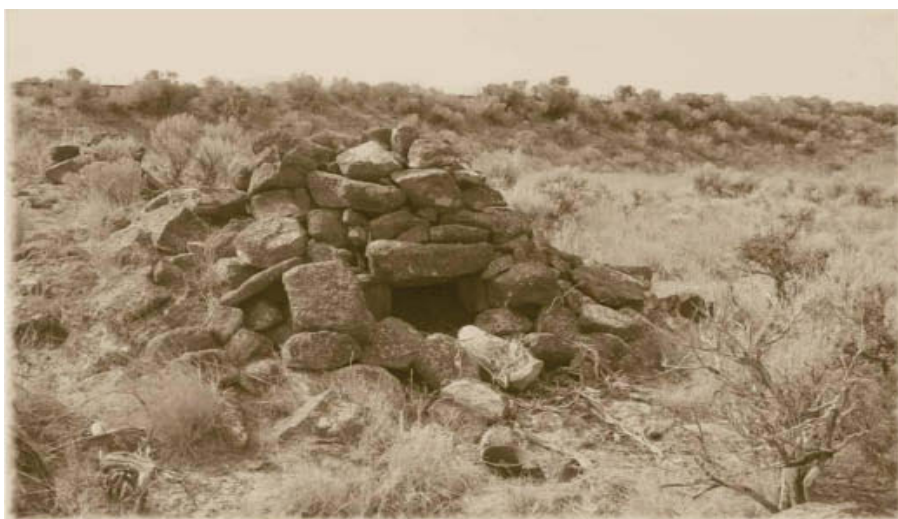


Idaho National Laboratory Cultural Resource Management Office FY 2011 Activity Report

Hollie K. Gilbert
Christina L. Olson
Brenda R. Pace
Julie Braun Williams

September 2012



The INL is a U.S. Department of Energy National Laboratory
operated by Battelle Energy Alliance



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**Idaho National Laboratory
Idaho Falls, Idaho 83415**

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ABSTRACT

The Idaho National Laboratory (INL) Site is home to vast numbers and a wide variety of important cultural resources representing at least a 13,500-year span of human land use in the region. As a federal agency, the Department of Energy, Idaho Operations Office (DOE-ID) has legal responsibility for the management and protection of the resources and has contracted these responsibilities to Battelle Energy Alliance (BEA). The BEA professional staff is committed to maintaining a cultural resource management program that accepts the challenge of preserving INL cultural resources in a manner reflecting their importance in local, regional, and national history.

This report is intended as a stand-alone document that summarizes activities performed by the INL Cultural Resource Management Office (CRMO) staff during fiscal year 2011. This work is diverse, far-reaching and though generally confined to INL cultural resource compliance, also includes a myriad of professional and voluntary community activities. This document is intended to be informative to both internal and external stakeholders, serve as a planning tool for future INL cultural resource management work, and meet an agreed upon legal requirement.

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ACRONYMS

ACHP	Advisory Council on Historic Preservation
AEC	U.S. Atomic Energy Commission
AIP	Agreement in Principle
ANPG	Arco Naval Proving Ground
ARPA	Archaeological Resource Protection Act
BLM	Bureau of Land Management
BEA	Battelle Energy Alliance
CFA	Central Facilities Area
CDRL	Contract Data Requirements List
CITRC	Critical Infrastructure Test Range Complex
CRM	Cultural Resource Management
CRMP	Cultural Resource Management Plan
CRMO	Cultural Resource Management Office
CRWG	Cultural Resource Working Group
CWI	CH2M Hill/Washington Group International
DD&D	decontamination, deactivation, and demolition
DOE-ID	U.S. Department of Energy – Idaho Operations Office
DOI	Department of Interior
EBR I	Experimental Breeder Reactor I
FTE	full-time equivalent
FY	fiscal year
GIS	geographical information system
HAER	Historic American Engineering Record
HeTO	Heritage Tribal Office (Shoshone-Bannock)
IAC	INL Archive Center
ICP	Idaho Completion Project
INEL	Idaho National Engineering Laboratory
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
ISMS	Integrated Safety Management System
ITD	Idaho Transportation Department
ITG	Idaho Treatment Group
MFC	Materials and Fuels Complex

NARA	National Archives and Records Administration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRF	Naval Reactors Facility
NRHP	National Register of Historic Places
NRTS	National Reactor Testing Station
PA	Programmatic Agreement
PBF	Power Burst Facility
REC	Research and Education Complex
RTC	Reactor Technology Complex
RWMC	Radioactive Waste Management Complex
SAGEEP	Symposium on the Application of Geophysics to Environmental and Engineering Problems
SHPO	State Historic Preservation Office
TRA	Test Reactor Area
USC	United States Code
WWII	World War II

Idaho National Laboratory Cultural Resource Management Office FY 2011

1. INTRODUCTION

The Idaho National Laboratory (INL) is the nation's premier nuclear research laboratory, a multi-program facility, and a National Environmental Research Park located in southeast Idaho. It is under the jurisdiction of the Department of Energy, Idaho Operations Office (DOE-ID) with some joint responsibility with the Bureau of Land Management in established grazing allotments. The INL consists of an 890 square mile reserve located approximately 25 miles west of Idaho Falls and approximately 12 miles east of Arco, along with a number of administrative buildings and laboratories located in Idaho Falls. Management and operations at the INL Site are under the direction of Battelle Energy Alliance (BEA), while they and other agencies, such as the Department of Homeland Security, contractors and subcontractors such as CH2M Hill/Washington Group International (CWI) and Idaho Treatment Group LLC (ITG) implement specific work scopes.



Figure 1. INL is located in southeastern Idaho.

DOE-ID and its contractors occupy eight main facility areas at the INL Site and several buildings in Idaho Falls. Nearly 300 DOE-ID owned historic buildings and several hundred other potential historic property types (e.g., roads, manmade ponds, concrete abutments) have been identified within the eight facility areas. A ninth INL facility, the Naval Reactors Facility (NRF), is operated under the supervision of the DOE Office of Naval Reactors. The land between the facility areas is largely undeveloped and dotted with prehistoric and historic cultural resources dating back at least 13,500 years and natural and man-made features that are important to Native Americans and others.

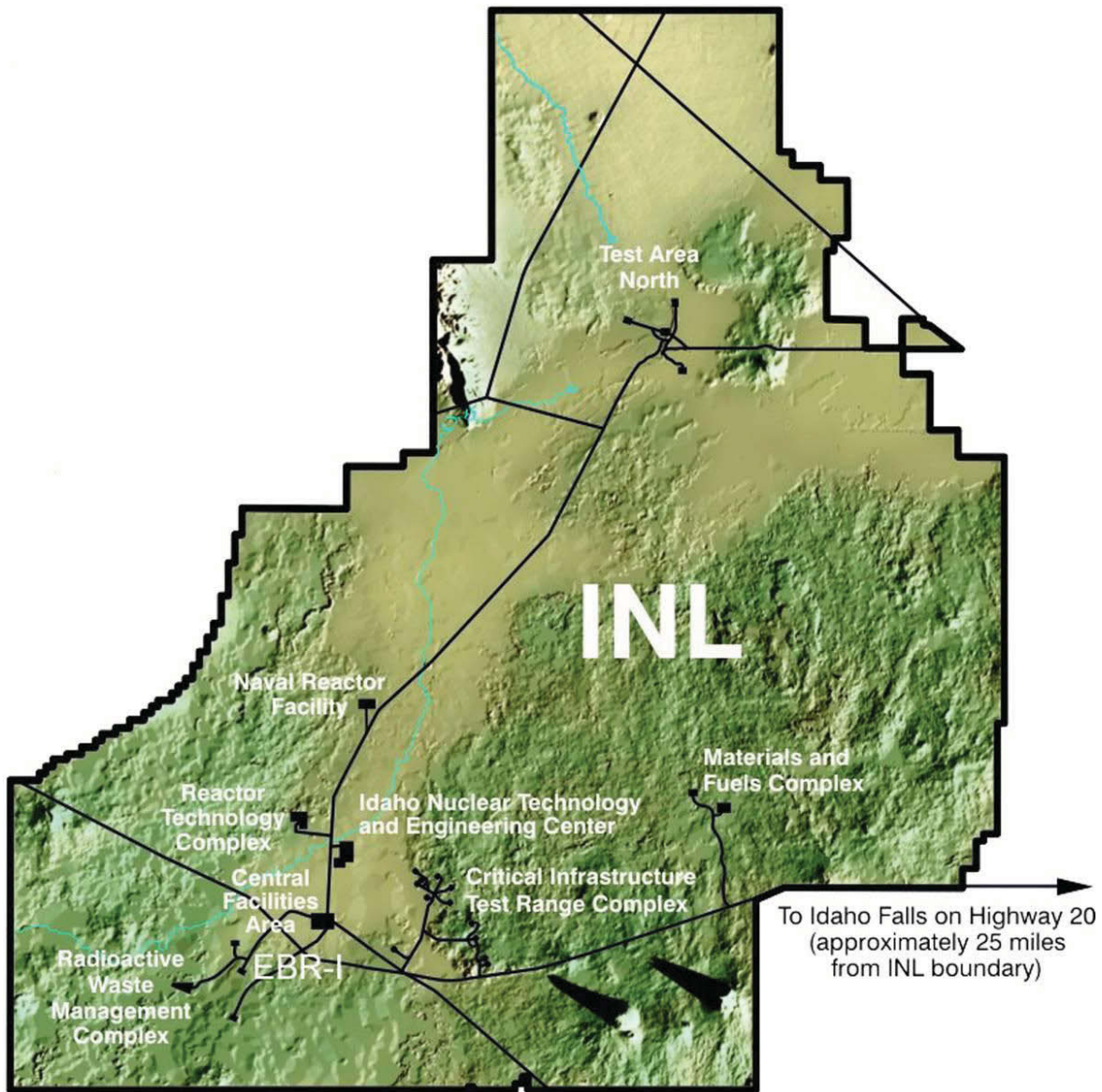


Figure 2. There are currently nine main facility areas at INL.

