWTC. The survey was performed within a 28 acre area of potential effect centered on an isolated pine-covered ridge with a gradual slope to the east, and the head of a small canyon and a mesa rim to the west. Research of the area and topography suggest it is unlikely that historic or archeological resources were present. Indeed, the survey found no historic or archeological resources within the survey area.

Projection of Activities and Accomplishments

DOE and NREL are considering entering into a Programmatic Agreement with the Colorado SHPO and consulting parties to streamline future Section 106 compliance for activities and operations at the NREL STM site. 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. NREL is currently developing a final plan to navigate the Programmatic Agreement consultation process.

DOE is 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 about one mile in length 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 consult with the Colorado SHPO and other consulting parties per Section 106 of the NHPA.

Nevada National Security Site

Introduction

The Nevada National Security Site (NNSS), formerly known as the Nevada Test Site, was the United States' continental nuclear testing ground from 1951 to 1992. The facility currently covers 1,360 square miles and falls within the Great Basin and Mojave Desert ecosystems and a transitional zone between them. Access restrictions to the federal facility have preserved many cultural resources reflecting a long period of use beginning 12,000 years ago up through the mining and ranching period of the 20th century, after which the NNSS lands were withdrawn for federal use. During the subsequent nuclear testing era, 100 atmospheric and 828 underground nuclear tests were conducted. 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 through the food chain. After 1992, with the end of nuclear testing, the NNSS has remained an active facility. Presently, major missions are National Weapons Science, Global and Homeland Security Programs, and Environmental Management. The National Nuclear Security Administration Nevada Field Office (NNSA/NFO) directs the management and operations of the site.

Since its inception during the 1970s, the NNSS Cultural Resources Management (CRM) program has fulfilled compliance for recording and protecting cultural resources as guided by various federal laws, regulations, executive orders, and DOE policies. Most of this effort has been driven by National Historic Preservation Act (NHPA) requirements to evaluate the potential of adverse effects of NNSS activities on historic properties. Approximately 6 percent of the site lands have been inventoried, resulting in the documentation of more than 2,500 prehistoric and historic archaeological sites and almost 500 buildings and structures associated with the built environment.

Fifteen historic districts have been established over the past 22 years; two of these were recorded within the past three years. Six districts are associated with atmospheric nuclear tests: Frenchman Flat, Apple-2, Smoky, Shasta, Yucca Lake, and the Structural Response Safety Program. Six are associated with underground nuclear tests: U12b, U12e, U12n, U12t, U16a, and U15a/e. Two others are associated with nuclear research programs: Bare Reactor Experiment Nevada (BREN) Tower Complex and the Pluto Control Facility. Finally, the newly documented Mercury Historic District is associated with the town of Mercury on the NNSS.

Heritage tourism for the NNSS consists of monthly public tours to historic nuclear testing locations on the site. In addition, displays at the National Atomic Testing Museum in Las Vegas provide information about these historic resources to the general public. Other tours, particularly for American Indian groups, are conducted to visit the prehistoric and historic properties on the site.

Three-Year Progress Overview

Over the past three years, 2,500 acres were surveyed, resulting in the recordation of 32 historic properties determined eligible to the NRHP in consultation with the Nevada State Historic Preservation

Office (SHPO). These historic properties were documented in response to the closure of buildings, environmental restoration activities, national security projects, plans to modernize the town of Mercury, and NNSS maintenance and operation activities. Therefore, historic property identification in the past three years was completed for project-related compliance activities subject to review and consultation under Section 106 of the NHPA. In addition to Section 106 surveys, preliminary assessments were prepared to identify possible adverse effects to historic resources from environmental restoration activities aimed at cleaning up legacy contamination from historical nuclear testing locations. These consisted of identifying nuclear testing resources based on archival review and field visits and providing historic context to supplement environmental investigations for identifying possible contaminants.

Among the notable recent accomplishments are the recordation of a series of Cold War resources: Shasta Historic District, Control Point 1 (CP-1) Building, the Mercury Historic District (ongoing), and the Mercury Bowling Alley.

- The Shasta Historic District consists of resources associated with the Shasta atmospheric nuclear test. These are: the site of the close-in ground zero area; the 2-300 Bunker complex site with structures that held diagnostic instrumentation; fifteen outlying instrument stations used to collect scientific data, including a Fast Photo Bunker and an underground radiological shelter; and military trenches constructed—but not used—for a troop observation program. The Shasta nuclear device was detonated in August 1957 from the top of the 500 feet tall, 200-ton, T2a steel tower. The primary objectives of the weapons-related test were to evaluate a newly designed device, analyze the nuclear yield and blast, and investigate thermal and nuclear radiation phenomena. Recording of the Shasta Historic District was implemented to evaluate potential adverse effects from proposed corrective actions for environmental restoration in the ground zero area. Using data from archival sources, recording was expanded to include a series of complex and spatially discrete resources. The Shasta Historic District is a discontiguous, geographically defined area of contributing structures and two historic sites unified by the theme of the Shasta atmospheric test.

Fast Photo Bunker used during the Shasta test in 1957. The Bunker was designed to record reaction speed of nuclear detonations and held an electronic streak camera cable of recording images in one billionth of a second.

- CP-1 is a large steel-reinforced concrete building, an example of Brutalist Cold War architecture. The building functioned as the command and control center for nearly all of the nuclear tests on the NNSS. Since the end of nuclear testing in 1992, activities at CP-1 were gradually reduced until 1995 when the building was closed. The survey of CP-1 was prompted by the recognition that closure of the building in place creates a situation where the building is vulnerable to decay in its present unused condition. CP-1 was built in four phases starting in 1951, with facilities for timing and firing nuclear tests, air operations, security, communications, weather monitoring, and radiation safety. At the time of recordation in 2016, CP-1 had 126 rooms. A defining component of the building is the War Room, a concept developed during World War II by the military to efficiently organize information within a central command and control point for operational decision-making. The War Room at CP-1 functioned in a similar manner in order to conduct nuclear tests, the primary purpose of the site.

Control Point Building 1 (CP-1)

- The town of Mercury is the principal entrance to the NNSS. Its origin and history are inexorably linked to the Cold War and the development of the nuclear testing program. Beginning in 1951, Mercury provided a wide range of support activities and initially was made up of temporary or easily demountable facilities such as trailers, Quonset huts, and larger prefabricated metal buildings. Gradually, frame and some cinderblock buildings were introduced. By 1965, Mercury was a self-contained town with facilities, services, and amenities for personnel working on the NNSS. These included administration buildings, housing, support facilities, medical services, social and recreational amenities, a post office, and cafeteria. Planning is underway to modernize Mercury with the objective to develop sustainable infrastructure and construct new facilities providing a smaller, more efficient footprint while at the same time meeting future mission needs. NNSA/NFO acknowledges modernization activities will be within the potentially eligible National

Mercury Historic District

Register of Historic Places (NRHP) Mercury Historic District and supports the ongoing recordation and evaluation as well as implementing future agreed-upon mitigation strategies to resolve adverse effects.

- The Mercury Bowling Alley is a contributing resource to the Mercury Historic District, but is also a building determined to be individually eligible to the NRHP at the local level of significance. The building was designed by the prominent Reno, Nevada architectural firm Sheldon and Stewart Architects and Planners. Two years prior to construction of the Bowling Alley in 1963, the firm executed a larger commission in Reno, Nevada for the Starlight Bowl. The Mercury Bowling Alley shares characteristics of architectural style with the Starlight, a remarkable Googie design. Googie describes a form of modern architecture with a "space age" building style. In Mercury, this style diverged significantly from the more utilitarian style of most of the buildings.

Mercury Bowling Alley showing Googie architectural style

NNSS cultural resource data management integrates a geographic information system (GIS) database to access, update, analyze, and manage the inventory and cultural resources. Recent accomplishments are developing multiple data layers for identifying and analyzing the built environment associated with nuclear testing. GIS-generated layers representing nuclear test locations, drill holes, stations associated with atmospheric testing, historic military trenches, and others have been established and will be updated as new information becomes available. The GIS database, in conjunction with paper records, allows NNSS CRM program to anticipate many of the cultural resources encountered in the field, greatly improving our field efficiency and streamlining field effort. For example, layers developed from archival records such as instrument charts and engineering site plans provide data about the pre-test instrumentation and test plan layout for nuclear tests. This provides a comparative basis for accurately and efficiently identifying and describing nuclear testing resources on the landscape.

The American Indian Consultation Program (AICP) involving 16 culturally affiliated tribes is administered by the NNSS CRM program. The AICP began in 1991 and operates in accordance with directive DOE O 144.1, "American Indian Tribal Government Interaction Policy" that identifies guiding principles and provides a framework for interacting with American Indian and Alaska Native Tribal Governments. For the NNSS, participating American Indian tribes work together through the Consolidated Group of Tribes and Organizations (CGTO) comprised of Southern Paiute, Western Shoshone, and Owens Valley Paiute-Shoshone to review proposed projects and monitor sites to protect irreplaceable resources. In 2016, expanded tribal involvement was initiated with a formal review process for proposed projects. This process

provides the opportunity for input from the CGTO prior to project implementation. For example, at a proposed project location to drill three holes in the vicinity of a NRHP-eligible prehistoric site, tribal representatives participated in a site visit and identified approaches for avoiding or minimizing disturbance to culturally sensitive resources. As a result, CGTO recommendations were incorporated into the final project design. The CGTO also participates in the monitoring program at culturally significant prehistoric and historic locations and contributes to reporting. An important example is recent monitoring at the prehistoric and ethnohistoric Ammonia Tanks site. This site was initially noted in a 1938 publication and was studied in 1996, but was never fully recorded. Participation in the monitoring activity allowed the CGTO to make recommendations about future plans to record this culturally important site.

Rock shelter at the Ammonia Tanks site

Strong working relationships with SHPO and the CGTO are maintained by the NNSS CRM program to assist with identifying, evaluating, and protecting historic properties. Recently, the NNSA/NFO has engaged in more active consultation with the SHPO, particularly concerning procedures to more effectively record Cold War resources. Improvements have also been made in the cultural resource review process initiated by National Environmental Policy Act checklists.

The NNSS poses complex challenges for cultural resources and historic preservation because of its nationally significant Cold War record of nuclear testing. More and more, new NNSS projects are utilizing areas within old testing locales, increasing the frequency for the need of Section 106 evaluations. While this provides opportunities for identification and protection, recordation and consultation need to be completed efficiently to meet mission schedules. For example, for a series of seismic studies projects in Yucca Flat, a geographic area where from 1951 to 1992 a total of 742 nuclear tests were conducted, the survey, recordation, and evaluation of numerous testing resources in advance of mission schedule were required. Recorded historic properties included: military trenches, instrument stations, blast towers, gauge stands, subsidence craters from underground nuclear tests, foundations for various buildings, and a facility used for decontamination during testing, among others.

A curation facility in the Desert Research Institute (DRI) Frank H. Rogers Building, also home to the Smithsonian-affiliated National Atomic Testing Museum, is maintained by NNSA/NFO for archaeological curation and records management of prehistoric and historic artifact collections from the NNSS and associated records. DRI manages the artifact collections and associated records in accordance with professional museum standards and provisions of 36 CFR Part 79. The curation facility is monitored and artifact catalog and accession records databases are updated on a regular basis.

Projection of Activities and Accomplishments

Over the next three years, the NNSS CRM staff will continue to implement projects to meet compliance with regulations and provide evaluations to determine the effects of projects and programs to cultural resources. To ensure effective compliance, the NNSS CRM staff meet the Secretary of the Interior's Standards for historic preservation. All staff undergo training in Section 106 and Section 110 and will participate in additional historic preservation and CRM training seminars. The NNSS CRM program also plans to conduct (if funding is available) NEPA Section 110 documentation to identify and protect important cultural resources at atmospheric and nuclear testing locations as well as important prehistoric, ethnohistoric, and early historic sites. Possible examples are: the Icecap ground zero emplacement—scheduled for a 1993 test, but not conducted due to the U.S. moratorium on nuclear testing leading up to the Comprehensive Test Ban Treaty; the Grable nuclear cannon location; the Ammonia Tanks and Wungiakuda prehistoric/ethnohistoric sites; and various mining sites. A key initiative will be identification of NNSS areas that have significance as Traditional Cultural Properties. Finally, historic properties will continue to be monitored on a rotating basis through the years, with SHPO site- and architectural-resource forms updated to document current conditions and any noted changes due to natural or cultural factors.

Another goal (based on funding availability) would be to update the cultural resources management plan to include developing up-to-date prehistoric, historic, and Cold War historic contexts and research questions for historic properties. In tandem with this effort, to address the complexities of the NNSS built environment and to streamline compliance while preserving important historic resources, the NNSS CRM program would work with the SHPO to structure a site-specific Programmatic Agreement (PA). In the past, the Section 106 process has been implemented on a project-by-project basis. This approach has the potential risk of leading to costly delays in mission schedules. The PA would tailor the Section 106 process to establish a balance between NNSS mission needs and to better manage and protect historic properties.

In addition to a site-specific PA, the NNSS CRM program may develop a PA for the geographic area encompassing the Mercury Historic District with two key priorities: 1) to outline mitigation at each phase of the proposed Mercury Modernization project, and 2) to develop and implement a mitigation plan to preserve the Mercury Historic District as a whole. Preservation via recordation for the NRHP-eligible Mercury Bowling Alley property will be initiated in the form of Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation, production of public outreach fact sheets, and salvage of sections of the Mercury Bowling Alley lanes for incorporation and eventual display in a new building in Mercury.

