



# PARTNERS IN PRESERVATION

Cultural Resources News from the Department of Energy

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Office of History and Heritage Resources

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## In This Issue

- Award-Winning Preservation: V-Site at Los Alamos
- Saving the V-Site: The Unsung Heroes of Environmental Management
- Executive Order Heritage Resources Study
- DOE/ACHP Partnership
- K-25 Consultation at Oak Ridge
- Manhattan Project Sites Special Resources Study Update
- Energy Communities Alliance Forms Manhattan Project Task Force
- Protection of Cultural Resources: Guidance, Coordination, and Assistance Initiatives of the Office of Health, Safety and Security
- Want to Receive *Partners in Preservation*?

## Award-Winning Preservation: V-Site at Los Alamos

On April 13, 2007, the work of many people over many years was recognized when the State of New Mexico Cultural Properties Review Committee voted to bestow a 2007 Heritage Preservation Award for Architectural Heritage for the "the exemplary restoration of the V-Site, which also challenged and expanded the boundaries of preservation." At a May 1 award ceremony in Santa Fe, key



veterans of the project received certificates. Recipients included John Isaacson and Ellen McGehee of Los Alamos National Laboratory, Cindy Kelly of the Atomic Heritage Foundation, the architectural firm Crocker Ltd., and the contracting firm J. B. Henderson, among others. The DOE Federal Preservation Officer, who was unable to attend, also received a certificate.

The V-Site, a Manhattan Project "Signature Facility," is where key components of the Trinity device were assembled. The Trinity Test at Alamogordo on July 16, 1945, successfully demonstrated the plutonium implosion method and gave birth to the atomic age.

Further recognition of V-Site preservation came when Kak Slick, New Mexico's State Historic Preservation Officer, gave John Fowler, Executive Director of the President's Advisory Council on Historic Preservation (ACHP), an historic preservation award for the ACHP's role in helping preserve V-Site at the ACHP's May 2007 business meeting in Washington, D.C. (See photo above right.) Slick also congratulated DOE and the Atomic Heritage Foundation for their contributions to preserving this important piece of New Mexico's heritage.

After receiving the award from Kak Slick, John Fowler remarked that "the ACHP has worked in partnership with DOE for many years to help them identify and preserve sites of their Manhattan Project and early Cold War heritage, and their restoration of this important site for future generations shows how seriously they take this responsibility. As evidence of this ongoing effort, I would also like to recognize the formal partnership our Chairman, John Nau III, has established with Deputy Secretary Clay Sell to further similar heritage tourism initiatives like this."

## In This Issue continued

- SLAC Aids Preservation of Henry VIII's Warship
- Mound Museum Association Presents History Forums
- SRS History: Four Mile High School
- Battlefield of the Cold War
- Featured Photos: House Destroyed by Annie Nuclear Weapons Test

## Saving the V-Site: The Unsung Heroes of Environmental Management

By late spring 1997, the bulldozers were ready to roll. DOE's Office of Environmental Management (EM) had a contract in place to D&D all of the structures in the V-Site complex at Los Alamos, all the required NHPA work had been done, and, as far as EM was concerned, the project was free to proceed. But EM was beginning to hear some contrary voices questioning the wisdom of taking down some of the remaining few structures at Los Alamos dating from the World War II Manhattan Project.

Determined to find out what the fuss was about, Tom Longo in EM's headquarters office in Germantown that managed DOE sites in the southwest, including Los Alamos, made an appointment to meet with Skip Gosling and Terry Fehner of DOE's History Division, which seemed to be the locus of much

of the talk about V-Site. In a two-hour conversation, Gosling and Fehner, who were in the early stages of their efforts to upgrade DOE's historic preservation program, discussed with Longo the historic significance of V-Site and its place among the properties later officially designated Manhattan Project "Signature Facilities." Longo, with more than a passing interest in the Department's history, agreed to talk it over with his boss and see if it was too late to reconsider the scheduled EM project. He asked Gosling and Fehner to provide a brief explanation of the site's historical significance to support his case. The result was a June 19 memorandum to Ralph G. Lightner, Director of EM's Office of Southwestern Area Programs, recommending that "the planned demolition of two historic structures ... be delayed pending a review of possible options that would include incorporating them into the interpretation ... of the DOE's and predecessor agencies' mission of designing and building the Nation's nuclear arsenal." The following day, Lightner, despite reservations expressed by his boss, sent a memorandum to the Assistant Manager for Environment/Project Management at the Albuquerque Operations Office requesting that the work be delayed until an evaluation of the preservation options could be completed. "We are fully aware," Lightner wrote, "that fulfilling this request will mean some additional surveillance and maintenance costs and a loss of some fiscal year 1997 performance measures ..., but we believe that the potential benefits outweigh such consequences."



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Ralph Lightner has since retired. Tom Longo continues to support DOE's cleanup mission at Los Alamos working with the National Nuclear Security Administration.

Two photos at right (previous page) show V-Site structures before and after restoration efforts.

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## Executive Order Heritage Resources Survey

The Office of History and Heritage Resources (OHHR) in partnership with the President's Advisory Council on Historic Preservation (ACHP) has initiated a survey of DOE's heritage tourism assets. OHHR is responsible for coordinating the Department's implementation of Executive Order 13287, *Preserve America*. Section 3 of EO 13287 directs Federal agencies to identify and appropriately manage their historic properties and to seek partnership opportunities to promote the use of these properties for heritage tourism in a manner consistent with long-term preservation and local economic development strategies.