Cultural resource management (CRM) at the INL is conducted and coordinated by BEA's professional staff with general oversight provided by DOE-ID. As the centralized repository for cultural resource information, historic INL archives and multi-disciplinary expertise, the INL Cultural Resource Management Office (CRMO) also assists other Site contractors with historic data searches, project reviews, cultural surveys, and regulatory compliance. INL CRMO work balances the nuclear mission and

new and existing projects with the need to remove or stabilize the remnants of past activities and protect irreplaceable cultural resources.

This summary of activities satisfies an important requirement of the “INL Cultural Resource Management Plan” (CRMP) (DOE-ID 2011a) and the associated programmatic agreement between the DOE-ID, Idaho State Historic Preservation Office (SHPO), and Advisory Council on Historic Preservation (ACHP). The summary is intended for a diverse audience and to encourage awareness of, and appreciation for, INL cultural resources. Photographs taken by INL CRMO staff and others as credited, provide a visual context for many of the activities discussed in the text. Ultimately, the document is intended to stimulate discussion resulting in the activities planning and promotion and advancement of INL CRM program goals and requirements.

2. SETTING

2.1 INL Landscape and Biota

The INL is an 890 square mile reserve located within the Great Basin Culture Area on the northern margins of the Eastern Snake River Plain (Nace et al. 1972), tucked against the foothills of the Beaverhead, Lemhi, and Lost River Ranges. Locally prominent landmarks such as Big Southern, Middle, East, Antelope, and Circular Buttes are volcanic in origin and tend to dominate a landscape that otherwise appears deceptively flat. In reality, the lava terrain features ridges and swales, playas, craters, buttes, and caves. The Big Lost River has created a broad and relatively flat floodplain that is bordered by the rugged basaltic terrain. Extensive gravel deposits and a multitude of channels characterize the floodplain and reflect a more active period in the River's history.

The broad trough of the Big Lost River is also known as the Pioneer Basin (Butler 1968). It is a closed topographic depression, fed by snowmelt and rainfall on the lava plains surrounding Big Southern, Middle, and East Buttes to the south, and the drainage systems of Mud Lake, the Big and Little Lost Rivers, and Birch Creek to the north. The central feature of the Pioneer Basin is the Big Lost River itself, which enters the INL Site from the west, flowing in an easterly direction for about six miles before turning northward. Along the way the River winds through a broad alluvial plain interspersed with basalt outcrops and cut by numerous channels for some 25 miles before a combination of stream flow rates, gradient, and soil porosity cause it to disappear or sink into the Snake River Plain Aquifer in a low area at the base of the Lemhi Mountains.



Figure 3. View of snow-covered Big Southern Butte.

The Little Lost River and Birch Creek also terminate in natural “Sink” areas at the northeastern end of the Pioneer Basin.

The Big Lost River has endured significant natural and artificial modifications during its long history and natural channels that may have held water during times of greater effective moisture remain dry today due to cyclic drought combined with large-scale irrigation projects initiated in the early 20th century. The “Sinks” have also been affected by climate change and historic irrigation practices. Today they are seasonal wetlands that remain dry most years, but in the past during cooler and wetter conditions, they were part of a major inland lake known as Lake Terreton.

Lake Terreton was a shallow freshwater lake that dominated the northern reaches of the Pioneer Basin throughout much of the Pleistocene. Spreading over hundreds of square kilometers, it likely reached its maximum highstand at the end of the last Ice Age about 13,000 years ago with



Figure 4. Overlooking the dry Sinks.

the addition of meltwater from retreating montane glaciers (Butler 1970, Gianniny et al. 2002, Ostenaar 1999). On lands now within the boundaries of INL, greater effective moisture and reliable flows from Birch Creek and the Big and Little Lost Rivers fed a western sub-basin of the Lake approximately 90 square miles in extent. Farther to the east, Camas and Beaver Creeks sustained an eastern sub-basin known today as Mud Lake, located roughly 20 miles northeast of the INL. The cooler and wetter conditions that sustained Lake Terreton during the Pleistocene geological period also favored local rivers and numerous smaller playas that dot the nearby basaltic landscape. Plants like grasses and rushes flourished under these conditions. Warming and drying trends since the end of the Pleistocene have resulted in changes in the relative percentages of each plant species but virtually all species that existed then still exist today (Davis and Bright 1983).

Modern biotic communities on the INL are similar to those found in other cool desert environments within the Great Basin Culture Area. Plant species vary according to altitude from shadscale steppe to sagebrush and grass dominated communities to higher altitudes dominated by juniper along the slopes of the larger buttes and the mountain foothills. Various native grasses, low shrubs, and forbs are present in virtually all plant communities (Anderson et al 1996). In addition to large scale climatic changes, human activity, most notably within historic times, has affected INL vegetation. Agricultural attempts have left visible field scars and have introduced non-native crop species. Range fires and roads have destroyed native vegetation and provided pathways for invasive species such as cheat grass. Riparian plant communities, dominated by willow, wild rose, and large cottonwood trees, existed until relatively recent times, but they have generally not survived modern cycles of drought and upstream water diversion.

Toward the end of the Pleistocene a number of large faunal species such as mammoth and camel became extinct and during more recent times, species such as bison have also disappeared from the Snake River Plain and INL region. Modern INL faunal communities consist of terrestrial vertebrate species such as pronghorn, deer, elk, coyote, badger, and fox, along with numerous small mammals such as rabbits, mice, voles, bats, and ground squirrels. Reptilian species include a number of lizard species, the most abundant of which is the sagebrush lizard. Four species of snake are known to inhabit the area as well. These include the gopher snake, the western garter snake, the desert striped whipsnake, and western rattlesnake (Sehman and Linder 1976). Avian species are largely migratory, although sage grouse reside in the area year-round. During wet years, the “Sink” areas provide a temporary haven for many species of migratory waterfowl. Birds of prey, including owls, hawks, eagles, and falcons (Craig and Trost 1976) also occupy the INL area on a seasonal basis.



Figure 5. Redtailed hawk protecting her nest.



Figure 6. Concrete diversion on the dry Big Lost River, built ca 1910.

Throughout history, water has been central in land-use choices. This is especially true on the arid INL lands. Surface features like the streams, rivers, and large seasonal wetlands created at the “Sinks” have attracted animals and human hunter-gatherers, farmers, and ranchers with the lure of moisture in the cold desert environment. During cooler and moister climatic intervals from 22,000 – 12,000 years ago and possibly as recently as 720 years ago, hunter-gatherers were drawn to the resources offered by Lake Terretton. As conditions have dried in historic times, Lake Terretton has been reduced to a series of discontinuous semi-seasonal marshland playas and local rivers flow only on a seasonal basis. Water diversions of many kinds, including simple hand-dug ditches and carefully

engineered canals were created across the INL desert during historic times to deliver the precious water to hopeful settlers on homestead claims systematically established throughout the Pioneer Basin from the late 1800s through approximately 1925. During this period of settlement, surface water became increasingly scarce and recurrent cycles of drought, soil porosity, and upstream irrigation strongly affected these local habitations, leading to abandonment by most. In modern times, the extensive Snake River Plain aquifer that underlies the region has become accessible through enhanced technology and new needs based in scientific endeavor. The aquifer was one of the primary reasons the area was selected in 1949 to serve as the nation’s reactor testing station. INL CRMO research is filling in many of the details of the lives of the people who lived and worked on these arid lands, and the inevitable cycles of boom and bust linked intimately to water in the high desert.

2.2 INL Culture History



Figure 7. Great Basin Culture Area.

The Pioneer Basin and surrounding lava uplands are part of the northern Great Basin Culture Area and a stage on which at least 13,500 years of human history has played out in an intimate relationship with the natural environment. The wide variety of hunting implements and plant processing tools found on the INL attests to the ways in which human hunting and gathering populations adapted to changing conditions over time. Different technologies and foraging strategies were adopted as needed, enabling people to live in and productively use the challenging high desert environment. During initial European exploration, roads and trails were established and with the arrival of the railroad, a period of more focused settlement and landscape changes to support an agrarian lifestyle began. Water has always been a limiting factor in permanent settlement of the region, and overestimates of abundance combined with regular cycles of drought condemned most of these

nineteenth and early twentieth century settlement attempts to failure. In modern times, the basic transportation infrastructure established by hopeful farmers and irrigation developers along with discovery of the Snake River Plain Aquifer, a vast source of underground water, enabled the U.S. government to establish one-of-a kind facilities at what is now known as the INL. Initially, these activities were devoted to wartime (World War II) efforts and later the lands became host to ground-breaking scientific research.

2.2.1 Prehistoric Uses

The relationship between aboriginal hunting and gathering populations and the INL landscape has the deepest roots of all human endeavors in the region, enduring for more than 13,000 years without fundamental change. Tangible evidence of this long term land use is ubiquitous, though not randomly distributed on the landscape. The subtleties expressed in the archaeological record are reflective of changes through time in the types of resources utilized and the manner in which they were harvested. At the end of the last Ice Age, or the Pleistocene, for example, settlement and subsistence appear to have been strongly tied to rivers and marshes, including the marshy edges of Lake Terreton (Marler 2004). Water continued to play an important role in settlement and subsistence choices later during the dryer conditions of the Holocene (approx. 11,500 years ago) and during a wetter interval when Lake Terreton may have partially filled (Bright and Davis 1982), high vantage points appear to have been intentionally utilized, perhaps because of the commanding view that they provided of the surrounding area (Pace and Henrikson 2006, Pace 2007).