Oak Ridge Reservation

Introduction

The U.S. Department of Energy's (DOE) Oak Ridge Reservation (ORR) is located on approximately 33,500 acres in East Tennessee. The reservation was established in the early 1940s by the Manhattan District of the U.S. Army Corps of Engineers, and the site played a vital role in the production of enriched uranium and pioneering methods for producing and separating plutonium during the Manhattan Project and Cold War. The ORR is one of DOE's most complex sites; it encompasses three major facilities managed by three DOE Program Secretarial Offices who perform every mission in the DOE portfolio. Today scientists at the Oak Ridge National Laboratory, DOE's largest multipurpose national laboratory, conduct leading-edge research in advanced materials, alternative fuels, climate change, and supercomputing. The Y-12 National Security Complex is vital to maintaining the safety, security, and effectiveness of the US nuclear weapons stockpile and reducing the global threat posed by nuclear proliferation and terrorism. The East Tennessee Technology Park, a former uranium enrichment complex, is being transitioned to a clean, revitalized industrial park.

Aerial view of the Oak Ridge Reservation

Pursuant to the *Programmatic Agreement Among the Department of Energy Oak Ridge Office, The Tennessee State Historic Preservation Officer, and the Advisory Council on Historic Preservation Concerning Management of Historical and Cultural Properties at the Oak Ridge Reservation* a Cultural Resource Management Plan was prepared. The DOE ORR Cultural Resource Management Plan provides a mechanism by which the DOE ORR will comply with cultural resource statutes, address cultural resources in the early process of its undertakings, and implement necessary protective measures for its cultural resources prior to initiating undertakings on the evaluated 254 structures of which forty-one are National Register of Historic Places (NRHP) Eligible Properties and six are included in the NRHP.

The coordinated ORR triennial input for the Executive Order 13287, Department of Energy Preserve America Report includes site narratives from the Oak Ridge Office of Environmental Management, the Oak Ridge National Laboratory Site Office and the Y-12 Nuclear Production Office highlighting historic and preservation work activities, progress overview and accomplishments.

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 to 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.

Oak Ridge National Laboratory

The DOE partners with the state of Tennessee, universities, and industries to solve challenges at ORNL in areas of advanced materials, energy, 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 is home to a DOE Leadership Computing Facility: a DOE nanoscience center, the BioEnergy Science Center, and the Consortium for Advanced Simulation of Light-Water Reactors.

Three Year Progress Overview

The ORNL is home to several historic resources, many of which are available to the public where security and safety concerns allow. These resources include several structures that are listed or eligible to be listed on the National Register of Historic Places.

Graphite Reactor

ORNL operations include maintaining 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 in 1992. The graphite reactor was part of the ORNL Public Tour, which originates at the American Museum of Science and Energy in Oak Ridge. DOE continued to work with the local stakeholders to find ways to strengthen the Graphite Reactor museum as a community and regional asset, as well as a destination attraction.

American Museum of Science and Energy

During the past three years (2015-2017), the DOE owned American Museum of Science and Energy (AMSE) in Oak Ridge, Tennessee saw about 70,000 visitors per year. The museum opened in 1949 in an old wartime cafeteria. It was originally 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, continues to provide the public with energy information. Among the permanent exhibits is a panorama of historical photographs, documents, and artifacts explaining the Manhattan Project and the construction of Oak Ridge. The museum was open daily to the public, except Christmas Eve, Christmas, Thanksgiving, and New Year's Day. DOE's Oak Ridge Summer Public Bus Tour was operated from the American Museum of Science and Energy Mondays through Fridays at noon, and made stops at the ORNL historic sites such as 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.

On December 30, 2016, DOE finalized the transfer of the Parcels 482 and 483 to the City, which included the conveyance of the AMSE building. In exchange, DOE received space from the City in order to continue public education and outreach efforts. DOE has completed an inventory of all the artifacts maintained at AMSE. In accordance with the DOE Oak Ridge Reservation Cultural Resource Management Plan, artifacts that will not be displayed at the new outreach space will be stored and maintained in climate-controlled areas that are properly secured.

DOE continued 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, and was included as a stop for the Summer DOE Public Tour bus.

New Bethel Baptist Church

A historic recordation of Buildings 4500N and 4500S was completed and submitted to the State Historic Preservation Office. These buildings, which are located in the ORNL historic district, have been the central administration and research facilities since they were constructed 1952 and 1961, respectively.

In 2017, a comprehensive architectural/historical assessment of resource at ORNL was conducted in order to validate that buildings that are eligible for NRHP have been identified and assessed. This part of the essential steps needed in updating the ORNL Historic Preservation Plan.

The American Physical Society recognized ORNL's Holifield Radioactive Ion Beam Facility as an APS

Historic Physics Site at the recent Nuclear Structure 2016 Conference and Neutrinos in Nuclear Physics Workshop held in Knoxville. The Holifield Facility, in its evolving arrangements as a heavy ion facility, as a radioactive ion beam facility, and as home of the Oak Ridge Isochronous Cyclotron and Tandem Electrostatic Accelerator, contributed decades of important physics research and hosted scores of researchers from around the world.

Projection of Activities and Accomplishments for the Next Three-Years

In the next three years, provided adequate funding is received, DOE plans to complete the following:

- Update the ORNL Historic Preservation Plan.
- Relocate AMSE's artifacts and exhibits to their new location while developing the new space in a manner that most effectively promotes public outreach and education.
- Renovating spaces in 4500N and 4500S in order to increase their functionality, maintain their historical elements, and ultimately promote the need to preserve these historic buildings.
- Explore the use of technology (i.e. websites, virtual tours, and videos) to showcase historical resources housed at ORNL that are inaccessible to the public due to security and/or safety concerns.

Oak Ridge Y-12 National Security Complex: Oak Ridge Reservation

Introduction

On February 18, 1943, in the midst of the Second World War, ground was broken in rural East Tennessee for the first production building at the Y-12 electromagnetic Separation Plant. 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 plant's job was to make enough enriched uranium for a new kind of bomb, an atomic bomb.

Since that time, Y-12's missions have changed. Y-12 played a key part in the production of thermonuclear weapons, helping win the Cold War with 8,000 people working around the clock to produce nuclear weapon secondaries. Today, Y-12 is a unique national asset in the manufacture, processing, and storage of special materials vital to our national security and contributes to the prevention of the spread of weapons of mass destruction. Y-12 has evolved to become the complex the nation looks to for support in protecting America's future, developing innovative solutions in manufacturing technologies, prototyping, safeguards and security, technical computing and environmental stewardship.

Three-Year Progress Overview

The Y-12 Security Complex is home to several historic resources that are listed or eligible to be listed on the National Register of Historic Places. Over the past three years efforts to use historic properties to foster heritage tourism, when consistent with agency missions, has increased.

Y-12 History Center

The Y-12 History Center at the Y-12 National Security Complex in Oak Ridge, Tennessee, houses informational materials and historical artifacts that chronicle Y-12's early missions. The Y-12 History Center tells the history of this unique Manhattan Project facility as well as the Cold War and present day missions of Y-12. The Y-12 History Center, located in the Y-12 New Hope Visitor Center, houses a collection of historical artifact displays and a collection of informational material that chronicles Y-12's missions (then and now). Artifacts are continually added to the displays. The public can access the Y-12 History Center Monday – Thursday from 8:00 a.m. – 4:30 p.m. (other times by appointment only).

The Y-12 website was modified to include a History page to make historic information available and offer the public an opportunity to learn and understand the importance and significance of Y-12. Website links include:

- Y-12 Bulletins dating back to 1947.
- A listing of some of the informational materials (booklets, brochures, postcards, and fact sheets) provided to Y-12 visitors free of charge.
- A collection of twenty videos capturing Y-12's first mission, accomplishments over the years, and today's mission are made available to the public.
- The voices of former residents of the New Hope Community and former employees of the Y-12 Plant are captured in a collection of Oral Histories.
- A chronology of the highlights of Y-12's history from the 1940s – 2010s.
- Historic Photographs of Y-12 and the Oak Ridge community.

On November 10, 2015, the Manhattan Project National Historical Park was officially established. Two proposed National Historic Landmark (NHL) buildings (9731 and 9204-3) located at the Y-12 National Security Complex are part of the Park. These proposed NHL buildings played an important role in bringing an end to World War II. Building 9731 was known as the "Pilot Plant" for the prototype Calutron and the world's first

Building 9204-3 (Beta 3)

Building 9731 (Pilot Plant)

production facility for producing Uranium-235 using the electromagnetic separation process. It housed four calutrons, pilot operations, development, and training for the operating staffs. It served as the test bed for improvements in uranium separation operations. Building 9731 continues to house the shell of the original Alpha and Beta prototype Calutron magnets. These Alpha magnets are the ONLY existing examples of this equipment. Building 9204-3 (Beta 3), completed as part of the World War II top-secret Manhattan Project, houses the calutrons that performed the electromagnetic separation process. It was the world's first, large-scale uranium separation process used to create "Little Boy," the first atomic bomb. The calutrons in Building 9204-3 were also used to pioneer the research and production of stable isotope separation. Building 9204-3 is fully intact and the electromagnetic separation process equipment, namely the Calutrons, is just as it was in 1945 and still operable. The historical value and interest of this building is compelling in that the spare parts used for the Calutrons are housed in the basement of the building in the original shipping containers showing dates of 1943 to 1945. One of the control rooms remains in its original state.

One of the major accomplishments during the first year of establishing the park was to extend the public tours at the Y-12 History Center from June through August to March through November, doubling the tours to more than 120 per year. Y-12 continues to collaborate with the Celebrate Oak Ridge organization in planning and hosting of the annual Secret City Festival held the 2nd weekend in June. Hundreds of visitors from 12 states visited Y-12 and were able to view the site from atop the South Ridge, tour the 9731 Pilot Plant, and walk through the New Hope History Center historical exhibits. Another accomplishment was the expansion of the Oak Ridge Reservation access for park interpretive events, including the Secrecy, Security, and Spies education program at the DOE Historical Gatehouses; bike tours on DOE greenways; and special tours for Girl Scouts and Girls, Inc.

The Y-12 Historic Preservation Program partnered with the Y-12 Sustainability Program to evaluate items being discarded as waste to determine if they were historic artifacts. Over 100 items were preserved for historic preservation in lieu of disposal as waste support the Site's efforts to meet Executive Order 13693, "Planning for Federal Sustainability in the Next Decade" landfill diversion requirements.

Projection of Activities and Accomplishments for the Next Three-Years

In the next three years, provided adequate funding is received, DOE plans to complete the following:

- Extend the public tour route into the northeast area of Building 9731. It would include the re-creation of several 1940s offices with historic furniture, artifacts, and framed black and white photographs.
- Continue to pursue and secure funding to develop more interactive, video-based, and engaging displays to enhance the tour routes in the Y-12 History Center and the Pilot Plant (Building 9731) facility.

- Continue to pursue and secure funding to install more interpretive signs throughout the Y-12 Plant. These interpretive signs would provide historic information about Y-12 historic buildings and their role in the history and development of Y-12.
- Pursue and secure funding to develop virtual tours of Y-12's National Historic Landmark facilities (Buildings 9731 and 9204-3).

Y-12 History Center Tour

Oak Ridge Office of Environmental Management: Oak Ridge Reservation

Introduction

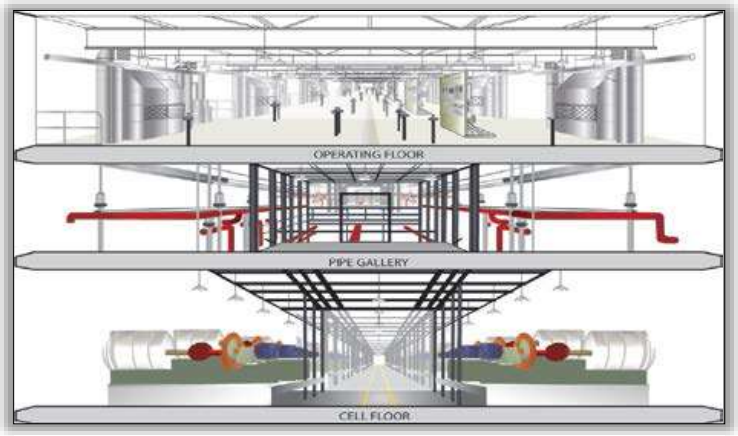
The Oak Ridge Reservation (ORR) consists of roughly 33,000 acres of Federally-owned land in Anderson and Roane counties, Tennessee, and resides within the corporate limits of the City of Oak Ridge. The ORR has three Department of Energy (DOE) industrial complexes geographically isolated from each other: 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. However, severe structural deterioration and extensive contamination concerns made it impossible to preserve any portion of the K-25 building except for portions of the building slab. OREM worked with stakeholders to develop a memorandum of agreement (MOA) which would preserve the historical significance of ETTP 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. This agreement had multiple elements designed to offset 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 replica process gas equipment); 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 artifacts; and other exhibits. The MOA also required the preservation of the footprint of the K-25 Building.

Three-Year Progress Overview

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

Per the MOA, conceptual design documents for the K-25 History Center, Equipment Building, and Viewing Tower were submitted to the consulting parties in January 2015 for review and comment. After compiling the comments, and adding OREM responses, the design team prepared the preliminary design. This preliminary design was submitted to Oak Ridge National Laboratory (ORNL) Nuclear Technical Domestic Export Control Team in August 2015 for an Export Control Information (ECI) review. Based on comments from the National Nuclear Security Administration (NNSA) Office of Defense Nuclear Nonproliferation the preliminary design was revised and submitted to the Consulting Parties in July 2016 for review and comment. Once comments were received, OREM provided responses to the Consulting parties comments in October 2016. Comments and responses were incorporated into the final design and after ORNL ECI review, the final design was transmitted to the Consulting Parties in January 2017. Upon receipt of the comments and DOE responses, input was incorporated into the Certified for Construction design package which was included in the Request for Proposals issued by URS | CH2M Oak Ridge LLC (UCOR) on July 18, 2017.



Equipment Building Conceptual Drawing

The Professional Site Design Team (PSDT) conducted a walkdown for the K-25 Slab in July 2016 to observe slab conditions. Subsequently, chemical characterization and radiological surveys were conducted to determine if portions of the slab can be safely and cost effectively left in place for public access. Recommendations from the slab retention evaluation were discussed with the Consulting Parties at a meeting held July 27, 2017.

K-25 Building Slab

Artifacts that have been collected that are directly related to the gaseous diffusion process are subject to the Nuclear Nonproliferation Treaty, and under this agreement are required to be disposed. To display these items, a formal exemption must be approved by NNSA. A letter requesting exemption from destruction was transmitted to NNSA in August 2015. Based on guidance provided by NNSA in February 2016, the artifact inventory was revised to include only those approved for public display. The inventory was reduced from more than 800 items to 652 that have been collected and stored for historic preservation purposes. There were also 12 artifacts that were radiologically contaminated and deemed unsuited for public display. These items were removed from the artifact inventory for disposal.

A segregation of the K-25 artifacts was begun in July 2017. Of the more than 600 artifacts collected, the museum professionals have chosen approximately 260 for display in the History Center. These artifacts are being separated from the others in preparation for a pre-bid meeting of exhibit fabricators and installation companies that will be preparing the artifacts for display in the History Center.

Artifacts removed from K-25

The K-25 Virtual Museum was completed and launched on November 10, 2015 in conjunction with the signing of the MOA between DOE and the U.S. Department of the Interior, formally establishing the Manhattan Project National Historic Park. It can be viewed online at k-25virtualmuseum.org.

Level 1 Historic American Engineering Record (HAER) Documentation has been prepared and approved by the National Park Service for Portal 4 (June 2016) and K-1037 Building (May 2, 2017). In preparation for this documentation, photographs were taken of each building in October and December 2015. The draft HAER documentation for the K-25 Building is being prepared for submittal to the NPS in the fall of 2017. In addition, the MOA calls for the following actions and activities to occur within the reporting period and are either complete or ongoing.

- Prepare and deliver semi-annual progress reports on MOA adherence.
- As part of the final design, National Park Service Standard wayside exhibits that will mark significant areas of ETTP have been designed and tour brochures have been developed.
- Conduct a groundbreaking ceremony for the K-25 History Center.

Projection of Activities and Accomplishments for the Next Three-Years

In the next three years, provided adequate funding is received, OREM plans to construct the History Center, Equipment Building, and Viewing Tower and dedicate the K-25 footprint. Construction on the History Center is scheduled to begin in fall of 2017. 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. After consideration of the slab evaluation, the K-25 building footprint, including portions of the slab, will be preserved to provide visitors a perspective of the magnitude of the facility.

Pacific Northwest National Laboratory

Introduction

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.[1] 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. 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.

[1] In 1995, PNL was renamed as Pacific Northwest National Laboratory (PNNL).

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.

Three-Year Progress Overview

In the past three years, historic preservation efforts at PNNL have consisted of annual archaeological site condition monitoring, and National Historic Preservation Act (NHPA) Section 110 and NHPA Section 106 compliance efforts associated with PNSO driven undertakings both on and off campus. All aspects of the NHPA process, including archaeological surveys and archaeological subsurface investigations on the PNNL Richland and MSL campuses are completed in partnership and consultation with area American Indian Tribes and the Washington State Historic Preservation Office (SHPO). Tribal consultation and involvement at the PNNL Site and the adjacent Hanford Site is focused on the four tribes that have historical and legal ties to the PNNL Site. Those tribes include:

- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of the Umatilla Reservation
- Nez Perce Tribe
- Confederated Tribes of the Colville Reservation.

Tribal consultation and involvement at the MSL Site is focused on six tribes that have historical and legal ties to the MSL Site. Those tribes include:

- Makah Indian Tribe of the Makah Indian Reservation
- Jamestown S'Klallam Tribe of Washington
- Lower Elwha Klallam Tribe
- Port Gamble Indian Community of the Port Gamble Reservation
- Hoh Indian Tribe of the Hoh Indian Reservation
- Quileute Nation.

In addition to participation in the NHPA Section 106 process through government-to-government consultation, tribal consulting parties are sent invitations to participate in archaeological fieldwork (including surveys, subsurface testing, monitoring, etc.). In addition, PNSO began holding quarterly cultural resource meetings with tribal cultural resource staff in 2015. PNSO and tribal representatives meet quarterly (PNNL Richland Campus) and annually (PNNL MSL Campus) to discuss American Indian tribal concerns, cultural resource concerns on particular projects, NHPA Section 106 processes and documents, and NHPA Section 106 agreement documents (i.e. Memorandum of Agreements (MOAs) and Programmatic Agreements (PAs)).

In the past three years, NHPA compliance activities have resulted in the archaeological inventory of 378 acres of land. This total includes lands located on both the PNNL Richland and MSL Campuses, the adjacent Hanford Site (managed by DOE-RL), and various locations throughout Washington and Oregon.

While most surveys conducted were associated with project related NHPA Section 106 reviews, one large NHPA Section 110 archaeological survey effort was completed in 2015 which included a 100-acre survey of the PNNL Richland Campus. This NHPA Section 110 compliance effort was completed to aid in

future decision making and preservation planning for future land use on the PNNL Richland Campus. The cultural resources-related field effort also included a geomorphological analysis to identify areas with a high probability for buried archaeological resources. Results were compiled and recommendations for future subsurface investigations were presented in the final report to guide future subsurface archaeological investigations in the area.

The findings of this NHPA Section 110 report were used to formulate the research design for a large field effort (completed in 2017) for a NHPA Section 106 review completed for future development of the PNNL Richland Campus. A total of 254 acres were surveyed for archaeological resources and a total of 390 shovel test units were excavated throughout the PNNL Richland Campus to establish presence/absence of archaeological resources. In addition, an architectural survey was conducted to inventory and evaluate historic buildings and structures located on the PNNL Richland Campus. As part of this field effort, a total of 7 new archaeological sites, 4 archaeological isolates and 13 historic buildings were identified (bringing the total for the PNNL Richland Campus to 21 sites, 15 isolates and 14 historic buildings). The results of these field inventories (including NRHP evaluations) are currently being compiled through the NHPA Section 106 review process and National Environmental Policy Act (NEPA) Environmental Assessment.

In the past three years, annual cultural resources condition monitoring of culturally sensitive areas on the PNNL Richland Campus (including a pre-contact village site, cemetery, and camp/fishing site) have been completed. Similar to NHPA Section 106 fieldwork, cultural resources condition monitoring is completed in consultation and partnership with area American Indian Tribes. This monitoring involves on-the-ground inspection of culturally significant areas, documentation of changes since the previous site visit, a summary email, and a monitoring report. Copies of the monitoring report are provided annually to the Washington SHPO and American Indian Tribal consulting parties.

One historic building, the Research and Technology Laboratory (RTL), was evaluated and determined eligible for listing in the NRHP. A Memorandum of Agreement (MOA) was developed and executed in 2017 to mitigate adverse effects from the demolition and remediation of this historic property in consultation with the Washington SHPO. Mitigation actions associated with this MOA are primarily focused in public outreach activities and are described below (as they are to be completed within the next 5 years).

Research and Technology Laboratory (RTL) 520, located on the Pacific Northwest National Laboratory (PNNL) Richland Campus. RTL was recently determined eligible for listing in the NRHP as a good intact example of late 20th century modernist architecture.

The PNSO Cultural and Biological Resources Management Plan (CBRMP) is on a 5-year review cycle and was revised in the fall of 2015. Sections of the plan relating to the PNNL Richland Campus were revised in consultation with area American Indian tribes and Washington SHPO. In addition, information on the protection and management of cultural and biological resources at the MSL were added.

As part of cultural resource education and outreach efforts, PNNL Cultural Resources staff continue provide cultural resources awareness training to personnel working within and/or adjacent to areas of cultural and/or archaeological sensitivity. These trainings are focused on providing PNNL personnel with an understanding of the value of archaeological resources and the overall importance of their protection and preservation.

Projection of Activities and Accomplishments

While the CBRMP is on a 5-year review cycle, additional revisions will likely be completed within the next 3 years to incorporate the expansion of the PNNL Richland Campus and, the federalization of the MSL campus. Revisions will be completed in consultation with area American Indian Tribal consulting parties located in the vicinity of both the PNNL Richland Campus and the MSL and the Washington SHPO. In addition, PNSO will continue to meet regularly (quarterly for the PNNL Richland Campus and annually for the MSL campus) with American Indian Tribal consulting parties to facilitate ongoing and open consultation related to tribal concerns, NHPA Section 106 projects, processes documents, and agreements (i.e. MOA's, PA's, etc.).

Archaeologists performing archaeological pedestrian surveys on the PNNL Richland Campus as part of the NHPA Section 106 effort for the Richland Campus Future Development project.

PNNL staff will likely be focused on completing an MOA related to the PNNL Richland Campus's future development as part of the NHPA Section 106 review process. The MOA for this effort is currently in the process of being drafted in consultation with the Washington SHPO and American Indian Tribal consulting parties.

As part of the MOA developed for the demolition and remediation of the RTL building (discussed above), PNNL staff will be developing a webpage that will be available to the public which will present information about RTL including several historic context documents. In addition, a public event will be held to share information about the RTL, its history and significance.

The top of a baking powder canister recorded and photographed at a historic site on the PNNL Richland Campus during the archaeological survey work for the Richland Campus Future Development project.

The overall condition of culturally sensitive areas located on the PNNL Richland Campus will continue to be monitored such that any potential threats or impacts can be documented and addressed. Cultural resource reviews will continue to be prepared for undertakings as needed.

Pantex Plant

Introduction

The Pantex Plant began as the Pantex Ordnance Plant during World War II, and its construction was authorized on February 24, 1942. Pantex Ordnance Plant was a "second wave" ordnance facility, the last of 14 bomb-loading facilities built under the government-owned/contractor- operated (GOCO) system. The Plant produced 105-millimeter artillery shells, 500-pound general-purpose bombs, 250-pound general- purpose bombs, and 23-pound fragmentation bombs. Pantex Ordnance Plant was a relatively small cog in the GOCO wheel of industrial mobilization during World War II. At the height of its activity, the Plant employed 5,254 employees, of whom 60 percent were female. The Plant covered approximately 16,000 acres, and had three operational bomb-loading lines; a fourth line was completed just before the war ended, but was never operational. An ammonium nitrate line, a bomb fuse and booster line, three large complexes for explosives and ammunition storage, a shop and maintenance area, a cafeteria, a hospital, two large dormitories, a sewage treatment plant, and a water-softening plant supported the Plant's bomb-loading mission. Pantex Village, which consisted of 69 residences, a community center, a store, and a movie theater, provided domestic support.

The Pantex Ordnance Plant was closed after the war. This closure involved removal of the production equipment and decontamination of the remaining facilities. In 1949, the 16,000- acre installation was sold for one dollar, subject to recall under a national security clause, to Texas Technological College (now Texas Tech University) for use as an agricultural experiment station.

The Cold War era of operations at Pantex began in 1951. In that year, the Atomic Energy Commission (AEC) selected the former ordnance plant for use as a high explosives fabrication and weapon assembly installation in the nation's developing nuclear weapon complex. The AEC obtained approximately 7,000 acres of the original plant site from Texas Technological College, and the college retained the remainder of the land. The AEC used $25 million to construct ten new buildings and modify three World War II-era buildings. These efforts were concentrated primarily on facilities in the previously unused fourth load-line (now Zone 12). The first contractor after the reopening on Pantex was Proctor and Gamble Defense Corporation. Expanding operations in 1955 required the acquisition of an additional 2,000 acres of land from Texas Technical College.

Throughout the Cold War, Pantex served as a major component of the nuclear weapon production complex, enabling the National Laboratories to focus on research and design of new nuclear weapon systems. At the height of U.S. production of nuclear weapons, there were four assembly, disassembly, and modification facilities, all run by Mason & Hanger--Silas Mason Company, Inc.; the Pantex Plant near Amarillo, Texas; the Iowa Army Ammunition Plant in Burlington, Iowa; the Medina Modification Center in San Antonio, Texas; and the Clarksville Modification Center in Clarksville, Tennessee. As the AEC began to reduce the production of weapons in the mid-1960s, it transferred responsibilities of the two modification centers back to the Pantex and Burlington Plants. Transition of Clarksville operations, the smaller of the two, was completed in September 1965, and transition of Medina operations in July 1966. On June 25, 1973, the AEC decided to consolidate Burlington and Pantex operations. The complete shutdown of the nuclear weapon activity at Burlington was completed in July 1975. Since 1975, Pantex has been the nation's only assembly, disassembly, retrofit, and modification center. In 1975, the Energy

Research and Development Administration (ERDA) replaced the AEC and took responsibility for operation of Pantex Plant; and in 1977, the ERDA was replaced by the U.S. Department of Energy (DOE). A reorganization in 2000, shifted responsibility for operation of Pantex to the National Nuclear Security Administration (NNSA), a semi-autonomous administration within the DOE.