Figure 8. An obsidian projectile point found on INL.

Throughout the lengthy period of prehistoric use, the overall lifeway of hunting and gathering appears to have remained consistent as reflected by artifact assemblages recorded at nearly 3,000 archaeological resources found during cultural resource inventories. To date, approximately 10% of the Site has been surveyed for archaeological resources. A predictive model developed to facilitate long-term project planning and ongoing protection of this legacy have provided estimates of as many as 75,000 additional prehistoric archaeological locations that could exist within the INL Site boundaries (Ringe 1995).

2.2.2 Historic Uses

Since the early 1800s, Euro-American presence has been felt on what is now the INL Site. Initially, land-use was light and transient, perhaps much like that of the early Native American occupants. Like those earlier people, the first Euro-American occupants were intent on resource extraction. However, some Euro-Americans also trapped and hunted beaver and other animals for monetary purposes. In 1852, Goodale's Cutoff was established as a northern extension of the Oregon Trail; an alternate route to reach the rich resources of the Oregon Territory. Still, this was transient activity and the human imprint on the landscape remained modest.

Between 1860 and 1880, Goodale's Cutoff came to be used to trail cattle and eventually sheep, from western ranges in Oregon, Washington, and Idaho to eastern markets. During this same time period the mining industry in the mountains of central Idaho boomed and a number of wagon and stage roads were established between growing towns and cities along the Snake River and the mining camps of the interior. Many of these roads, including a portion of Goodale's Cutoff, crossed the INL Site and several continue

in use today. By the early 1880s, a number of ranching operations were underway at the north end of the INL near Howe and around the Big and Little Lost Rivers and the Birch Creek Sinks. Livestock were, and are, routinely herded across the Site from these areas to summer range near Big Southern Butte (DOE-ID 2011a; Gerard 1982).



Figure 9. Dressed stone railroad culvert ca. 1900.

While the appearance of Euro-Americans began on and near the INL Site in the early 1800s and the 1862 Homestead Act encouraged western settlement, it wasn't until passage of the Carey Land Act in 1894 and particularly the 1902 Reclamation Act, also called the Newlands Act, that homesteading efforts on these arid lands began in earnest. Most of these homesteads were located along the Big Lost River and in the Mud Lake region. Between 1905 and 1920 a number of water-control projects including the Mackay Dam and numerous irrigation canal systems were constructed. The town of Powell (also called "Pioneer") was established adjacent to the Oregon Shortline railroad, which was constructed through

the INL area in 1901, and the Big Lost River near what is now the Radioactive Waste Management Complex (RWMC) in the southwest corner of the INL. A second townsite, known as McCullum, was planned but never realized some distance to the north. An extensive irrigation system extends and radiates from the Big Lost River across the entire INL.

Although irrigation projects in the Mud Lake area were largely successful, irrigation efforts and related homesteading activities associated with the Big Lost River on the INL Site area generally failed due to insufficient water and all were essentially abandoned by the mid-1920s. In addition to roads and canals, and irrigation features, artifacts from the 1800s and early 1900s include the remnants of stagecoach stations and homesteading activity such as overgrown and barely discernible field scars and piles of field rocks, foundations, domestic items, and children's toys that give insight into the daily lives of the early pioneers. Over 100 historic archaeological sites have been recorded from this period with hundreds more awaiting identification and recordation. At many of these sites, careful INL CRMO research has enriched the archaeological evidence through the discovery of associated archival materials including official homesteading and irrigation company records that identify over 600 homestead claims filed on INL lands, family photographs and documents, and interviews with descendants of the early pioneers.

2.2.3 World War II and Post-War Ordnance Testing

With the outbreak of World War II (WWII), Pocatello, Idaho, was selected as a location to construct an ordnance plant with a mission to reline and test Pacific Fleet naval armament. Shortly after plant construction was completed, the Arco Naval Proving Ground (ANPG) was established on core lands that

would eventually become the INL Site, to test the relined guns. Beginning in late 1942, testing began and during the course of the War, all manner of ship weaponry, from anti-aircraft guns firing 3-in. rounds to the main battleship 16-in. guns were test-fired at the ANPG. The latter fired 2,800-pound test rounds from the Scoville railroad siding (now the Central Facilities Area [CFA]) as far as 20 miles to the north.

In addition to the ANPG, two ranges were used to practice aerial bombing. The Arco High Altitude Bombing Range was located southwest of the NPG and south of what is now Highway 20. The second range, called the Twin Buttes Bombing Range, was located east and south of the Materials and Fuels Complex (MFC; DOE-ID 2002).

Artifacts remaining from the WWII period are concentrated at CFA, southeast of MFC, south of Highway 20 near the buttes and the Big Lost River, and in a wide firing fan that extends from CFA to the northeast. At CFA, properties from this era include buildings like the brick bungalow that once served as quarters for a naval officer and his family, structures like concrete gun mounts and an 8-ft. thick concussion wall with an observation tower that looms above, equipment such as the gantry crane that unloaded all manner of weaponry and ordnance, and a landscape of roads, trees, and flowerbeds.

After the end of WWII, the ANPG continued its mission to test various kinds of conventional explosive ordnance. The post-war tests were designed to explore storage and transport methods to minimize the land area needed for storage and the potential for sympathetic explosions. In outlying INL areas, concrete targets, small observation towers, craters, and unexploded ordnance reflect work activities from this era while discarded domestic items from extensive trash dumps provide unique insight into the lives of military personnel and civilian ordnance workers and their families (DOE-ID 2011a).



Figure 10. Navy button found at post-war testing area.

2.2.4 National Reactor Testing Station

In 1949, the newly established U.S. Atomic Energy Commission (AEC) selected the ANPG as the location to build and test the nation's nuclear reactors. Land transfers between the Department of Defense and the AEC were concluded, private properties were acquired, and the National Reactor Testing Station (NRTS) was established. Later that year, and again in the early 1950s, additional land was acquired that brought the facility close to its current 890 square miles. The purpose of the NRTS was to provide an isolated location where prototype nuclear reactors could be designed, built, and tested. The Site was renamed the Idaho National Engineering Laboratory (INEL) in 1974, and renamed again in 1997 as the Idaho National Engineering and Environmental Laboratory (INEEL). In February of 2005 it became the Idaho National Laboratory (DOE-ID 2011a).

Since its establishment, 52 “first-of-a-kind” reactors and associated support structures have been constructed at the NRTS/INEL/INEEL/INL. Ground-breaking research fundamental to the development of nuclear power generation and nuclear propulsion has been conducted at the nine facilities that remain active today and at others that have undergone decontamination, deactivation, and demolition (DD&D). In 1966, in recognition of one aspect of the INL's scientific heritage, Experimental Breeder Reactor I

(EBR I) was recognized as a National Historic Landmark and was one of the nation's first properties to be listed on the then-nascent National Register of Historic Places.

Present and future Laboratory missions include development of the next generation of nuclear technology for power reactors, development and testing of national security technologies, and maintenance and expansion of a multi-program national research laboratory role. To meet these goals, INL Site facilities were consolidated into three primary areas including the Advanced Test Reactor Complex (formerly the Test Reactor Area), the Materials and Fuels Complex (formerly Argonne National Laboratory-West), and the Research and Education Complex (REC), a group of offices and laboratories in Idaho Falls. Environmental cleanup, including a significant Decontamination, Deactivation and Demolition (DD&D) effort comprise another important current mission with ongoing effects to historically significant INL properties.



Figure 11. HAER photo of CFA storage bunker.

INL building inventories include nearly 300 historic properties, including EBR I, INL's only National Historic Landmark, and others like the CFA World War II structures, considered to be DOE-HQ "signature" properties. Most of the remaining INL historic buildings have been modified and used for a variety of projects and programs through the years, but still retain historical significance. Indeed, change has been a constant in the architectural history of the Laboratory, perhaps as a partial reflection of the focus on function over style, the process of scientific discovery itself, and the fundamental role that INL facilities have filled in the advancement of nuclear research (Braun 2006a).

Today, many historic INL structures have been demolished or are planned for demolition. Prior to the start of any activities that would cause adverse impacts photographic and documentary evidence is assembled, often in Historic American Engineering Record (HAER) reports, to preserve an archival record of the important past scientific achievements and the places where they occurred. The INL CRMO manages many of these records and other data in a central archive, appropriately called the INL Archive Center (IAC). To assist present and future researchers, indices are also being developed to facilitate access to important archival data (i.e., photographs, technical reports) housed at the IAC and elsewhere. Additionally, INL is home to important nuclear era artifacts, which include items such as prototype nuclear-powered jet engines, a lead shielded locomotive, control panels, and reactor scale models. The EBR I Visitors Center displays some of these items.

2.2.5 Contemporary Resources and Values

Tangible evidence of the past such as lithic artifacts, prehistoric campsites, historic trails, homesteads, World War II, post-war and pioneering nuclear-era buildings, structures, and archives such as those described above comprise one form of cultural resource at the INL. A second, equally important form is more ethereal and less easily defined. These resources generally consist of cultural and natural places, landscapes, viewsheds, select natural resources, and sacred areas or objects that have importance for Native Americans and others such as the descendants of early pioneers and homesteaders and INL employees.

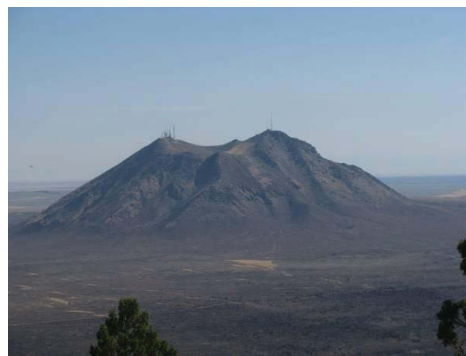


Figure 12. East or Radio Butte.

3. PROGRAMMATIC FRAMEWORK

A myriad of federal laws, regulations, and directives require federal agencies, like the DOE, to consider cultural resources in their ongoing operations. These requirements are broadly encapsulated in three primary federal laws; the National Environmental Policy Act of 1969 (NEPA 1969), the Archaeological Resource Protection Act of 1979 (ARPA 1979), and the National Historic Preservation Act of 1966 (NHPA 1966), as amended, and their implementing regulations. Summaries of all applicable requirements are provided in the INL CRMP (DOE-ID 2011a).

Some elements of the INL CRMO compliance responsibility are prescriptive, for example the routine completion of archaeological surveys to identify cultural resources that may be impacted by proposed “undertakings” on INL lands or reviews of proposed modifications to INL structures (NEPA, NHPA Section 106). Other elements allow more latitude, for example the requirement that federal agencies, including DOE-ID at the INL, identify and assume responsibility for all historic properties under their jurisdiction (NHPA Section 110), not only those lying in the path of proposed development (NHPA Section 106) and requirements for conducting public outreach and education about archaeology (ARPA).

The substantive requirements of the pertinent legal drivers are streamlined and tailored to meet the unique needs of the INL and are presented in the INL CRMP (DOE-ID 2011a). Reviewed and approved by the Idaho SHPO, Advisory Council on Historic Preservation, National Park Service, and Shoshone-Bannock Tribes, this document includes standards for identification, evaluation, and protection and, when appropriate, mitigation of all types of INL cultural resources. Finalized in 2005, regular updates ensure its continued relevance. A Programmatic Agreement between the DOE-ID, Idaho SHPO, and Advisory Council on Historic Preservation implements and legitimizes the CRMP. Within the CRMP, historic contexts and research designs have been developed to guide National Register eligibility assessments, Section 110 activities, and public outreach and education. Broad conceptual themes such as: prehistoric settlement and subsistence, early historic exploration and discovery, fur trapping and trading, emigration, transportation, homesteading and irrigation, agriculture, ranching, ordnance testing, nuclear reactor testing, cold war weapons and military applications, commercial power reactor safety and design, chemical reprocessing, and remediation of waste provide the primary contexts under which research is conducted. For archaeological sites, problem domains such as: chronology, settlement and subsistence, cultural relationships, demography, environment, technology, and data recovery techniques are also addressed.

The INL CRMP (DOE-ID 2011a) presents effective and efficient means to maintain compliance with regulatory drivers and implement DOE policies and procedures. The processes described in the Plan are designed to balance historic preservation with the fulfillment of primary INL missions as well as the need to clean up the environment while maintaining focus on the intent of the regulatory drivers, which is to preserve the important heritage contained within the INL Site boundaries. The Plan strives to create a balance between the past, present, and future. The INL CRMO prepares an annual summary report, including this one, that describes the tasks completed toward the general goals contained within the CRMP. The high level summaries that follow provide DOE-ID, regulators, the Tribes, stakeholders, and interested parties with an opportunity to reflect on progress and provide direct feedback for future activities. This interaction is critical to ensure that the CRM program remains focused on the stewardship of INL cultural resources for the benefit of present and future generations.

4. INL CULTURAL RESOURCE PROGRAM PERSONNEL

The INL CRM program is comprised of three entities: DOE-ID, the INL CRMO, and the Shoshone-Bannock Tribes' DOE Program. DOE-ID's Environmental Technical Support Division takes responsibility for general oversight of CRM activities through a designated Cultural Resources Coordinator. This individual is joined by DOE-ID's Tribal Liaison Officer from the Public Affairs Office, who in turn has lead responsibility for coordinating communications and interactions with the Shoshone-Bannock Tribes. The Tribal Liaison Officer also manages the DOE-ID funded Tribal DOE Program based at the Shoshone-Bannock Heritage Tribal Office (HeTO).



DOE-ID entrusts execution of its cultural resource program, policies, and regulatory compliance to the INL CRMO. The CRMO staff is comprised of BEA personnel who are qualified professionals in the fields of archaeology, history, architectural history, historic preservation, and archives. Each staff member has their own research interests and expertise but through teamwork and cooperation reach common programmatic and project-driven goals. CRMO staff also assists other INL contractors (i.e., CWI, ITG) and NRF in execution of cultural resource compliance for projects.



DOE-ID and the INL CRMO maintain a close cooperative relationship with the Shoshone-Bannock Tribes per a written Agreement in Principle (AIP) (DOE-ID 2007). The Tribal DOE Program is overseen by a tribal Program Director, who has broad responsibilities that include, among other things, implementation of the AIP through coordination of INL environmental programs, transportation safety, and cultural resource management. Technical specialists in the Shoshone-Bannock HeTO interact directly with INL CRMO staff and DOE-ID and participate in many activities, providing valuable assistance and a unique holistic perspective that facilitates protection of both tangible and intangible INL cultural resources.



SHOSHONE-BANNOCK TRIBES

5. CULTURAL RESOURCE MANAGEMENT OFFICE ACTIVITIES

5.1 Funding

During fiscal year 2011, four types of funding supported INL CRM work. “Direct” project funding was provided by specific INL projects or programs to support compliance with Section 106 of the NHPA. “Indirect,” or overhead funding, was provided by BEA to accomplish crosscutting activities not associated with specific projects and to address the full range of regulatory drivers associated with cultural resources. The Naval Reactors Facility provided funding to support cultural resource evaluations within their administrative area. INL CRM staff also served as subject matter experts on project teams based at Pacific Northwest National Laboratory in meeting regulatory requirements related to the permitting of new reactors for the U.S. Nuclear Regulatory Commission. Work for Others funding was acquired for the NRF and NRC activities.

5.2 Approach

Cultural resource management on the INL is a dynamic process with some short-term goals and activities being accomplished each year in support of the overarching management goals of identification, evaluation, and resource protection and preservation as described in the INL CRMP. As specific tasks are accomplished or goals achieved, they might be dropped from the list while others might become ongoing activities. New goals and tasks are added in response to changing conditions at the INL Site and within the regulatory framework that drives compliance activities, and in consideration of comments and advice from stakeholders. Goal implementation and completion are funding dependent.

There are ten long-term goals for the INL CRM program with a variety of ongoing and recurring general tasks associated with each goal. Section 11 describes specific tasks identified for FY 2012 to fulfill the goals.

Goal 1: Identify and Manage INL Cultural Resources

- Task 1. Reevaluate and update program requirements.
- Task 2. Seek and maintain preservation partners.
- Task 4. Inventory and record INL cultural resources.
- Task 5. Maintain program and project files and records, electronic databases, and GIS data.
- Task 6. Identify oral history subjects and conduct and archive oral histories.

Goal 2: Evaluate INL Properties for Historic Significance

- Task 1. Conduct research to develop and update prehistoric and historic contexts required to identify themes and establish the relative importance and National Register eligibility of specific resources.
- Task 2. Prepare National Register of Historic Places nomination documentation as requested by DOE-ID.

Goal 3: Monitor the Condition of INL Cultural Resources

- Task 1. Establish baseline condition of select INL cultural resources.
- Task 2. Assess condition of select INL cultural resources, including at a minimum, Aviators’ Cave, Prickly Cave, Middle Butte Cave, and WERF burial (10-BT-2046).
- Task 3. Collect data for yearly monitoring report (Routine visits to archaeological sites and project-specific visits).

Goal 4: Protect INL Cultural Resources

- Task 1. Participate in legal and regulatory reviews of INL documents and policies to ensure integration and maximize effectiveness of overall regulatory compliance.
- Task 2. Respond to unanticipated discoveries of cultural resources.
- Task 3. Review, administer, as appropriate, and archive external investigator permits and data use agreements and oversee subcontracts, when required.
- Task 4. Establish and maintain INL Archive Center by gathering and archiving, using professional standards, INL historical data (i.e., photographs, architectural drawings, maps) in such manner as to make data readily accessible.
- Task 5. Develop and implement specific site protection and stabilization plans, as needed.

Goal 5: INL Artifact Curation

- Task 1. Prepare pre-1942 artifacts in INL interim storage and associated documentation for accession into an accredited curatorial facility.
- Task 2. Ensure security of artifacts and associated documentation in interim INL storage.
- Task 3. Review and coordinate requests for use of INL artifact collections.
- Task 4. Prepare for and participate in annual inspection of curatorial facilities.

Goal 6: Stakeholder Involvement/Public Outreach

- Task 1. Participate in educational outreach programs (i.e., INL Speakers Bureau, Science Expo, Idaho Archaeology and Historic Preservation Month).
- Task 2. Coordinate and conduct small tours of select cultural resource sites.
- Task 3. Present information on INL cultural resources and prehistoric and historic contexts.
- Task 4. Solicit stakeholder input.
- Task 5. Present at professional events (i.e., conferences, meetings).
- Task 6. Publish peer-reviewed articles.

Goal 7: Interact with Native Americans

- Task 1. Comply with cultural resource-related stipulations in the Agreement in Principle between DOE-ID and Shoshone-Bannock Tribes.
- Task 2. Participate in regular Cultural Resource Working Group meetings.
- Task 3. Invite Sho-Ban Heritage Tribal Office (HeTO) representatives to participate in identification and protection of INL cultural resources.

Goal 8: Conduct Work Safely

- Task 1. Comply with “Archaeology Fieldwork Laboratory Instruction” (LI 1427-08-SITEWIDE).
- Task 2. Inspect equipment regularly.
- Task 3. Conform to all ISMS requirements.
- Task 4. Comply with all field requirements.
- Task 5. Complete all required safety training.

Goal 9: Maintain Professional Qualifications and Relationships

- Task 1. Identify and attend training to enhance/maintain skills.