The last new nuclear weapon was completed in 1991. Since then, Pantex has safely dismantled thousands of weapons retired from the stockpile by the military and placed the resulting plutonium pits in interim storage.

Pantex Plant personnel completed an inventory of pre-Cold War buildings and archeological sites by 1995. Staff also contacted Native American tribes regarding interest in the archeological sites at Pantex. There are no known archeological sites at Pantex which contain human remains, funerary objects or objects of cultural patrimony. Personnel then conducted an inventory of Cold War related buildings. The inventory identified buildings, objects, and records which were then integrated into the Pantex Cold War context statement and the Cultural Resources Management Plan. Structural representatives and utilized objects with significant characteristics at the Pantex Plant were chosen for in-situ preservation in consultation with the Texas State Historic Preservation Officer and the Advisory Council on Historic Preservation.

Identification and evaluation work for Pantex's Cold War context was completed in 2001, including building surveys, archival research, development of Revision I draft Cold War context statement, and National Register eligibility determinations for the Plant's approximately 700 buildings and structures. In 2004, representatives from the National Nuclear Security Administration (NNSA), Texas State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), and the Managing and Operating Contractor for Pantex Plant, signed the Programmatic Agreement for managing cultural resources at Pantex Plant.

The Pantex mission has grown over the decades as other facilities closed and responsibilities for life-extension, surveillance, assembly and high explosives operations were moved to the site. All work at Pantex is carried out under three overarching priorities: the safety and health of workers and the public, the security of weapons and information, and the protection of the environment.

Three-Year Progress Overview

Pantex Plant uses a Programmatic Agreement/Cultural Resources Management Plant (PA/CRMP) to manage the historic structures on site. Of those structures, ten were agreed to be preserved in-situ. These structures will be continuously used or reused and any modifications or renovations will not adversely affect the historical integrity of the building. There were zero modifications or renovations which adversely effected the historical integrity of the ten structures held for in-situ preservation during this reporting period. There were zero structures identified or listed as "National Register Eligible" in the past three years.

Pantex has one full time "cultural resource" employee who meets the Secretary of the Interior's Professional Qualification Standards. Two other employees support the cultural resources program in addition to other job duties. The cultural resources specialist attended Section 106 Essentials training during the summer of 2016 and the National Association for Interpretation's Certified Interpretive Guide

training in July of 2017. Additionally, the cultural resources staff member attended National Environmental Policy Act training in June of 2017.

The cultural resource staff was consulted to ensure procedures were followed for proper protection of historical facilities. All proposed Plant projects were reviewed and identified through the National Environmental Policy Act (NEPA) process. In the cultural resource review, the facilities and archeological sites being impacted were identified and then the Programmatic Agreement was checked to determine if documentation or additional consultations would be required. If facilities, archaeological sites, or activities involved were exempted under the Programmatic Agreement, the project could be approved as is. Approximately 75 projects were reviewed by cultural resources staff during the reporting period.

In accordance with the PA/CRMP, photo documentation was taken for two pieces of equipment which were historically significant, but were contaminated and could not be preserved. Photographs were taken and the prints and film will be stored in accordance with the Programmatic Agreement. Additionally, staff members reviewed all tooling before disposal. Only tooling which is the last of its kind is maintained for historic preservation. Less than ten pieces of tooling were preserved during the reporting period. These tools met the preservation guidelines set forth in the Pantex Plant PA/CRMP.

Pantex Plant staff members monitored two archeological sites identified by the Programmatic Agreement as potentially eligible for the National Register of Historic Places. Personnel visited the sites once per quarter to ensure there has been no disturbance to the sites from natural or human causes. Staff documented four objects at the archeological sites during the reporting period. Documentation included recording the location, measurements, and digital photographs of the object.

There were over eighty 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 newly hired employees, and windshield tours of the site. Due to security restrictions, the Visitor Center is not accessible to the general public unless they have been invited. Invited groups have included students from local universities and a local leadership organization.

The Pantex Visitor Center houses an exhibit on Pantex History and the Cold War.

Pantex Plant loaned a B53 trainer to the Pampa Freedom Museum in 2014; this loan was renewed in July 2017 for another year. The Pampa Freedom Museum is a 501(c) (3) organization established to preserve the history of America's war efforts and to preserve peace by remembering the past. Pantex Plant loaned a respirator and WWII era personnel badge to the Panhandle Plains Historical Museum for use in the "Gems of the Plains" temporary exhibit. In addition, Pantex received, as a temporary exhibit, a saddle which was used at Pantex during WWII. During WWII, many guards protected the perimeter fencing while riding on

A B53 trainer (left) is on loan at the Pampa Freedom Museum, Pampa, Texas. The museum sees over 3500 visitors a year from over 33 states.

horseback. This ensured the security of the site as well as rationed tires and gasoline which would have been required if they used motorized vehicles. The exhibit is displayed in an area where current security forces can enjoy and connect with their heritage.

In 2017, Pantex Plant celebrated its 75th anniversary. Cultural Resources staff assisted in research and writing of a "This Day in History" series available to employees of the facility.

Projection of Activities and Accomplishments

Cultural Resources staff is updating the Programmatic Agreement/ Cultural Resources Management Plant (PA/CRMP). This update should be finished by the end of 2017, then the report will be sent to the Texas State Historic Preservation Officer (SHPO) and ACHP for approval and signatures.

Pantex will continue to loan historic objects to local institutions. Local organizations have contacted Pantex for objects related to Cold War history in Popular Culture. Staff members will also create interpretive signs and exhibits for extremely large objects which cannot be moved. Staff members will update the Visitor Center with the most current available information.

Visitors and staff members listening to the Pantex history presentation at the Pantex Visitor Center, April 2017.

Cultural Resources staff will continue to monitor archeological sites quarterly and continue documenting objects in-situ. A cultural Resources staff member will attend Advanced Section 106 training in the fall of 2017.

Staff will perform an inventory of all historical artifacts in the collection. The collection includes a substantial archival collection as well as objects related to Pantex's Cold War history. All of the collection will be added into a database. Additionally, for larger objects, storage has been located in a vacated facility. The objects will be inventoried and entered into a database before they are moved to the new storage location. If additional funding becomes available, other identified activities may occur.

Portsmouth Gaseous Diffusion Plant

Introduction

The Portsmouth Gaseous Diffusion Plant (PORTS) was a Cold War project of the Atomic Energy Commission, the predecessor of DOE. PORTS is a 3,777 acre site located in Piketon, OH, a small community located in southern Ohio. PORTS is one of three gaseous diffusion plants in the DOE complex. All of the gaseous diffusion plants have been shut down and are undergoing cleanup, including decontamination and decommissioning (D&D) as a part of the Environmental Management Program; PORTS was permanently shut down in 2001. The site is actively undergoing cleanup under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and other authorities.

All of PORTS historic properties were identified prior to 2014. PORTS has 33 architectural historic properties and 3 extant archaeological historic properties. A fourth archaeological site was identified and recovered as a part of the site cleanup. The site does not have any heritage assets. PORTS has worked closely with members of four Native American Tribes that were removed from Ohio to Oklahoma as a result of the Indian Removal Act. Representatives of the four tribes, including Tribal Historic Preservation Officers and Tribal leaders, met with DOE PORTS leadership beginning in 2012. The tribes assisted PORTS with the evaluation of historic properties and the identification of measures to minimize, avoid and mitigate adverse effects that would occur due to site cleanup. This working relationship, a type of partnership, with the tribes was beneficial to PORTS cleanup alternative analysis and decision-making process.

As a cleanup and closure site undergoing D&D, protecting the site's historic properties by preserving them was not possible; rather a number of mitigation measures to document the site's history will be implemented. The substantive requirements of Section 106 were met using the Applicable or Relevant and Appropriate Requirements (ARAR) process of CERCLA, culminating in two 2015 Records of Decision (ROD). The RODs – one to address the process buildings and one to address waste management needs - were executed between DOE and the State of Ohio. Beginning in 2011. DOE coordinated with the SHPO, the ACHP, Native American Tribes, and members of the public through the CERCLA process. Pursuant to the process building ROD, the site's facilities will be demolished. The separate 2015 ROD to address waste management included mitigation measures associated with site archaeology, including a measure to recover an archaeological site that could not be avoided to accommodate an on-site waste disposal facility. No MOA was signed (because it is administrative) but a robust series of preservation commitments was included in the RODs entered into between DOE and Ohio EPA.

Adena stemmed projectile points from Phase III excavation Site 33PK347.

As described above, DOE PORTS used the CERCLA process and its strong public involvement component to engage with the public and the Native American Tribes. The success of this method is recognized in the RODs which captured the mitigation measures and obtained support from the SHPO and the Native American Tribes. There was integration of the substantive aspects of NHPA directly into CERCLA analyses as the analyses were underway. Through the use of the CERCLA process for NHPA Section 106 compliance DOE PORTS was able to successfully balance the need to protect the public with the NHPA goal of protecting historic properties.

While PORTS is aware of heritage tourism objectives and available sites for such tourism in southern Ohio, the buildings at the PORTS site will be demolished to address environmental contamination and associated risks and hazards. Bus tours will continue to be offered in the spring and summer months as a heritage tourism opportunity as long as site conditions allow.

Three-Year Progress Overview

Notable accomplishments since 2014 include the drafting and finalization of a curation plan for archaeological resources collected during the archaeological surveys of the site and issuance of a request for proposal for implementation of the plan, the drafting of HAER reports for seven PORTS facilities, the drafting of reports based on the content requirements of the Historic American Building Survey for 26 site facilities, monthly panoramic photo-documentation of site D&D progress, and the continuation of outreach and communication activities such as site bus tours during the spring and summer months, and presentations to local groups and gatherings on site history that include showing items from PORTS' operational period.

Telephones utilized to communicate from the Process Building's control room to the operating cell floors. These telephones are being held for future display and/or curation.

Projection of Activities and Accomplishments

Activities expected to be undertaken and/or completed between 2017 and 2020 include the completion of the HAER reports and their transmittal to the National Park Service, work towards a determination on the location of the site's archaeological collection from the prehistoric and historic-era, and the curation of the site's collection at the selected facility.

Northwest corner of the X-326 Process Building, facing southeast (building to be included in the HAER reports).

Richland Operations Office, Hanford Site

Introduction

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.

Three-Year Progress Overview

Since the last progress report in 2014 a total of 17 resources have been identified, evaluated and recommended eligible for listing in the National Register of Historic Places (NRHP). With the addition of these 17 properties the Hanford Site contains 81 individually eligible historic properties and one National Historic Landmark (B Reactor). 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.

Manhattan Project National Historical Park

With the creation of the Manhattan Project National Historical Park in November 2015, DOE-RL created a National Park Program to expand public access to Hanford's five Park facilities, preserve the buildings and resources associated with the Park's themes, and engage communities.

Public Access: To meet that mandate, the National Park Program worked to eliminate the longstanding age requirements at B Reactor and Hanford's four pre-Manhattan Project Park facilities to open them to kids of all ages. This change has led to many more family visits to the Park as well as a successful school outreach program, under which several thousand elementary, middle, and high school students have visited the Park during the 2016 and 2017 tour seasons. DOE also expanded the annual public tour program for the National Park facilities and now offers several public tours a day, six days per week, from April through mid-November for a total of about 14,000 tour seats each year. The National Park sites at Hanford have been visited by people from all 50 states and more than 80 countries worldwide. Visit Tri Cities, the local Destination Marketing Organization, estimates the economic benefit of the Hanford National Park tours to be between $2.2 million and $2.8 million annually and growing.

Senator Maria Cantwell of Washington, Retired Representative Doc Hastings of Washington, NPS Deputy Regional Director Chip Jenkins, Maynard Plahuta of the B Reactor Museum Association, and local 4th graders raise the NPS flag at the B Reactor 11/12/15.

Senator Patty Murray of Washington, center, visits B Reactor in August of 2016 with NPS, DOE, and local community leaders.

Preservation of Park Resources: In 2017, DOE completed the rehabilitation of the historic White Bluffs Bank, one of the four pre-WWII facilities included in the Hanford Unit of the Manhattan Project National Historical Park. The bank, built around 1907, was in extreme disrepair and in danger of collapse. DOE and its engineering and construction contractors worked closely with the National Park Service, the Washington State Department of Archaeology and Historic Preservation, area tribes, and local stakeholders to implement a solution that preserved the building for future generations and retained many of its historic features, materials, and finishes. Today, the building boasts steel core supports down through the original construction blocks, a new roof and several interior walls, and restored original

millwork. Notably, the massive vault surround, missing when the rehabilitation project began, was matched through photographs to a bank in New York. A foundry in Utah duplicated the piece by digitizing photographs of it and recasting out of cast iron. DOE will work with the National Park Service on interpretive planning for the building, and will open it to the public as part of National Park tours in 2018. This will be the first public access to the bank since Hanford Site lands were condemned by the government as part of the top-secret Manhattan Project in 1943.