- Task 2. Maintain memberships in professional societies and organizations and interact with other cultural resource professionals (i.e., State Historic Preservation Office, National Park Service, professionals at other DOE labs and federal agencies).

Goal 10: Activities Reports/Plans

- Task 1. Complete annual report of activities (2005 Programmatic Agreement).
- Task 2. Complete annual Dept. of Interior questionnaire (Contract Deliverables Requirements List [CDRL] F.45).
- Task 3. Complete annual monitoring report (CDRL F.46).
- Task 4. Complete regular reports to Shoshone-Bannock HeTO (Agreement-in-Principle).
- Task 5. Update the INL Cultural Resource Management Plan, as needed (CDRL F.47).
- Task 6. As requested by DOE-ID, prepare and submit to DOE-ID a NRHP nomination package for a significant INL cultural resource (CDRL F.48).

5.3 FY 2011 Highlights

Each year performance measures in the form of specific milestones related to the general activities discussed above are selected to guide work activities and gauge programmatic effectiveness. In FY 2011, the CRMO successfully completed all formal deliverables including the following:

- Annual Site Monitoring Report (INL/EXT-11-23652);
- INL input to the annual Secretary of the Interior's Questionnaire on the Federal Archaeology Program (Web page for links to these annual reports - <http://www.hss.doe.gov/sesa/environment/cultural/>);
- Annual Report of Activities (INL/EXT-11-23445)
- Several tours of, and presentations on, select INL cultural resources.

In addition to satisfactorily completing formal deliverables the CRMO staff also mentored two student interns who assisted in the completion of additional programmatic and project activities in FY 2011.

Field activities in FY 2011 were dominated by archaeological inventories and small scale test excavations completed to assess the potential impacts of ground disturbing projects under Section 106 of the NHPA (see Section 9), NHPA Section 110 investigations (see Section 6), and routine monitoring of particularly sensitive localities (see Section 10).



Figure 13. INL archaeologist and CRMO summer interns.

- Section 110 field activities in FY 2011 involved the identification and recordation of newly discovered resources and research-oriented test excavations, and provided opportunities for INL CRMO staff to conduct professionally stimulating research. The diverse inventories and refined classifications resulting from these projects are beneficial to the CRM program as a whole and the

resulting publications and presentations at professional meetings and conferences enhance the professional standing of the INL. Tribal counterparts were also involved in many of the activities. The sharing of information between INL CRMO staff and tribal counterparts helps to refine the holistic view of cultural resources that is central to CRM at the INL and addressed in law, regulation, and DOE policy (see Section 6).

- Preservation of INL's modern history was furthered during the FY 2011 timeframe by continued development of the INL Archive Center, where important data such as photographs, engineered drawings, and key documents reside and will be made available for researchers. The INL archivist oversees the archival collection (see Section 6).
- As in previous years, INL CRMO participation in tours and various educational events proved to be enjoyable for all. Member and leadership positions in professional organizations and development and maintenance of professional partnerships provided opportunities to share experiences, ideas, and research (see Section 7).
- Native American interaction continued through regular meetings, assistance in fieldwork, and comments on proposed INL projects. Their input and assistance aided the INL CRM staff in effectively assessing cultural resources of importance to the Tribes (Section 8).
- Section 106 project reviews in FY 2011 were dominated by the NRF Infrastructure Optimization project, a proposed new multipurpose INL haul road, several power line maintenance and expansion projects, and demolition of historic architectural properties (see Section 9). Activities included archaeological site re-identification and assessment, small scale test excavations, and archaeological survey of areas that had not been previously examined. Much of the power line work was completed by cultural resource subcontractors under permit through the INL CRM Office. Tribal counterparts within the Shoshone-Bannock Tribes' Heritage Tribal Office provided assistance for many of the archaeological investigations conducted by the INL CRM Office. Within the historic built environment, Section 106 reviews involved routine mitigation such as photographic and archival documentation as well as development of a public exhibit (see Section 9).
- Annual project and programmatic monitoring of select INL cultural resources resulted in identification of impacts to some. Impacts varied in severity and response to them followed notification procedures outlined in the "INL Cultural Resource Management Plan". Results of FY 2011 monitoring are detailed in "INL Cultural Resource Monitoring Report" (DOE-ID 2011b; see Section 10).

6. NHPA SECTION 110 PROJECTS

Section 110 of the National Historic Preservation Act (NHPA) directs federal agencies to identify, evaluate, and nominate historic properties for which they have responsibility to the National Register of Historic Places and to manage those properties in a manner that considers their protection and preservation. The purpose of NHPA Section 110 is to provide statutory emphasis as well as intellectual guidance to establish a program whose aim is not only to protect resources but also to achieve enhanced understanding of human history.

In addition to meeting compliance requirements and research goals, a common thread through all of the INL CRMO Section 110 projects is a commitment to partnerships. Developing synergistic relationships with fellow INL scientists along with students and researchers from regional museums and universities enriches thought, creativity, and intellectual rigor. These relationships help clarify the current regionally important research questions, and in return the INL provides a unique, relatively well-protected “outdoor laboratory” and extensive archives with which to seek ways to answer those questions.

The archaeological sites, historic architectural properties, traditional cultural areas, sacred Native American sites, natural resources, and INL facilities that define the INL landscape are integrated aspects of larger human systems adapted to the high-desert landscape of southeastern Idaho that have been operational for at least the past 13,500 years. CRMO Section 110 projects are selected to address research questions about how humans have used this landscape, how and why land-use has changed through time, and the roles of technology, gender, and ethnicity in the changes that have occurred.

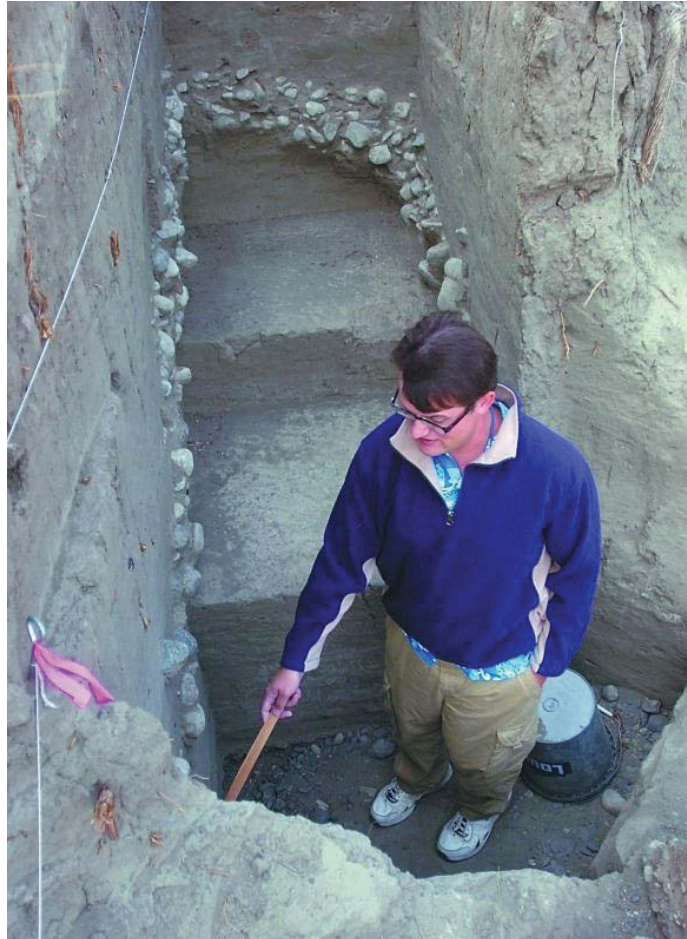


Figure 14. CRMO intern discussing excavation findings (photo taken by Post Register reporter Sven Berg).

6.1 Human Riverine and Lacustrine Adaptations

The primary FY 2011 Section 110 project, Human Riverine and Lacustrine Adaptation study, began in FY 2006. The study’s goal is to better understand how natural environment systems have changed through time and how human systems adapted to those changes, either by changing lifestyles or changing the environment itself (intentionally or inadvertently).

For a second year the project involved collaboration between the INL CRM program and researchers from the Center for the Study of the First Americans at Texas A&M University. The 2011 project activities contributed to the ongoing scholarly research on long term human use of the INL landscape

through targeted excavations at deeply stratified INL archaeological sites located along temporal and seasonal waterways.

With sufficient surface survey data in hand a new phase of investigations was initiated in FY 2011. Clearer understanding of prehistoric lifeways and responses to shifting climatic situations requires careful excavation of select localities that contain deeply buried sequential cultural horizons. In FY 2011, as a means to identify such locations, excavations were focused at an important prehistoric campsite located above the high water mark on the Big Lost River banks. Deeply stratified cultural deposits at this site extend more than two meters below surface and hold promise for providing information to contribute to a clearer understanding of local and regional human adaptations over much of the 13,000 + year period of human use. Research, artifact analyses, and field studies will continue through FY 2012.

In addition to research, this project is intended to provide training opportunities for students and to help build/maintain lasting collaborative relationships with universities, other INL researchers, and the Shoshone Bannock Tribes. In FY 2011 a PhD candidate from Texas A&M University and the Center for the Study of the First Americans specializing in geoarchaeology returned as a primary contributor to this project. In FY 2012, the INL CRM Office will host Texas A&M researchers and students during an archaeological field school that will benefit the ongoing study. Other Section 110 activities focused on one type of archaeological remnant from early 20th century activities and gathering, accessioning, and organizing INL archival data, and maintaining CRM project files.

6.2 Early 20th Century Ethnic Influences

Scattered across the INL and found in association with ca. 1908 canals and a ca.1900 railroad bed are small beehive shaped rock structures. At first, INL archaeologists believed they were explosive storage igloos, due to the plethora of explosives cans scattered around them. Archaeologists later determined through the use of empirical data and deductive reasoning, that these structures were instead ovens constructed by Italian immigrant laborers in the early twentieth century and were used to make bread in isolated construction camps located in this high desert region. Each bread oven represents a transitory and temporary existence and illustrates the importance of bread to the Italian culture and workers.

Italian laborers associated with the INL ovens worked for a Utah-based construction company. This company, known as Corey Brothers Construction, was awarded many early twentieth century railroad and canal construction contracts throughout the Intermountain and Pacific Northwest regions. Bread ovens have been found in association with other Corey Brothers' projects in Canada, Colorado, Nevada, Washington and Utah and display features similar to the ovens found on the INL.



Figure 15. Early 1900s Italian bread oven on INL.

6.3 INL Archive Center and CRM Project Files

As a Federal agency, INL is mandated by Federal Regulation 36 CFR § 1220.10 to establish and maintain a records management program that complies with National Archives and Records Administration (NARA) guidelines and disposition schedules. Primary responsibility of the records management program, and for the retention and preservation of official DOE-ID records related to INL, is provided for by support service organizations. Many active records with significant historic value are maintained at INL facilities and include such materials as photographic negatives and prints, architectural and engineering drawings, extensive library holdings that include technical and nontechnical reports and documents, oral histories, and other historical INL data.

In 2012, several tasks were begun, completed, or are ongoing. They include:

- Continuation of selection, acquisition and accession of architectural and engineering drawings with relevance to ETR, ICPP, MFC, and TRA. Several of these items were rough processed while a significant number were processed completely.
- Completion of processing on the Leroy Lewis Collection.
- Completion of a first draft of a formal INL Archives and Special Collections Management Plan
- Completion of working drafts of a processing manual and finding aids.

The management plan and processing manual will act as tools for the archivist and future archives staff to identify, manage, and maintain those items which hold important and irreplaceable information regarding INL history. The finding aids will act as tools for researchers in utilization of the archives.

Collections of information related to INL cultural resources are also significant and provide an invaluable resource to INL project and program managers and others. Some efforts in the Cultural Resource Project Files are ongoing, such as data entry of archaeological and historic architectural information collected from cultural resources in the field and facility areas, updates to geographical information system (GIS) coverages, and quality reviews of information already entered into the INL CRMO Data Management System.

6.4 Oral History Project

The INL CRM Oral History project remains a priority of the INL Archives and Special collections. The INL archivist continues to work with the CRMO and INL employees to identify potential oral history subjects. In addition, collaborative information and brainstorming sessions have been initiated by the archivist between Records Management, the Technical Library, and the communications group to identify potential digital storage and platforms for appropriate dissemination of oral histories. Also in 2012, a DOE-ID funded chronicle of INL's activities from 2000 to 2010 was completed. Entitled, "Transformed: A Recent History of the Idaho National Laboratory, 2000-2010", this publication is intended as a follow on to "Proving the Principle: A History of the Idaho National Engineering and Environmental Laboratory, 1949-1999". Both documents are available on the INL website.

7. STAKEHOLDER AND PUBLIC OUTREACH

As a federal agency, DOE-ID is required by a number of statutes, primarily the NHPA, to manage INL cultural resources in a spirit of stewardship for the citizens of the United States and to provide those citizens with information about their cultural resources and opportunities to become aware of and involved in their preservation and management. Systematic planning for public participation in INL cultural resource management helps to ensure that such information sharing and participation takes place routinely and productively and that public interests regarding resource preservation and interpretation are considered as the Laboratory executes its primary missions. The list of potential stakeholders is as varied as the resources themselves, including such diverse groups as local historical societies, museum associations, Oregon Trail enthusiasts, INL employees and retirees, historical and scientific researchers, Native American tribes, and the general public.

During FY 2011, communication strategies were implemented through a variety of tours, presentations, publications, educational events and participation in local and regional archaeological and historic preservation activities. All are briefly outlined in the following sections.

7.1 Tours

Tours have proven to be one of the most effective and enjoyable public outreach tools for INL CRMO staff and participants alike. During FY 2011, tours to select INL cultural resource locations were provided. As in the past, the highlight was the annual public tour conducted in mid-May as a part of Idaho Archaeology and Historic Preservation Month activities. Following the public tour, INL CRM professionals determined that cumulative impacts were occurring to the archaeological sites selected for educational tours. The impacts are due, in large part, to the fact that the same sites have been visited repeatedly each year over several years' time. To reduce impacts and allow for recovery of the areas, it was determined that tours would be halted to those areas until further notice. In lieu of providing tours, CRM staff committed to offer presentations on INL history, prehistory, and cultural resource management.



Figure 16. INL tour participants contemplate a ca. 1900 railroad structure.

7.2 Presentations and Publications

Groups requesting and receiving presentations in FY 2011 were as diverse as those requesting tours. INL CRMO staff visited schools, community groups, and other INL organizations as part of an ongoing program to share information about INL cultural resource management activities as well as knowledge about the cultural resources themselves. During the fiscal year, numerous members of the public were reached through these efforts, including groups ranging from middle school students in Idaho Falls to INL employees representing the Wildland Fire Committee. In October 2011, a presentation, "Human Riverine and Lacustrine Adaptations: 2010 INL Archaeological Testing Project" (INL/CON-10-19494) was given at the Great Basin Anthropological Conference held in Logan, Utah. Additional research on the topic was presented in April at the Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP) held in Charleston, South Carolina. Internal presentations on Archaeological

Resource Protection Act requirements were also provided to fieldworkers in several diverse organizations. Presentation topics included INL archaeology, history, resource management, careers in these disciplines, and safety in the field.

7.3 Professional Associations

INL CRMO staff members individually conduct a variety of professional activities and serve in numerous capacities in local, regional, and national organizations. For example, individual memberships are maintained in various professional groups such as the Register of Professional Archaeologists, Society for American Archaeology, the Society for Historical Archaeology, the Society for Industrial Archaeology, the Idaho State Historical Society, the Idaho Professional Archaeological Council, the Idaho Archaeological Society, the Idaho Falls Historic Preservation Commission, the Oregon-California Trails Association, and Phi Alpha Theta Chi-Rho Chapter.

7.4 Preservation Partnerships

The INL CRMO is involved in a variety of productive partnerships with federal and state agencies, community organizations, and universities. CRMO staff members often volunteer their time to support research and public outreach activities. The reciprocal relationships developed through these efforts enhance INL CRMO abilities and help to maintain a network of professional contacts of value to the conduct of CRM on the INL. During FY 2011, INL CRMO staff continued their long-standing commitment to enhanced K-12 education through participation in local “Career Days” events and informational presentations to school groups. For the second year in a row, to fulfill DOE-ID’s NHPA Section 110 responsibility in FY 2011, CRMO staff also engaged in a collaborative research project with Texas A&M University. A PhD candidate in archaeology participated in the refinement of a research design that is being used to guide identification of Paleo-Indian sites on INL through the excavation of select locations.

An ongoing partnership exists between INL, the Idaho, Oregon, and Washington SHPOs, National Park Service, University of Oregon and various agencies and individual professionals in each state. Called the Pacific Northwest Archaeological Fieldschool, a CRM staff member serves on the executive committee to maintain and enhance the partnership. In addition, the DOE-HQ History Department selected five cultural resource management professionals from across the complex to serve as advisors to that program and an INL CRM staff member provides that service.

Portions of undeveloped range lands within the INL are under joint administration by DOE-ID and the Bureau of Land Management (i.e. grazing areas, select gravel pits) and the Idaho Transportation Dept maintains rights-of-way along public roads that pass through the INL site. INL CRM staff members have established productive relationships with cultural resource managers and other personnel in these two organizations (BLM and ITD) and often share information for resource identification, assessment, and protection.

8. NATIVE AMERICAN PARTICIPATION

As a federal agency, DOE-ID recognizes its trust responsibility to the Shoshone-Bannock Tribes and in the spirit of that responsibility has entered into an Agreement in Principle (AIP) with them (DOE-ID 2007, 2011a). The AIP defines working relationships between the Shoshone-Bannock Tribes and DOE-ID and fosters a mutual understanding and commitment to engender confidence that activities being conducted at the INL protect the health, safety, and environment, including cultural resources of importance to the Tribes. To aid with implementing cultural resource aspects of the AIP, a Cultural Resources Working Group (CRWG) comprised of representatives from the Shoshone-Bannock HeTO, DOE-ID, and the INL CRMO was established in 1993. It was the first of its kind within the DOE complex and its regular CRWG meetings enable issues and opportunities to be addressed in an environment of mutual respect and learning. Tribal input is sought for new and ongoing projects and a standing invitation is extended to comment on, visit, observe, and/or assist in INL CRMO field activities. The holistic view of cultural resources and cooperative spirit encouraged in this group are designed to enhance understanding and appreciation of all types of cultural resources, both within the INL community and the Tribes. For more detail on the relationship between the INL and the Tribes, and detailed working procedures, see Appendix B of the INL CRMP (DOE-ID 2011a).

During FY 2011 the CRMO staff organized a tour for tribal representatives to Aviator's Cave and participated in all scheduled CRWG meetings. HeTO staff were routinely invited into the field to discuss projects, view survey findings, monitor sensitive cultural resources, participate in fieldwork (surveys and test excavations), and assist with the identification and potential impact to cultural resources of importance to them. The assistance provided by tribal partners was important in meeting project milestones.



Figure 17. Tribal and INL archaeologists conducting screening at a project test excavation.