The exterior of the 1907 White Bluffs Bank in 2017, following DOE's rehabilitation work.

First ever public bike ride around the B Reactor National Historic Landmark. Organized by REI and Bike Tri Cities as part of the local celebration of the NPS centennial in 2016. Raised more than $5,000 in donations to MAPR's Hanford Unit.

Community Engagement: the Manhattan Project National Historical Park is a partnership park, a term that reflects not just the co-management of the Park by DOE and NPS, but also the critical role of community-based entities in providing expertise and resources. In 2015, DOE, through its Hanford contractor, partnered with Washington State University Tri Cities (WSU-TC) for the storage and curation of Hanford's "Manhattan Project and Cold War Collection" of artifacts, photographs, archive material, and ephemera. Moving the federal collection off the Hanford Site and into WSU-TC's storage facilities enabled DOE to bring the collection into compliant storage conditions and will result in a searchable electronic catalog of the collection online for the first time. As part of its partnership agreement, WSU-TC loans Hanford artifacts to museums, conducts research and education projects on the collection, and is making the collection available to the public for the very first time. Additionally, DOE supports and engages monthly with a "Tri Cities National Park Committee" composed of elected officials from the local jurisdictions, participates regularly in updates and workshops coordinated by the Energy Communities Alliance, has hosted multiple open houses at the National Park Interim Visitor Center, and has partnered with National

Park Service to meet with the four Hanford-area Tribes to seek their input on how they'd like to be involved with the Park.

Projection of Activities and Accomplishments

Over the next three years DOE-RL will continue its cleanup mission and begin shifting its focus towards future uses as the long term stewardship program will play an increasing role on the Hanford Site. There are plans being developed to expand controlled public access while protecting Hanford's cultural resources and historic properties.

At the Manhattan Project National Historical Park, DOE-RL's National Park Program will begin structural evaluations and construction planning for three of the pre-Manhattan Project Park facilities (the Allard Pump house, Bruggemann Warehouse, and Hanford High School) to ensure their preservation and lay the groundwork for interior public access. DOE also anticipates being able to utilize volunteers and in-kind donations, which were authorized as part of the Park's enabling legislation in 2014. With permanent National Park Service staff joining the Hanford team in November 2017, educational and community programs, volunteer opportunities, and interpretive training will all grow.

Sandia Field Office

Introduction

The U.S. Department of Energy/National Nuclear Security Agency/Sandia Field Office (DOE/NNSA/SFO) oversees cultural resources management for all Sandia National Laboratories (SNL) activities and sites. SNL occupies DOE-owned or -permitted property at its laboratory sites in Albuquerque, New Mexico and Livermore, California, and at its test sites near Tonopah, Nevada and Kauai, Hawaii.

SNL has its roots in Z Division, the nuclear weapons ordnance design, testing, and assembly organization established within Los Alamos in 1945. Later that year, Z Division moved to Sandia Base (which later merged into Kirtland Air Force Base) to be near an airfield and work closely with the military. The demand for a large, war-reserve nuclear stockpile in the early years of the Cold War drove staff increases at both Z Division and Los Alamos, ultimately leading to their separation. In May 1949, President Harry Truman asked the American Telephone and Telegraph Company (AT&T) "to render an exceptional service in the national interest" by operating SNL. AT&T agreed, and the newly formed Sandia Corporation, a wholly owned subsidiary of AT&T's partner Western Electric Company, began managing SNL on November 1, 1949.

SNL continued to evolve, establishing a second site in Livermore, California and test ranges in Tonopah, Nevada, and Kauai, Hawaii. Sandia's mission expanded over the decades as it took on fundamental research and non-nuclear assignments, including energy research and anti-terror programs. In 1979, President Jimmy Carter signed legislation declaring Sandia a national laboratory. In 1993, Martin Marietta (which later merged with Lockheed Corporation to form Lockheed Martin) assumed responsibility for Sandia Corporation and managed the Labs until May 2017, when management of SNL was transferred to National Technology & Engineering Solutions of Sandia, a wholly owned subsidiary of Honeywell International.

SNL currently fields a workforce of over 12,000 individuals, most of whom work at the New Mexico site. SNL's long-term mission responsibilities in the nuclear weapons program created a foundation from which capabilities are leveraged to solve complex national security problems for a variety of sponsors. As a multidisciplinary national laboratory and Federally Funded Research and Development Center, SNL anticipates and resolves emerging national security challenges, develops and discovers new technologies, creates products that directly address national security needs, and informs the national debate where technology policy is critical to preserving security and freedom. SNL's areas of expertise include bioscience, computing and information science, engineering, geoscience, materials science, nanodevices and microsystems, radiation effects and high energy density science, environmental testing, and satellite systems.

In consultation with the State Historic Preservation Officers (SHPO) of New Mexico, California, Nevada, and Hawaii, SFO undertakes all SNL cultural resources management. The SNL Facilities Information Management System identifies 1103 total properties at the four SNL sites. Of these, 97 have been determined National Register Eligible and 503 not eligible by SFO in consultation with the relevant SHPOs. 503 properties have not been evaluated. Details of the activities at the individual sites are provided in the Three-Year Progress Overview, below.

SFO has not had an opportunity to engage in external/private partnerships regarding SNL resources. The security limitations placed on access to the facilities and the remote locations of many of them have discouraged interest in such partnerships. Similarly, the possibilities inherent in Section 111 have not been investigated. Access to facilities is limited to individuals pre-identified as having a need and, in the case of test facilities, safety is a primary concern.

Three-Year Progress Overview

SFO's approach to cultural resources management has not changed significantly over the course of FY2015–FY2017. Emphasis is placed on Section 106 compliance, although some progress has been made in consultation under Section 110. SFO has one individual devoted to SNL cultural resources activities as part of the overall National Environmental Policy Act compliance process. This poses a challenge as the amount of Section 106 activity has increased with increased funding for maintenance work on SNL facilities. SNL does deliver some support for SFO's Section 106 and Section 110 compliance activities—the SNL historian provides assessments and recommendations regarding historic buildings. Archaeological support is brought in as needed for surveys and assessments.

Sandia National Laboratories/New Mexico (SNL/NM)

SNL/NM operates primarily within KAFB. Although there are a few DOE-owned buildings on DOE land outside of the KAFB boundaries, the bulk of the land and built environment SFO oversees is within the base. Within KAFB, SNL/NM has five tech areas on DOE-owned land; additional facilities on DoD-owned land; and facilities on land withdrawn from Cibola National Forest, part of which is permitted to DoD and part to DOE.

The SNL Facilities Information Management System lists 751 total properties at SNL/NM. Of these, SFO has determined 37 to be National Register Eligible, 29 to be non-contributing elements to historic districts, and 286 to be not historic. NM SHPO has concurred with these determinations. 399 properties have not been evaluated by SFO.

In 2010, SNL undertook a historic building survey and assessment of the SNL/NM site. Consultation on the resulting report and recommendations was not completed, although the document does continue to support Section 106 consultation on specific buildings.

Most extant historic properties eligible under Criterion A continue to house the mission activity that made them eligible for the National Register. In the case of Building 840, however, the original mission function (a machine shop) is no longer in place and other activities have moved into the facility. During FY2015–FY2017, those programs have required a variety of modifications to the building to make it functional for their work. As the building was also eligible under Criterion C, SFO and SNL have actively worked to preserve the exterior design of the building, consulting closely with NM SHPO to ensure the building retains integrity while allowing forward-looking scientific research to proceed.

KAFB has arranged for archaeological surveys on DoD-owned land and on Cibola National Forest land withdrawn and permitted to DoD and DOE. Multiple archaeological sites have been identified. SNL construction activities occasionally require more detailed surveys of areas known to contain archaeological sites. In general, construction is relocated or modified to avoid threatening the sites.

In FY2015–FY2017, SNL did experience two events that potentially threatened archaeological sites. One involved the grading of a road near multiple archaeological sites. The blade work went beyond the established road bed and cut into the surrounding soil. After consultation with NM SHPO and further archaeological assessment, it was determined that no mitigating activities were required. Similarly, during reseeding of a site after removal of an out-of-use test facility, an archaeological site was partially exposed. Consultation with NM SHPO and further archaeological assessments are underway.

SNL's five tech areas were surveyed nearly 30 years ago, and no archaeological sites were found. The areas are considered previously disturbed land and encounters with archaeological sites are not anticipated. However, all ground-disturbing work undertaken is done under the requirement that if any buried archaeological remains are found, all work will stop and SFO will be called in immediately.

Sandia National Laboratories/California (SNL/CA)

SNL/CA was established in 1956 to provide nuclear weapon design support to the newly established Lawrence Livermore Laboratory. Over time, the site has expanded its capabilities into research on energy resources—including understanding combustion and the development of biofuel—transportation, immigration, port security, and cyber research. Much of the issues addressed at the site surfaced early in the state of California, allowing SNL/CA to participate in the first wave of solutions to important national problems.

A 1990 assessment of cultural resources at SNL/CA revealed no prehistoric resources, Native American resources, or historic archaeological sites. As there is always a possibility that buried resources might be unearthed, all construction-related activities operate under a provision for discovery of cultural resources. None have been unearthed at the site.

SNL undertook a historic building survey and assessment of the SNL/CA site in 2001. SFO determined that none of the properties on site were historic. In April 2005, CA SHPO concurred with SFO's determination. In 2005, SNL/CA released a site-specific Cultural Resources Management Plan, under which it still operates.

There has been no cultural resources activity at SNL/CA in the FY2015–FY2017 period. The SNL Facilities Information Management System indicates there are 112 total properties at the SNL/CA site. Eight of these were not included in the 2001 assessment (they represent new construction).

Sandia National Laboratories/Tonopah Test Range (TTR)

TTR is located on approximately 280 square miles (179,200 acres) of withdrawn land, which is permitted from the U.S. Air Force (USAF) within the boundaries of the Nevada Test and Training Range (NTTR). The original USAF permit was issued in 1956 and SNL began testing at the site in 1957. In general, SNL's activities at TTR involve research and development and the testing of weapon components and delivery systems. Initial testing was devoted to aircraft drops of test units for nuclear weapons designs and rocket testing of components and rockets developed in support of high-altitude nuclear testing. Over time, the range added explosives tests and gun testing, all with advanced tracking and data capture capabilities.

TTR's built environment currently includes 134 total buildings and structures. In 2005, SNL undertook a complete historic building survey and assessment, which included all but one of the current properties (which was built recently). The assessment concluded with the recommendation that 59 properties be included in an SNL TTR Historic District. SFO, in consultation with the Nevada SHPO, determined that the district would include 60 properties as contributing elements.

In FY2015–FY2017, SNL proposed to demolish several buildings and structures from the SNL TTR Historic District—both contributing and non-contributing elements. SFO and NV SHPO are negotiating a Memorandum of Agreement regarding the district. In the meantime, HABS/HAER Level II-type reports have been drafted for the contributing elements proposed for demolition. NV SHPO is considering these reports.

Archaeological surveys are conducted at TTR as needed to support specific mission activities. In the past three years, work has included surveys in support of installation of a fiber optic line between the tracking stations at the site and removal of a tower.

Sandia National Laboratories/Kauai Test Facility (KTF)

KTF is located on the island of Kauai within the boundaries of the U.S. Department of Defense (DoD) Pacific Missile Range Facility (PMRF). KTF is at the north end of the PMRF. In the past, KTF also operated remote facilities on Mount Haleakala on Maui and at Kahili Point on Kauai, but those facilities have not been used in several years. The facilities at KTF include 106 properties, 11 of which have been evaluated and determined not to be historic.

KTF was established in 1962 to launch telemetry rockets in support of the high-altitude shots during the Operation Dominic nuclear test series. KTF was expanded and renovated in 1964 as part of the U.S. Readiness Program, a safeguard established by Congress in response to the Limited Test Ban Treaty (LTBT) of 1963 signed by the U.S., the U.K., and the U.S.S.R. The LTBT banned all nuclear testing in the atmosphere, space, and the seas. Congress provided certain safeguards, one of which allowed the U.S. to maintain the facilities and research capabilities (the readiness) necessary to resume atmospheric testing in the interests of national security. The Readiness Program ended in the late 1970s; however, President Ronald Reagan's Strategic Defense Initiative (SDI) led to the modernization of KTF in the 1980s and 1990s. KTF continued to provide rocket launches for testing rocket systems with scientific and technological payloads, advanced development of maneuvering reentry vehicles, and scientific studies of atmospheric and exoatmospheric phenomena. KTF currently supports Missile Defense Agency programs.

The KTF launch field was originally designed to accommodate 40 launch pads, but only 15 pads were constructed. Of these, 11 have had their launchers removed and two additional launch pads were constructed over time. In addition to rocket launch pad sites, KTF facilities include missile and payload assembly buildings, launch operations and data acquisition facilities, maintenance shops, and a trailer dock compound for administration and other office processing.

There has been very little cultural resources management activity in support of KTF during the FY2015–FY2017 period as very little work was proposed that required Section 106 consultation. Based on HI SHPO guidance, SNL always has an archaeologist present during ground disturbing activities (digging, trenching, removal of buildings, and installation of buildings). SNL did complete a historic building survey

of the test facilities. The written survey and assessment report with recommendations to support Section 110 consultation is not finished.

In all, there are 106 properties at KTF, 11 of which have been evaluated and consultation with HI SHPO completed. None have been determined National Register Eligible.

Outreach and Public Education

Outreach and public education efforts have been limited. However, SNL does include the historic status and roles of properties when discussing specific facilities and programs. For example, the public can see some of SNL's key facilities via Virtual Tours. The history of the facilities—and whether they have been determined eligible for the National Register of Historic Places—is called out in the text boxes describing the facilities. Tours of the historic Z Machine, the Superfuge Facility, and other environmental test facilities are viewable on the SNL external web at tours.sandia.gov. This is an ongoing project for new hire training and recruiting; more tours will be added in the coming fiscal years.

In addition, SNL expects to launch a cultural resources page within the sandia.gov web site soon. The site includes photographs, drawings, and text describing some of the historic properties at SNL/NM that are no longer extant. The site draws on the HABS/HAER Level II-type documentation prepared in agreement with NM SHPO when the facilities were demolished. Future planning includes continual expansion of the site.

With NM SHPO's encouragement, SFO has tried different approaches to outreach and education. For example, when the historic rocket-powered centrifuge had to be removed from its original location because its mass was contributing to significant and harmful erosion in Tijeras Arroyo, SFO and NM SHPO agreed to keep key elements of the centrifuge to create a sculptural or artistic piece illustrating the facility's role in early Cold War nuclear weapons development. The Museum of Nuclear Science & History was unable to receive the centrifuge, as was originally hoped, but it is stored in the SNL/NM Superfuge Facility area with expectations to use it in a future exhibit/display/art piece. The Superfuge Facility houses two other historic centrifuges and placing the rocket-powered centrifuge there will provide an effective linking of past with current work.

Projection of Activities and Accomplishments

In FY2018–FY2020, SFO anticipates continuing with Section 106 consultation as necessary. To further both compliance and efficiency, SFO expects to complete consultation with NM SHPO re: the site survey and assessment of SNL/NM and finalize a Cultural Resources Management Plan for the site.

Planning also includes finalizing the Memorandum of Agreement with NV SHPO regarding TTR. The SNL TTR Historic District will be fully documented with HABS/HAER Level II-type documentation and planned renovations at the site will continue.

SNL will complete the KTF survey and assessment report. SFO will consult with HI SHPO regarding the site as a whole and anticipates establishing a Cultural Resources Management Plan for the site. This will become a higher priority if changes to the built environment are proposed by mission activities. Otherwise, it will remain an out-year activity, with the goal of finishing within 3 years.

In terms of outreach and education, SNL's cultural resources management web site will be launched and expanded over the coming fiscal years. SNL anticipates modifying and improving it based on user feedback to ensure usability and the ability to reach an audience interested specifically in cultural resources management.

Savannah River Site

Introduction

The Savannah River Site (SRS) is a 310-square mile Department of Energy industrial complex located in the Sandhills region of South Carolina. It encompasses parts of Aiken, Barnwell and Allendale counties and is bordered on the west by the Savannah River and Georgia. Operated by Savannah River Nuclear Solutions (SRNS) and its partners under contract to the Department of Energy Savannah River Site (DOE-SR), SRS processes and stores nuclear materials in support of national defense and U.S. nuclear nonproliferation efforts. The Site also develops and deploys technologies to improve the environment and treat solid and liquid nuclear and hazardous wastes left from the Cold War. In addition, a second DOE entity, the National Nuclear Security Administration - Savannah River Site Office (NNSA-SRSO), oversees the tritium production complex while the newly named Savannah River National Laboratory (SRNL) and the Savannah River Ecology Laboratory (SREL), operated by the University of Georgia, occupy research facilities on Site. The SRNL, a multi-program laboratory facility, is the national laboratory for DOE's Environmental Management program. In this capacity, SRNL applies its expertise and applied technology capabilities to assist sites across the DOE complex in meeting cleanup requirements. While current missions remain the highest priority, SRS leadership places great importance on developing broader missions for SRS that use its unique capabilities in order to address critical national missions.

Known as the Savannah River Plant (SRP) prior to 1989, SRP produced plutonium and tritium for use in the manufacture of nuclear and thermonuclear weapons during the Cold War. Nine separate industrial process areas - five heavy-water moderated production reactors, two chemical separation areas, a fuel and target fabrication area, and a heavy water production area - were constructed as well as research and development facilities, administrative and support properties, and plant infrastructure. Du Pont, as prime contractor for the Atomic Energy Commission, constructed these facilities and the landscape that enveloped them as an integrated plant between 1950 and 1956. The close of the Cold War ended the original production mission and many of the original production facilities were shut down or adaptively reused to suit ongoing or new missions.

After the production mission ended, the Site's focus turned to accelerated clean up that required compliance with Federal regulations concerning the evaluation of SRS Cold War historic resources. Prior to 2003, compliance with Federal preservation laws for threatened historic Cold War resources was completed on a case-by-case basis under SR's Environmental Quality Management Division. In 1997, DOE elected to fund a multi-year history project to develop a narrative on SRS's technical history in preparation for SRS's fiftieth anniversary. In addition to the narrative, SR contracted for surveying significant Cold War resources that had reached or would reach 50 years of age by year 2000. This was expanded to an inventory of Cold War resources constructed between 1950 and 1989 to help fulfill DOE's Sections 110 and 106 responsibilities under the National Historic Preservation Act (NHPA).

A comprehensive inventory was completed and a historic context developed for Savannah River's Cold War properties in 2004. Approximately 750 buildings and structures constructed between 1950-1989 were surveyed. At the close of that effort, 227 properties and a landscape were recognized as a National Register of Historic Places (NRHP) eligible Cold War Historic District. Eleven properties within that district were considered to be individually eligible to the NRHP. SRS has no National Register listed properties nor any National Historic Landmarks. The NRHP boundary coincides with the Site's

perimeter. In addition to the Cold War Historic District, SRS maintains a significant collection of Cold War objects/artifacts that are curated in the Site's Curation Facility located in A/M Area.

Given the Site's ongoing missions, DOE-SR and the NNSA-SRSO recognized that site operations may impact Cold War NRHP-eligible properties over the next decade and that a plan was needed to avoid, minimize, or mitigate adverse effects to these properties. As a result, DOE-SR chose to develop a Programmatic Agreement (PA), in consultation with the South Carolina State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), the SRS Citizens Advisory Board (SRS CAB), the Citizens for Nuclear Technology Awareness (CNTA), and the cities of Aiken, Augusta, and New Ellenton, for the preservation, management, and treatment of the NRHP-eligible historic properties within the SRS Cold War Historic District and the establishment of the Cold War Program.

The PA specified that a Cultural Resources Management Plan (CRMP) be developed that would identify a treatment plan for Cold War historic properties, set policy to preserve a production area, develop a public outreach initiative that included heritage tourism goals and define a mitigation plan for adversely affected historic properties that involves documentation, oral history and research. Specifically, the latter called for a series of thematic studies on the Site's major production processes and associated historically important themes. Overall, the Cold War Program is well integrated into the Site's Environmental Management mission.

The SRS Cold War Historic Preservation Program assists DOE-SR in managing its compliance with Sections 106, 110, and 111 of the NHPA for Cold War and later era properties. New South Associates under subcontract to SRNS serves as the Site's Cold War preservation consultant. The Savannah River Archaeological Research Program (SRARP), under the auspices of the South Carolina Institute of Archaeology and Anthropology, handles the Site's compliance for archaeological resources.

Three-Year Progress Overview

During the past three years, the SRS Cold War Historic Preservation Program has evolved from a newly established program to a mature program with expanding goals and needs. The Cold War Program cultural resources staff now includes two historians that meet the Secretary of the Interior's professional standards and are fully trained to handle DOE-SR's compliance needs, a curator, and a curatorial assistant. The curatorial staff is full time and is stationed in the Site Curation Facility. The historians are full to part-time depending on DOE-SR's compliance needs. The DOE-SR Program Manager and the M&O program manager direct the program.

Building/Facility Preservation

As the 2004 inventory included all Cold War era properties, not just those 50 years of age or older at the time of the survey, the inventory remains up to date. No new Cold War era properties have been identified. The historic property inventory is integrated into the Facilities Information Management System (FIMS), the Department of Energy's corporate real property database for real property as required by DOE Order 430.1C Real Property Asset Management order. This database is updated annually. The system provides the Department with an accurate Inventory and management tool that assists with planning and managing all real property assets, including heritage assets or historic

resources. The major categories used for the heritage assets or resources follow National Register vocabulary – NRE (National Register Eligible), Evaluated –not historic, and Not Evaluated.

In terms of benchmarks, both the short and long-term goals of the program are congruent with those outlined in the CRMP. In addition, the Program produces an Annual Report that it submits to the South Carolina State Historic Preservation Office for review and comment. The Annual Report provides a catalogue of preservation activities that have been accomplished each year, noting mitigation goals reached, public outreach successes, counts on artifacts accessioned into the collection and tour participation, as well as discussion of goals for the next year. The Program currently has a webpage on the DOE-SR website that describes the program and its accomplishments.

Documentation and research for the Site's final thematic study on Savannah River's Research and Development facilities is ongoing with submittal slated for 2018.

Artifact Preservation

Approximately 375 artifacts have been accessioned into the Cold War collection in the last three years adding to this important collection stored in 315-A/M, a warehouse adapted for this use and opened in 2012. The Program has also successfully scanned 30,000 historic photographs, an estimated 15% of the Cold War era historic negatives, to be made available to the public. This exceptional historic photographic collection shows the transformation of South Carolina's agrarian landscape into a Cold War production plant in the 1950s.

The David Brothers, who appeared in the Wizard of Oz, were pipe welders employed during SRS construction, circa 1953.

The Curation Facility has given the program a physical identity within the SRS workplace and a place where Site personnel see preservation in action. DOE-SR allows tours of the Curation Facility that houses the Cold War artifact collection and the site's archaeological collections by appointment. Visitors are given a 45-minute tour showing the overall collection but highlighting key artifacts that may reflect the interest of the visiting groups or the Site's general history. The tours educate the workforce about the Site's past, using artifacts to tell that story. More than 700 SRS employees have toured the Curation Facility over the past three years. These tours also present valuable context for the Site's preservation objectives, helping Site employees of all ranks understand why preservation is important.

Developing Partnerships

DOE-SR works in partnership onsite with NNSA and with the SRS National Laboratory. Both organizations have been working in cooperation with the SRS Cold War Historic Preservation Program, particularly in regard to historic artifacts. For example, the National Laboratory has donated robots to the collection, a product of robotic research and development in the 1980s. Curation staff has

Curator Melissa Jolley pointing out the DuPont era Building Model for the Heavy Water Component Reactor, or known on Site as HWCTR (Hector) to Elizabeth Johnson, SC SHPO. Brian Lusher, Advisory Council; Brenda Baratto, Aiken County Historical Commission; Walt Joseph, SRS Heritage Foundation; and others.

researched and developed an exhibition for loan of the robots to the newly established SRS Museum in downtown Aiken that includes film footage of their historic use and interpretation panels.

DOE-SR works closely with the SC State Historic Preservation Office in the identification and evaluation of historic properties. It also works in partnership with knowledgeable organizations such as the SRS Heritage Foundation and other groups particularly in the identification of significant artifacts and has hosted teams for knowledge transfer between cultural resources staff and knowledgeable individuals when appropriate. DOE-SR will enter into a Memorandum of Agreement with the Aiken County Historical Museum to ensure a streamlined loan process for artifacts in the future and to lend curatorial support in 2017-2018. The Cold War Historic Preservation Program also works with local universities to fill internship positions as needed and there is consideration of creating a volunteer organization of knowledgeable retirees to aid in artifact research and to help with Curation Facility tours.

Public Outreach and Heritage Tourism

The Program's public outreach initiatives have come to the fore in the last three years. DOE-SR has initiated a "history" tour for the public to visit a historic town site and a reactor area in 2017 by bus. The first two history tours were at capacity with about 25 individuals in each. Public Affairs and the Site's cultural resource staff created the scripts and led the tours. Post-tour surveys indicated they were a success with high marks given to all involved. Four more tours are planned for 2018 and an interpretive panel has been designed and fabricated for installation at the historic town site. As SRS does not have a museum or visitor center onsite, these tours provide a valuable opportunity to educate the public about the Site's legacy.

SRS Sponsored Heritage Tourism Meeting, Redcliffe Plantation Historic Site, Beech Island, SC, September 2017.

DOE-SR sponsors community wide Heritage Tourism Meetings that are another success both for the exchange of information of tourism ideas but also for their role in the greater community's recognition that SRS is also a historic place – a historic property with state, local, and national significance. The region's preservation and tourism community attends these meetings, organized on a quarterly basis by

DOE-SR in compliance with the PA. The well-attended meetings are held at museums, historic sites, heritage centers, and libraries throughout the Central Savannah River Area. Tours are typically given at the host site and the sometimes 30-person strong group will patronize the local restaurants.