9. NHPA SECTION 106 PROJECT REVIEWS

The INL is an active facility where thousands of work orders for projects ranging from lawn care to new facility construction are processed each year. Detailed procedures are in place to evaluate the environmental consequences of all activities, large or small. Under company procedures and processes outlined in the INL CRMP, cultural resource reviews are an integral part of the environmental review process and are completed to assess impacts to all cultural resources and to develop recommendations for protection and/or mitigation, when necessary. The goal of the cultural resource review is to determine if the proposed project will affect properties that are eligible for the National Register, if they are Category 1, 2, 3, or Signature properties based on their relative historic importance, and determine appropriate levels of standard mitigation and/or consultation necessary to establish new mitigation measures. As outlined in the INL CRMP, the process used to make this determination includes archive and record searches and survey.

A review is prompted whenever a project is proposed that meets one or more of the following basic thresholds:

- Ground disturbance outside the boundaries of fenced INL facility areas or more than 50 feet from existing buildings or landscaped areas in unfenced areas
- Ground disturbance within or around the former Power Burst Facility (PBF), now designated as the Critical Infrastructure Test Range Complex (CITRC)
- Activities within known or suspected zones of Native American sensitivity and/or high archaeological resource density
- Demolition, major structural or landscape modification, permanent closure of extant buildings and structures, and/or removal of original equipment, features, or records
- Activities that may affect the Experimental Breeder Reactor I National Historic Landmark building and grounds

FY 2011 reviews for projects affecting historic architectural resources are summarized in Section 9.1. Non-architectural project reviews are presented in Section 9.2.

9.1 Historic Architectural Reviews

The INL contains various property types that are elements of, or have features that contribute to, the overall landscape and understanding of the INL's recent World War II and pioneering nuclear history (1942 - 1970). In contrast to the near single focus on mitigating DD&D work conducted in recent years, in FY 2011 CRMO staff were also involved in conducting architectural reviews for the rehabilitation of existing structures for reuse, installation of new equipment and/or removal of old equipment. The primary focus of FY 2011 project reviews was the removal or demolition of historic properties and consolidation of INL facilities to three campus areas. Due to the nature of the cleanup work and the fact that INL remains an active scientific and technical facility; such activities have impacted, or will impact, historic INL architectural properties (i.e., buildings, structures, equipment, original program and project data).

Twenty-two project reviews were conducted in FY 2011 for proposed activities, including two CPP-601 and CPP-602, that were subject to a previous review, formal consultation, and mitigation. Three additional historic properties, TRA-610, TRA-629, and TRA-669, were also scheduled for demolition and photographs were completed as required by Programmatic Agreement (PA), following strategies outlined in the INL CRMP. Five properties (TRA-631, TAN-664, TRA-615, TAN-671, and TAN-672) were determined to be exempt from cultural resource review and the remaining twelve properties are ineligible to the National Register of Historic Places (Table 1).

Demolition of EBR-II demolition continued from FY 2010. To mitigate the adverse impact to this historic INL property, mitigation products delivered in FY 2011 included a HAER report that has been sent to the Library of Congress for accessioning into its permanent collections and installation of an EBR-II educational interactive display at EBR I.

Table 1. Historic architectural project reviews completed in FY 2011.

Project Number	Project Name	Property Category	Review Status
11-01	TRA-610 demolition	Category 3	PA-t photos completed; TRA HAER completed
11-02	CPP-601 demolition	Signature	PA-ICPP HAER completedt
11-03	CPP-602 demolition	Category 2	PA – ICPP HAER completed
11-04	CPP-654demolition	NA	Not eligible
11-05	CPP-1635 demolition	NA	Not eligible
11-06	CPP-1637 demolition	NA	Not eligible
11-07	CPP-1638	NA	Not eligible
11-08	CPP-1649 demolition	NA	Not eligible
11-09	CPP-1653 demolition	NA	Not eligible
11-10	CPP-1656 demolition	NA	Not eligible
11-11	MFC-750A & B excess		Not eligible
11-12	CFA-614 inactivation	NA	Not eligible
11-13	CFA-615 inactivation	-NA	Not eligible
11-14	TRA-629 demolition	Category 3	PA-photos completed; TRA HAER completed
11-15	TRA-631 demolition	Exempt	PA-exempt property
11-16	TRA-669 demolition	Category 3	PA-photos completed; TRA HAER completed
11-17	TRA-673 demolition	NA	Not eligible
11-18	TRA-675 demolition	NA	Not eligible
11-19	TAN-664 demolition	Exempt	PA-exempt property
11-20	TRA-615 demolition	Exempt	PA-exempt property
11-21	TAN-671 trailer removal	Exempt	PA-exempt property
11-22	TAN-672 trailer removal	Exempt	PA-exempt property

9.2 Other Cultural Resource Reviews

In FY 2011, 17 projects involving ground disturbance were screened for potential impacts to non-architectural cultural resources (Table 2). Resources of concern in these reviews were archaeological resources from the prehistoric and historic periods, as well as less tangible Native American and stakeholder resources and values. All projects in FY 2011 were located on INL lands at various locations across the desert site. INL CRM project file reviews were completed for all of the projects listed in Table 2 and in many cases (53 %) these reviews demonstrated that the proposed activities were located within areas that had already been intensively surveyed for archaeological resources. In all of these cases, the proposed projects could be completed with no impacts to known resources of National Register significance either because the original surveys resulted in no resources recorded or because identified resources were located outside the areas of potential effect for the work. Limited field surveys were often necessary to confirm the location of previously recorded resources in relation to project activities. In three cases, archive searches were the basis for the transfer of general information on archaeological sensitivity and long term recommendations for resource protection to support large-scale siting studies or future projects. In one case, the proposed project activities involved archaeological excavations (as described in Section 6) that were determined to be beneficial in the ongoing study of INL prehistory.

Field investigations were necessary for approximately 53 % of FY 2011 projects. In two field projects, INL CRM project files provided important information to revisit previously recorded archaeological sites and assess the impacts of fire-fighting efforts associated with several range fires of unprecedented intensity and extent. Two field surveys were conducted by subcontracted cultural resource investigators under the provisions of permits overseen by the INL CRM Office. Approximately 358 acres were intensively examined during all FY 2011 project surveys and 28 new archaeological resources were identified and recommended for avoidance or other protective measures. Cumulatively, the total number of acres surveyed for archaeological resources on the INL Site increased to 55,430 with the addition of these surveys (approximately 10% of the 890 square mile laboratory) and the total number of resources identified rose to 2,727.

Small scale test excavations were associated with one FY 2011 project to confirm that sensitive archaeological deposits were not present within the outer extents of seven prehistoric archaeological sites located within the preferred alignment of a proposed new multipurpose haul road (DOE-ID 2010). Tribal representatives from the HeTO assisted INL CRM staff in these investigations. No subsurface cultural materials were identified within the areas of potential effect for road construction, and consultation with the Idaho SHPO led to a finding of no adverse effects for this Section 106 review.

The results of project-specific INL CRM archaeological surveys and other activities are documented in a number of ways per the guidelines of the INL CRMP. Recommendations tailored to specific projects and any archaeological resources that may require consideration are delivered in official e-mail notes that become part of the project's National Environmental Policy Act-driven Environmental Checklist and permanent record. For larger projects, external technical reports are often prepared to synthesize archaeological information and recommendations, including one FY 2011 report, "Cultural Resource Investigations for Potential Naval Reactors Spent Fuel Handling and Examination Facilities at the Idaho National Laboratory (INL/EXT-10-20650, June 2011). Standard stipulations requiring work to stop in the event of any unanticipated discovery of cultural materials were included with all recommendations and reports and no unanticipated finds were reported in FY 2011.

Shoshone-Bannock tribal representatives received summary reporting of all archive searches completed in FY 2011, visited some of the project areas, and provided valuable assistance in surveys, small scale test excavations, and project and site monitoring. No special tribal concerns were voiced for any of the FY 2011 INL CRM investigations or project recommendations.

Table 2. Non-architectural project reviews completed in FY 2011.

Project #	Project Name	INL CRMO Activities	Acres Surveyed	Cultural Resources Identified
BEA-11-01:	Infrastructure Recapitalization and New Expended Core Facilities at NRF	Archaeological survey, site monitoring, and reporting	15	3 isolates 1 site
BEA-11-02:	Rocky Mountain Power Pole Replacement	Cultural resource permit oversight and monitoring of ground disturbance	10	1 isolate 2 sites
BEA-11-03:	Wireless Test Bed Projects	Environmental Checklist review and limited field survey	1	None
BEA-11-04:	Multipurpose Haul Road	Small scale test excavations in project APE and construction monitoring	None	7 previously recorded sites
BEA-11-05:	Quantifiable Bat Count Study (Stoller)	Environmental Checklist review	None	None
BEA-11-06:	Wind EA	Review of draft documentation	None	None
BEA-11-07:	New Targets at CFA Firing Range	Environmental Checklist review	None	None
BEA-11-08:	Look Ahead Sensor Testing	Environmental Checklist review	None	None
BEA-11-09:	Traffic Signs	Environmental Checklist review	None	None
BEA-11-10:	USGS Wells	Environmental Checklist review	None	None
BEA-11-11:	Mountain States Transmission Intertie	Cultural resource permit oversight and feedback to BLM on various aspects of project Environmental Impact Statement under preparation	292 acres	7 isolates 1 site
BEA-11-12:	Pioneer Excavations	Archaeological research excavations in support of Section 110 goals	None	None
BEA-11-13:	Small CWI projects	Environmental Checklist review	None	None
BEA-11-14:	Electrical Grid Test Facility Siting	Feedback to initial facility siting including field tour	None	None
BEA-11-15:	Fire Surveys (Jefferson Fire, Middle Butte Fire, T17 Fire)	Archaeological survey and site monitoring	40	6 isolates 7 sites
BEA-11-16:	Motion Cameras at	Environmental	None	None

Project #	Project Name	INL CRMO Activities	Acres Surveyed	Cultural Resources Identified
	MFC	Checklist review		
BEA-11-17:	Small CITRC projects	Environmental Checklist review and monitoring of ground disturbance	None	None

10. PROGRAMMATIC AND PROJECT MONITORING

A detailed description of the INL CRMO monitoring program is located in Appendix L of the INL CRMP (DOE-ID 2011a) and a more detailed account of FY 2011 activities can be found in the INL Cultural Resource Monitoring Report (DOE-ID 2011b). Monitoring enables the INL CRMO to document if the integrity of known resources is being compromised by natural processes, unauthorized activities, or inadvertently by INL projects. By identifying impacts and impact levels and types to cultural resources in this manner, actions to avert further deterioration can be initiated and federal stewardship responsibilities fulfilled.