These meetings provide an excellent opportunity for DOE-SR to report on the Site's preservation initiatives and to see how they maybe joined or complemented by outside tourism efforts. They also establish a cooperative basis for partnerships, allowing the Site to develop its public outreach. While the Site is not open to the public for safety and security reasons, its artifacts and their historical interpretation can travel. For example, the Site Curator is preparing an exhibit on the Site's historic train system for the Aiken Visitor Center that focuses on historic railroads. This opportunity developed from conversations at the quarterly heritage tourism meetings. Staff has also heard of the need for a traveling exhibit on the SRS that can fit the needs of both large and small institutions.

Section 106 Consultation

The most significant Section 106 undertaking in the last three years is still ongoing. DOE-SR is currently involved with drafting an updated PA that will change its preservation and public outreach initiatives. The 2004 PA specified the development of a Cultural Resources Management Plan (CRMP) to define a treatment plan for all Cold War historic properties but in particular a "road map" for the preservation of a reactor area. The program's major challenge within the last three years has been a reassessment of this preservation goal and the development of a preservation platform and public outreach initiative that can meet the original intent and scale in the 2004 PA but will be feasible in 2017. For the last two years, stakeholders have made field visits, attended meetings and provided their input to the process. The cultural resources staff and preservation professionals have shepherded this process and a draft revised PA has been written and is ready for final consultation. The revised PA has a more robust preservation plank and a more fully developed public outreach component.

Projection of Activities and Accomplishments

The SRS Cold War Historic Preservation Program will continue to keep its inventory of historic resources up to date so that DOE-SR meets its Section 110 responsibilities. The Program will complete the final thematic study on the Site's Research and Development efforts and facilities in 2018, closing out a Section 106 mitigation obligation. This study includes oral history research and documentation of the Site's laboratory operations from construction through the end of the Cold War. The Program will continue to provide public tours in conjunction with Public Affairs.

The Program intends to maintain its progress on the scanning of historic photography and other historic materials for posting on a new web site devoted to Cold Historic Preservation that will be developed in 2018. The intent is to continue to grow the artifact collection and to develop avenues to interpret the Site and its legacy through off site locations where the Cold War artifact collection can play a major role. The Program is also exploring the potential for traveling exhibits.

To date, the Program has been focused upon its Section 110 and Section 106 responsibilities but is now sufficiently established to look more fully at adaptive reuse of its historic properties, creating awareness of Section 111, and complying with EO 13693. In the past, DOE-SR has adaptively reused historic properties to a limited extent however; this has been based on pragmatics, safety, and security rather than adherence to the preservation of historic properties. Purpose built production facilities have safety hazards, site geography may preclude mixed uses, and other factors may make this requirement a

challenge. DOE-SR sees a potential opportunity in adaptive reuse specifically for historic properties used administratively and can explore that possibility.

The current CRMP does not contain a list of historic properties that are available for transfer, lease, or sale but that information can be included in the next update. DOE-SR has leased historic properties to onsite groups in the past but not under Section 111 and money accrued has not been directed toward the rehabilitation and maintenance of historic properties. Also, meeting the requirements of EO 13693 may be more fully addressed if the revised PA is adopted in that building preservation plans that follow the GSA model are proposed for key historic facilities.

Finally, we will pursue training opportunities on an annual basis to keep staff up to date for safety, security and professional certifications.

SLAC National Accelerator Laboratory

Introduction

The SLAC National Accelerator Laboratory (SLAC) located in Menlo Park, CA is operated by Stanford University for the U.S. Department of Energy under a lease that extends through 2043. The site is located on 426 acres of land owned by Stanford University in an unincorporated portion of San Mateo County, California. SLAC conducts research in the areas of photon science, particle physics, particle astrophysics and cosmology, accelerator physics and accelerator research and development, which support research in a wide range of fields including structural biology and medicine, molecular environmental science, materials and nanoscience and ultrafast X-ray science.

Founded in 1962 with the construction of the two-mile linear accelerator (linac), the longest linear accelerator in the world, SLAC quickly became the world-leading laboratory for accelerator design and detector development, and importantly, for revolutionary discoveries in particle physics. The linac was soon followed by construction of electron-positron colliders and the Stanford Synchrotron Lightsource (SSRL), which, as an early synchrotron radiation source, pioneered pivotal X-ray studies in materials, chemistry and biology. To date, four Nobel prizes have been awarded for research done at SLAC.

In the mid-2000s, SLAC continued its pioneering work in accelerator development by proposing to use a portion of the two-mile linac to build the world's first short-wavelength X-ray Free Electron Laser (XFEL). The Linac Coherent Light Source (LCLS) was commissioned in 2009, producing ultrashort, ultrabright pulses of coherent X-rays that transformed X-ray science. SLAC's mission is to become the world-leading laboratory for X-ray and ultrafast science, based on its leadership in electron accelerator physics and application of X-ray science to materials, chemical and biological sciences. X-ray science plays a primary role in elementary particle physics in areas of theory, simulation, instrumentation, high-repetition-rate fast-readout-detector technology, and massive scale data analytics.

Three-Year Progress Overview

In early 2010, DOE and SLAC initiated the development of the Historic Resources Study (HRS) as part of DOE's compliance with Section 110 of the National Historic Preservation Act (NHPA). In June 2010, a literature search for historic property records was performed at the Northwest Information Center of the California Historic Resources Information System in support of the historic context statement. Between 2010 and 2011, Page and Turnbull staff, under the direction of SLAC, conducted research about the facility including: interviews with SLAC staff; review of historical documents, maps, facilities records, and historic photos at the SLAC Archives and History Office; and additional research using SLAC's extensive online library and archive. The initial HRS was submitted to the California State Historic Preservation Officer (SHPO) in January 2011. Between 2011 and 2016, Page and Turnbull conducted additional building-specific research in order to produce the State of California Department of Parks and Recreation (DPR) forms for inclusion in the Section 106 process, and to support update of the HRS.

In 2012, Stanford University completed an archaeological survey report for the land leased by Stanford University to the DOE, and the entire 8,100 acre property owned by Stanford University. The survey

report was prepared following the *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48FR44716).*

SLAC is comprised of 262 built resources, including buildings and structures, that were constructed between 1963 (the earliest building at the facility) and 2013 and were surveyed and inventoried for the HRS. The HRS identified 67 resources constructed within the 1962-1970 period of significance that represents the Linac Fixed Target Era for unique, site specific designs and contributions to high energy physics at SLAC. The 70 properties at SLAC that are 45 years of age and older as of 2014 (constructed between 1963 and 1969) were evaluated for historic significance and formally documented on the DPR Series 523A (Primary Record) forms. Of the 70 properties, End Station A (Building 061) was found potentially eligible for listing as an individual resource in the National Register of Historic Places under Criteria A and C.

Two potential historic districts were also identified and evaluated using DPR 523D (District Record) forms in support of the Section 106 review process. The Fixed Target Linac Historic District was found eligible for listing in the National Register of Historic Places under Criteria A and C, with thirteen resources eligible as contributors to the discontinuous Fixed Target Linac Historic District.

Following several updates and revisions of this document, at the request of the State Historic Preservation Officer (SHPO) in Sacramento, CA, DOE formally submitted the updated HRS report, *SLAC National Accelerator Laboratory Historic Property Survey Report,* in February 2016, and received SHPO concurrence in June 2016. The report includes an inventory and evaluation of buildings and structures located at the SLAC site, a historic context of the facility's development, and State of California Department of Parks and Recreation (DPR) 523A (Primary Record) forms for all resources constructed within the established period of significance (1962-1970)

After receiving concurrence on the HRS from the State of California in June 2016, DOE and Stanford University made a joint decision to pursue negotiations with the SHPO on a programmatic agreement (PA). The PA, in conjunction with the HRS, is an important and necessary step toward effectively integrating the goals and objectives of the NHPA with the active scientific research mission at SLAC.

Projection of Activities and Accomplishments

Until a PA is successfully negotiated, DOE and Stanford University will continue to fulfill its obligations for consultation under the NHPA Section 106 review process. In the future, DOE may seek consultation with the Advisory Council for Historic Preservation to help facilitate completion and concurrence on the PA for SLAC.

Southwest Power Administration (SWPA)

Introduction

Southwestern Power Administration (Southwestern) was established in 1943 by the Secretary of the Interior, under Section 5 of the Flood Control Act. The power marketing functions of the Department of the Interior with regard to SWPA were transferred to the Secretary of Energy when DOE was created. Southwestern's primary mission is to market power from U.S. Army Corps of Engineers multipurpose dams operating in a 4-state region to a 6-state customer region (*See Figure 1*). Southwestern operates and maintains 1,380 miles of high-voltage transmission lines, 24 substations, and a communications system that includes microwave/fiber communications system that supports operation control of the tower system and mobile communications. Over two-hundred full-time employees work from offices located in Gore, Oklahoma; Jonesboro, Arkansas; Springfield, Missouri; and Tulsa, Oklahoma. Around-the-clock power scheduling and dispatching are conducted by staff in the Springfield, Missouri Operations Center. Modifications to the power system are primarily for reliability and customer demand purposes, with no major construction or expansions of the transmission system footprint since the early 1970's.

Southwestern Power Administration Customer Region Map

For the purposes of historic properties identification and protection, Southwestern's activities are largely related to maintenance, operations, rebuilds and upgrades within the existing footprint of the transmission system and rights-of-way (ROW). Southwestern abides by obligations under Section 110 and Section 106 of the National Historic Preservation Act as amended (54 U.S.C § 306101 et seq.) to assess potential impacts to historic properties. Southwestern administers its streamlined cultural resources program primarily through the stipulations contained within three separate state-based (Oklahoma, Arkansas, and Missouri) Programmatic Agreements (PA) that address operations and maintenance activities and their compliance pursuant to Section 106.

Transmission Line Tower Lattice Support Structure

Stipulations for the Missouri and Oklahoma PA required Southwestern to conduct a Section 110 evaluation. Southwestern conducted Section 110 assessments for all in-fee owned facilities, which included communication towers, substations, fiber communications stations, and maintenance facilities (*Figure 2-representative of Section 110 facility evaluation location with Tower Structure*) located within the state of Oklahoma, Arkansas, and Missouri. That evaluation determined there are no listed or

potentially eligible historical properties on Southwestern owned properties. At four of Southwestern's facilities, within the New Madrid fault line vicinity, deep disturbance archeological monitoring is recommended during soil disturbing construction activities due to the propensity of buried deposits or artifacts resulting from deposit by seismic activity.

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 ROW, substations, communication sites, maintenance facilities, and ancillary features. Southwestern does not qualify as a Federal land management agency for non-owned, easement-obtained, transmission line ROW, and therefore would not be under obligation to manage or maintain historic properties found within these easement locations. If historic properties are identified during Section 106 analysis or by way of following the PA stipulations, Southwestern's normal practice is to avoid adverse effects by modifying a project's design or the planned activity to avoid the area of concern.

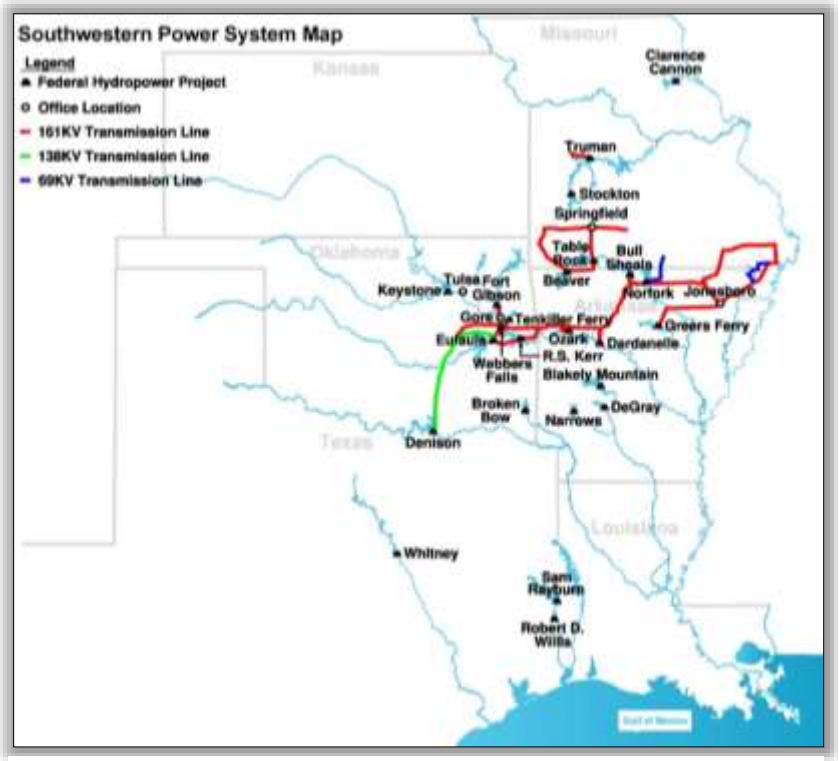
Tree Grown Up Through Spring Near Communications Site

Three-Year Progress Overview

During the reporting period, Southwestern initiated the PAs and/or Section 106 review process 25 times with findings of "no adverse effect" to historic properties in all projects. New Southwestern owned or managed historic properties were not found during the reporting period. In 2017, Southwestern's contract archeologist incidentally discovered and recorded one new site just outside of the target project area. There were no adverse effects to the identified site and the project proceeded according to original design and plan.