Specific cultural resources are chosen for monitoring based on INL CRM Office priorities as well as feedback from DOE-ID, the Shoshone-Bannock Tribes Heritage Tribal Office (HeTO), and INL stakeholders. The INL CRM archives, which include documentation of nearly 3,000 archaeological resources and nearly 300 historic buildings and other structures, are also consulted for appropriate candidates for yearly monitoring. Both DOE-ID and the Shoshone-Bannock Tribes are often directly involved in fieldwork during the monitoring activities and INL project managers and other stakeholders, such as the Idaho State Historic Preservation Office (SHPO), also participate occasionally. Certain resources, like Middle Butte, Prickly, and Aviators Caves, sensitive localities inside the Critical Infrastructure Test Range Complex, and the Experimental Breeder Reactor-I National Historic Landmark, are monitored annually. Others, such as historic homesteads and some prehistoric archaeological sites may also be visited routinely because of their location in highly visible and/or accessible areas where trespassing has been documented in the past. Each year INL CRM staff also conducts surveillance of resources in a wide variety of settings to address ongoing research interests and the overall focus of INL construction and project activities.

In an effort to address recurring Type 2 impacts and the single Type 3 impact documented in FY 2011, INL CRM staff continued to develop a working relationship with U.S. federal agents experienced in enforcing the Archaeological Resource Protection Act (ARPA) toward successfully prosecuting individuals who have violated the law. Discussions between the agents and INL CRM staff resulted in the following ideas to pursue for mitigation:

- Internal notifications from DOE as a reminder to employees in regard to ARPA and other preservation laws
- INL procedural disciplinary actions
- Installation of remote surveillance equipment to document unauthorized visitors and activities

It is anticipated that interaction and cooperation between the federal agents, DOE-ID security, and the INL CRM Office will be ongoing through FY 2012 and beyond, leading to more effective protections for sensitive INL cultural resources.

In late May 2011, a representative from the Idaho Fish and Wildlife Service contacted DOE-ID and requested that they cancel all cave entry citing concerns regarding the potential spread of White Nose Syndrome (WNS). WNS is a disease caused by a non-native, cold-loving fungus found in the caves of affected regions and is devastating bat populations. Although how the disease is transmitted is not yet known and no cases of WNS have been substantiated west of Oklahoma, it appears that the disease is moving westward. Upon receipt of the IFWS information, DOE-ID placed a moratorium on all INL cave entries until an entry procedure could be established. As a result of the moratorium, select INL caves were monitored from the exterior only.

In FY 2011, INL CRM staff conducted official surveillance of forty-seven individual cultural resources including: two locations with Native American human remains, one of which is a cave, three

additional caves, twenty-nine prehistoric archaeological sites, six historical archaeological sites, five historic trails, the EBR I National Historic Landmark, and the interpretive panels located at the Highway 20/26 rest stop. A handful of resources were visited on multiple occasions. Forms that document individual observations and recommendations are included in Appendix A of the FY 2011 Monitoring Report (DOE-ID 2011b).



Figure 18. Impacts to INL historic trail from blading and heavy and frequent vehicle use.

10.1 Project Monitoring

Project-specific cultural resources monitoring is conducted at INL to meet three distinct purposes. In one situation, previously recorded cultural resources may be revisited to assess current conditions and assist in the development of recommendations for avoiding impact during future project activities. In FY 2011, 12 archaeological resources located in the vicinity of the Naval Reactors Facility were revisited and assessed for this purpose. In a second type of project monitoring in FY 2011, INL projects were audited for compliance with cultural resource recommendations made during the INL environmental review process. In this context, the NRF Sewage Lagoon construction project was monitored in FY 2011. In a third type of project monitoring, ground disturbance associated with INL project activities in archaeologically sensitive areas was directly observed by INL CRM staff. In FY 2011, three INL projects in proximity to sensitive resources were monitored. Detailed results of all project monitoring appear in the FY 2011 Monitoring Report (DOE-ID 2011b).

11. FISCAL YEAR 2012 ACTIVITIES

At the time of this writing, FY 2012 work well underway and many tasks have been completed. Listed below are specific FY 2012 objectives and tasks organized in accordance with the broad goals outlined in Section 5.

Goal 1: Identify and Manage INL Cultural Resources

- Task 1. Conduct two interviews of former INL employees to expand the INL Oral History archive.
- Task 2. Continue archaeological investigations associated with the multi-year human riverine/lacustrine adaptations project.
- Task 3. Incorporate cultural resource information from FY 2011 site forms into INL cultural resources databases, project files, and (GIS) coverages.
- Task 4. Reconcile locations and designations for known INL caves and update or complete site inventory forms.
- Task 5. Support development of integrated iMAP application to access INL cultural resource information.
- Task 6. Update INL geographical information system files and server and continue quality control activities including resolution with Archaeology database.
- Task 7. Perform project-related cultural resource reviews and tasks (i.e., survey, test excavations, reports).
- Task 8. Continue inventory of remnants of post-World War II ordnance testing.

Goal 2: Evaluate National Register Eligibility of INL Properties

- Task 1. Continue ongoing refinement of INL historic contexts and research designs based on new information and changes in research tools and approaches.
- Task 2. Evaluate archaeological sites tested for the human riverine/lacustrine adaptations project using NRHP criteria.
- Task 3. Complete NRHP evaluation and assessment of effects to cultural resources in INL project areas and support consultation with SHPO and Tribes.

Goal 3: Monitor the Condition of INL Cultural Resources

- Task 1. Visit, assess condition, and complete monitoring forms for Middle Butte, Aviator's, and Prickly Caves (without entry, unless surface evidence indicates unauthorized visitation), the WERF burial (10-BT-2046), EBR-I and CFA World War II buildings (CF-606, CF-607, CF-613, and CF-632) and implement protective actions as necessary.
- Task 2. Maintain monitoring files and database.
- Task 3. Identify project areas to monitor for potential impacts to INL cultural resources.
- Task 4. Monitor ground disturbing activities at CITRC to ensure any additional finds of human remains are handled appropriately.

Goal 4: Protect INL Cultural Resources

- Task 1. Resubmit INL Archive Center appropriations request.
- Task 2. Conduct annual fieldworker cultural resource awareness training and seek additional opportunities to remind INL workers of responsibilities for protecting INL cultural resources.
- Task 3. Continue to work with DOE-ID Physical Security Officer and Federal and Tribal Fish and Wildlife Service agents.
- Task 4. Oversee DOE-ID permits for cultural resource investigations on INL lands.
- Task 5. Participate in INL communities and committees (i.e., Landuse committee, Wildland fire committee, cave entry permit review committee).

Task 6. Participate in reviews/revisions of INL environmental procedures and periodic audits (i.e., ISO 14001) to ensure cultural resource representation.

Goal 5: INL Curation

Task 1. Organize and participate in a visit to the Idaho Museum of Natural History to assess condition and security of INL collections and plan future accessioning and maintenance tasks.

Task 2. Oversee curation-related activities to be performed by the Idaho Museum of Natural History.

Task 3. Coordinate analyses of existing INL collections to further INL research goals.

Task 4. Input legacy site forms into the Archaeology database and continue ongoing quality control, including coordination with GIS coverage.

Task 5. Ensure stability and security of artifacts in interim INL storage and coordinate transfer to permanent collections, as feasible.

Goal 6: Stakeholder Involvement/Public Outreach

Task 1. Participate in at least four educational events (i.e., Idaho and National Archaeology and Historic Preservation presentation, Career Days).

Task 2. Present two peer-reviewed papers at professional meetings or conferences.

Task 3. Facilitate a Texas A&M University archaeological fieldschool at INL through the Center for the Study of First Americans.

Task 4. Mentor summer interns (Aviator's Cave perishables study, study of plants potentially associated with human habitation of caves).

Task 5. Host Idaho SHPO visit to INL.

Goal 7: Interact with Native Americans

Task 1. As requested by DOE-ID, prepare and present the annual report of FY2011 INL cultural resource management activities to the Tribal Business Council.

Task 2. Facilitate and participate in regular Cultural Resource Working Group meetings.

Task 3. Facilitate and encourage HeTO participation in INL CRM activities.

Goal 8: Conduct Work Safely

Task 1. Conform to ISMS requirements.

Task 2. Inspect and maintain equipment regularly.

Task 3. Comply with Archaeology Laboratory Instruction.

Goal 9: Maintain Professional Qualifications and Relationships

Task 1. INL archivist will continue training and studying to obtain professional archivist certification.

Task 2. INL archivist will open dialogue with regional, national, and international colleagues.

Task 3. Meet regularly with Gonzales-Stoller on issues of mutual interest.

Task 4. Meet with the Idaho SHPO to present report of activities and to discuss upcoming activities.

Task 5. Cooperate with cultural resource managers from neighboring federal agencies on activities of mutual interest.

Goal 10: Activities Reports/Plans

Task 1. Complete a report of annual activities.

Task 2. Complete annual Department of Interior (DOI) questionnaire (Contract Data Requirements List [CDRL] F.45).

Task 3. Complete annual monitoring report (CDRL F. 46).

Task 4. Complete all project-related reports.

Task 5. Draft cave entry plan for cultural resource monitoring activities.

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