In August 2014, Tribes, the Oklahoma, Arkansas, and Missouri State Historic Preservation Offices (SHPO), the Oklahoma Archeological Survey (OAS), the Advisory Council on Historic Preservation (ACHP), and Agency stakeholders received an invitation to participate in the creation of a new Multi-State Programmatic Agreement (PA) for Southwestern maintenance and operations activities conducted in Oklahoma, Arkansas, and Missouri that when signed, will replace the existing, three-separate, state-based PA's. Consultations with the ACHP, SHPOs and OAS continued during 2014-2016. In 2017, it was determined that a draft PA was ready to be provided to the Tribes for government-to-government consultation. Tribal Kickoff Phone Conference Meetings were conducted in May and June of 2017. Following the tribal consultation meeting that was conducted Oct. 17-19, 2017, Southwestern has continued consultation efforts, with expectation for completion in 2018. Upon conclusion and final reviews, Southwestern anticipates being able to release the draft PA for public review and comment.

Per the stipulations in the current PAs, Southwestern updates its cultural resource inventory database on a three-year cycle. The cultural resource inventory database provides a comprehensive repository of previously surveyed areas and/or known cultural resources or artifacts, on lands owned or administered by Southwestern (and within a one-half mile radius of them) and serves as the foundation of a proactive historic properties ID & management program that will help ensure compliance with local, state, Tribal, and Federal regulations. The cultural resource inventory database was updated and integrated into Southwestern's new GIS Database in 2017. *Figure 4* depicts the GIS database coverage area for cultural resource site polygon overlays in Southwestern's ROW and facilities. This recent data conversion, into GIS, has been a tremendous success as Southwestern can now quickly perform research, transfer data, create geographical representations of project parameters, optimize, and streamline its historic property protection program both for internal and external project stakeholders.



Southwestern Power Administration GIS Cultural Resource Data Coverage Map

In 2016, Southwestern's Environmental Specialist attended a 2-day ACHP Section 106 Essentials Course, a 3-day Section 106 Agreements Documents workshop and a Native Americans Grave Protection and Repatriation Act (NAGPRA) Essentials course in 2017. In 2016, Southwestern appointed a new Administrative Officer (also the Director of EHS&S) of its cultural resource PAs, who subsequently attended the attended the 2-day ACHP Section 106 Essentials Course in 2017.

Southwestern retained the contracting services of Registered Professional Archeologists (RPAs) to aid Southwestern in providing cultural resource program implementation, survey investigations, consultations, deep disturbance archeological monitoring, assistance with the implementation of the PAs, and updates to the Class I Heritage Inventory and GIS integration project. Pan-American Consultants, Inc. successfully fulfilled this role for Southwestern from 2015-2017.

There were no historic properties identified by Southwestern during 2015-2017. One-hundred percent of all fee-owned properties have been surveyed all or in part, but did not necessitate evaluation for the

NRHP. A very small fraction, approximately 5%, of the 1,380 miles (16,727 acres) of easement-held transmission line ROW has been surveyed; surveys and investigations are done on a project by project basis. All employees are aware of policies which promote the protection and identification of historic properties through the annual training they received during 2015-2017.

Projection of Activities and Accomplishments

Southwestern expects to conduct its Cultural Resources Program in very similar aspect as the previous three years, with little to no significant changes expected. Here are a few program actions which are scheduled to be accomplished during the next three years:

- Southwestern hopes to have the Multi-State PA fully executed during 2018, at which time the current three separate state-based PAs would be terminated by the newly executed Multi-State PA.
- In 2018, Southwestern plans to conduct a NRHP eligibility determination on the Van Buren Substation Control Building, built in 1968, for its potential eligibility related to the rural electrification efforts of Arkansas.

Van Buren Substation Control Building, Van Buren, Arkansas

- Southwestern will be siting, conducting archeological surveys, and performing a Section 106 analysis on two new communications tower sites.
- Southwestern will be performing a Section 110 analysis on several facilities that have been purchased since the original facilities Section 110 group-analysis that was performed 11 years ago.
- Southwestern will implement a new Cultural Resource Plan in 2018.

Strategic Petroleum Reserve (SPR)

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 Facilities Information Management System's (FIMS) data dictionary, the SPR currently has the status of "Evaluated, Not Historic" and is described in the definition below from FIMS:

> "Evaluated, Not Historic" – The asset has been evaluated by the State Historic Preservation Officer(s) (SHPO)/Tribal Historic Preservation Officer(s) (THPO) and determined not to be historical, that is, not eligible for listing in the National Register of Historic Places (NRHP).
>
> Only use this designation if the site has obtained written concurrence for the asset from the State Historic Preservation Officer(s) (SHPO)/Tribal Historic Preservation Officer(s) (THPO).

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.

Western Area Power Administration (WAPA)

Introduction

WAPA is a federal hydropower transmission and marketing agency with a service area covering all or parts of 15 western and central states. When the Department of Energy was established in 1977, WAPA was created, and it inherited the Bureau of Reclamation's hydroelectric transmission system for all but Oregon, Washington, and Idaho and parts of extreme northwest Montana and western Wyoming. WAPA divides its 15 state area into five power marketing regions: Upper Great Plains (UGP), Rocky Mountain (RM), Desert Southwest (DSW), Sierra Nevada (SN) and Colorado River Storage Project (CRSP).

This extensive area requires a transmission system in excess of 19,000 miles of transmission lines and 1311 facilities such as substations, switch yards, communications sites, maintenance sites, and administrative sites. WAPA's transmission line right-of-way and the associated facilities locations were obtained under easement, permit, or lease from a federal or state agency or from Native American tribes. Therefore, WAPA has a little more than 9,000 acres divided among approximately 650 facilities. The majority of the parcels are 10 acres or less in area with room only for the structures and industrial hardware necessary to support the transmission of power. Consequently, our Section 110 cultural resources management responsibilities are limited to WAPA lands and electric power system's components, such as transmission line structures and the transformers, circuit breakers, impedance control devices, and utility buildings that make up the substations, switch yards, communications sites, and operations and main and maintenance facilities.

There are numerous historic properties along the portions of rights-of-way easements on tribal, public, and other federal lands which fall outside the small WAPA jurisdiction footprint. WAPA assumes Section 106 responsibilities for its maintenance and repair activities under the terms of the lease or right-of-way. Associated maintenance programmatic agreements (PA) have been developed in consultation with the relevant agencies and State and Tribal Historic Preservation Officers (SHPOs and THPOs respectively). The Advisory Council on Historic Preservation (ACHP) is a party to or has at least been consulted on each of the programmatic agreements as well. However, such historic properties are under the ultimate jurisdiction of the permitting land managing agency and not considered here.

The question of managing the objects under WAPA's jurisdiction as cultural resources is complicated by the fact that they are the components of an active electrical power system or series of systems that serves about 40,000,000 consumers every day through 679 customers such as military installations, civilian government facilities, Indian tribes, electric cooperatives and investor owned utilities. Reliable electrical service is much more than just a convenience for these millions of homes, stores, hospitals, and other functions of modern communities. The service reliability standards for this system are set by an outside agency, the North American Electric Reliability Corporation (NERC). Given the importance of reliable electric service to all users, the NERC standards are high and rigidly enforced. The result is a very active preventative maintenance program that leads to mandatory replacement or upgrades of structures and equipment on a regular basis.

WAPA makes demonstrable effort to develop its employees' awareness of cultural resources and the importance of the National Historic Preservation Act to the mission. Classroom training is annually conducted for field construction and maintenance personnel in order to raise their awareness of the

nature of the statutory and regulatory environment in which they work and to promote sensitivity to Native American concerns about historic property management. WAPA also invites tribes to participate in this training. WAPA conducts cultural awareness sensitivity training in the field to personnel prior to construction projects or where monitoring historic properties is conducted.

WAPA also has promulgated a *Cultural Resources Desk Guide* which provides managers and other WAPA personnel with contacts in cultural resources and an overview of the historic preservation process under the NHPA. However, this is more of a procedural guide than an attempt to acquaint the reader with the subtleties of historic properties and their value to the society at large as well as to the region in whose jurisdiction they may lay.

WAPA currently supports a Geographic Information System for each of four regional offices. There are considerable differences in what each region reports, and therefore, each regional database is being reviewed and a single agency-wide database is being considered for use by all of the regions.

WAPA has an active program of contracting for the completion of inventories in areas likely to experience construction or maintenance activities which may pose a threat to both known and previously undetected historic properties as well as to improve our inventory of the general cultural resource base of our rights-of-way and facilities. WAPA consults with the SHPOs or THPOs as appropriate and pursuant to any PAs they may have. WAPA also works with individuals and groups with relevant interests as consulting parties on its identification efforts. All survey's, of course, meet the Secretary of the Interior's standards for such work.

WAPA has PAs with SHPOs in several of the states in which it has facilities, which streamlines the Sec. 106 process for routine maintenance and repair tasks such as vegetation management and power system maintenance. Similar agreements are in place with a number of tribes whose reservations are crossed by WAPA facilities. In addition, a phased PA is being developed in one region where construction activities will take place over a protracted period and where effects to historic properties will be avoided or minimized or, if necessary, measures employed to mitigate adverse effects of construction.

At least some of WAPA's historic properties contribute directly to local communities and their economies through the provision of reliable electrical energy to those communities. Some of WAPA's power systems and associated facilities (transmission lines and substations) are considered historic properties, either formally determined so or meet the criteria, but are currently unevaluated. Such historic properties are in use as originally intended. For safety and security reasons, WAPA's historic properties are, for the most part, not accessible to the general population. Give the presence of high voltages on most of the components of the electric power system, WAPA's facilities are no place for the uniformed or the unprepared visitor.

The transmission lines, switchyards, and substations are sensitive points for the distribution of power and can only be accessed by trained WAPA personnel. WAPA's sensitive facilities are not open for general public access.

WAPA does not foster ecotourism in any direct way and cannot support adaptive use of most, if not all, of its historic properties. Nor can WAPA divest itself of historic properties except when there are major changes in the electrical power system that permit the abandonment of facilities.

Three-Year Progress Overview

As of this time, WAPA has recorded 71 cultural resources that are either completely or partially included in a WAPA owned parcel. The following table shows the distribution of eligibility determinations for the four regions.

WAPA treats all unevaluated cultural resources as eligible for National Register listing, until a formal determination is made. Effectively, then, WAPA presently has 68 historic properties in its cultural resources inventory, 60 of which will likely see changes in their National Register standing following the next site visit by cultural resources specialists. Eleven sites, or approximately 15 percent of the present inventory are evaluated for NRHP eligibility. Eight cultural resources (11 percent) are determined eligible while three cultural resources (4 percent), are not eligible. The remaining 85 percent are unevaluated and assumed eligible until determined otherwise.

NRHP Site Status by WAPA Region:

Region	***Eligible***	***Not Eligible***	***Not Evaluated***
Desert Southwest		1	34
Rocky Mountain	8		3
Sierra Nevada			6
Upper Great Plains		2	17
TOTALS	8	3	60

Projection of Activities and Accomplishments

WAPA has initiated the development of a formal cultural resources management program which WAPA anticipates will be under test by 2020. This process has four major goals for the next three years:

1. Completion of historical context documents for the four cultural resource managing regions.
2. Development of a geodatabase for the agency which will support management of the resources on a day-to-day basis as well as allow us to better track out longer term management actions and responsibilities.
3. Completion of an on-demand (on-line) training in cultural resources awareness and sensitivity for WAPA employees and contractors.
4. Development of the long term strategy for WAPA's management or treatment of the cultural resources both within its jurisdiction and in its various easements and leases.

The first step in this process, and already underway, is the historical context development process. The DSW region has completed its cultural context preparation and the RM region has its historical context statement in draft form with completion expected by September, 2018. Contexts for the SN and UGP

regions are planned, but their completion date is undefined. Work on these two contexts is anticipated to begin in 2018. Historical contexts, of course, are the core of an effective cultural resources management program.

WAPA initiated the second goal of a fully functional enterprise geodatabase in 2017. Integrating the existing collection of the regions shapefiles is in the works to creating a WAPA-wide database. Work on determining the common attributes of these shapefiles is presently underway and the next step of coordinating among the regions will be initiated by November, 2017. The first version of the new geodatabase is anticipated for trial in September, 2018. This trial version will be primarily oriented to capturing data critical to meeting immediate resource management needs. Future versions will have greater capacity for supporting longer term management needs and be in full use by 2019.

Training development is a complex process. Conceptualization of the online course content is only beginning. A task force will be formed during the winter months of 2017-18. A course outline will be developed along with a preliminary estimate of the cost of external assistance, most likely from WAPA's Public Affairs Department. The preliminary design will be reviewed by the regions and a decision made on how best to proceed with the development of the course.

Meeting the fourth goal of developing a longer term management strategy will require input from a variety of sources both within and outside WAPA. It also must have in hand the regional historic contexts, so that WAPA may identify the areas of sensitivity and likely concern. The regional contexts are the foundation for any sort of management strategy. They are the first step in the strategy development process. Once the contexts are completed, WAPA will prepare an overarching draft program that meets both the agency-wide and the regional needs. The final step will be the finalization of the draft through consultation with various SHPOs and THPOs, and perhaps the Advisory Council on Historic Preservation, who may have interests in the historic properties on WAPA lands. WAPA hopes to have the draft plan in place by September of 2020.

With these four goals met, WAPA's cultural resources program will be better prepared to meet its obligations under EO 13287 and the intent of Preserve America.