Deputy Secretary Clay Sell (right) strongly supports EO 13287. He and Chairman John Nau III (bottom right) of the ACHP, which oversees implementation of the EO, entered into a formal interagency agreement in 2006 whereby the ACHP will assist OHHR in conducting a heritage tourism assessment of the Department. The Deputy Secretary has directed OHHR to ensure that DOE continues to rank in the top tier of Federal agencies in implementing EO 13287.



Consistent with the Deputy Secretary's direction, OHHR and the ACHP have asked DOE cultural resources officials in the field for assistance in compiling an inventory of DOE's heritage tourism assets. This inventory of "Executive Order Heritage Resources" will be an important element of the Department's next required Executive Order 13287 report due to the ACHP on September 30, 2008. In addition, OHHR will use this information to develop a complex-wide heritage tourism web site.

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## DOE/ACHP Partnership

Since Deputy Secretary Clay Sell and ACHP Chairman John Nau III entered into a formal interagency agreement to develop a heritage tourism evaluation of the Department of Energy in 2006, the ACHP's Tom McCulloch has increased his already high level of participation in initiatives that are the responsibility of the Office of History and Heritage Resources. Tom continues to consult with the FPO on strategies for the Department's Manhattan Project

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“Signature Facilities” and to represent the ACHP at consultations. In addition, he (along with David Ucko of Museums+more) helped design the “Executive Order Heritage Resources” survey and has met, among others, with senior staff at Richland Operations (Hanford) regarding heritage tourism strategies. Tom’s regulatory expertise and long-standing interest in DOE’s preservation efforts, particularly in regard to evaluating the heritage tourism potential of Manhattan Project and Cold War properties, have distinctly benefited DOE’s cultural resources program.

## K-25 Consultation at Oak Ridge

On April 3, 2007, the most recent in a series of consultations involving the Manhattan Project-era K-25 gaseous diffusion plant took place in Oak Ridge, Tennessee. The purpose was to review progress made in fulfilling the Memorandum of Agreement (MOA) ratified by the DOE FPO and other signatory parties in

March 2005. The MOA states that the north end of the “U”-shaped K-25 building, with a footprint of approximately 135,000 square feet, will be retained. Original equipment in a part of the north end, per the MOA, would remain in place until November 2006 to evaluate the “feasibility and cost-effectiveness” of decontaminating the equipment for potential future interpretation. The Partnership for K-25 Preservation (PKP), a group of interested local and national stakeholders, has put forth a plan to turn that part of the north building retaining original equipment into a museum. Above right is a model of the proposed north building and museum.



At the April 3 meeting, Steve McCracken, Assistant Manager for Environmental Management for DOE’s Oak Ridge Office, said that safety issues had slowed down DOE and contractor efforts “to determine whether it’s feasible or not to do what you [PKP] want to do.” He noted the need to reset the MOA schedule from November 2006 to November 2007. The signatory parties agreed to this, and a follow-up meeting was scheduled for November 6, 2007.

In addition to the DOE FPO, signatory parties to the MOA include the DOE Oak Ridge Office, the Tennessee State Historic Preservation Officer, and the President’s Advisory Council on Historic Preservation. Concurring parties include the City of Oak Ridge and the Oak Ridge Heritage and Preservation Association.

## Manhattan Project Sites Special Resources Study Update

At the direction of Deputy Secretary Clay Sell, the Federal Preservation Officer continues to work with the National Park Service (NPS) on implementation of [Public Law 108-340](#) that



## Contributors to this Issue:

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directs the NPS, in consultation with DOE, to conduct a study for the preservation and interpretation of historic sites associated with the Manhattan Project and evaluate their potential for inclusion in the National Park System. Following eight public scoping meetings between March and June 2006 to gather comments, the NPS study team began the internal significance, suitability, and feasibility phase and is now developing preliminary alternatives for managing the resources under study. On January 8, 2007, the FPO and the Deputy FPO met with NPS officials of the Seattle office of the Pacific West region to discuss the Hanford B-reactor in terms of the study. At right are Keith Dunbar and the FPO (top) and Stephanie Toothman and David Louter (bottom).

The FPO, in addition, participated in a three-day summit involving the four NPS regions and the NPS Denver Service Center in late February 2007 and has been actively involved in planning the upcoming briefing on draft management alternatives that will take place at NPS headquarters in Washington in June. Another round of public meetings will be held in late summer. For more information on the Manhattan Project study, visit <http://www.cfo.doe.gov/me70/history/NPSweb/chronology.htm>.



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## Energy Communities Alliance Forms Manhattan Project Task Force

In late 2006, the [Energy Communities Alliance](#) (ECA), which represents counties and communities at or impacted by DOE operations, established a Manhattan Project Task Force to focus on expanding heritage tourism opportunities involving sites associated with the World War II atomic bomb program. Deputy Secretary Clay Sell directed the Federal Preservation Officer to work with the Task Force to develop partnerships in support of local heritage tourism consistent with the *Preserve America* Executive Order. The Task Force will hold a two-day meeting on August 23-24 at ECA's Washington office.

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## Protection of Cultural Resources: Guidance, Coordination, and Assistance Initiatives of the Office of Health, Safety and Security

On October 1, 2006, the Secretary of Energy created the Office of Health, Safety and Security (HSS) to integrate headquarters-level functions for health, safety, environment, and security into one unified office. HSS supports line management on implementation of health, safety, environmental protection and security programs. The environmental component that includes cultural resources protection is located in the Office of Nuclear Safety and Environment.

## Cultural Resources Links

Office of History and Heritage Resources Homepage

*Histories, chronologies, photographs, museums, and more.*

Office of History and Heritage Resources Historic Preservation *Information central for DOE historic preservation activities.*

HSS Cultural Resources Web *Regulations, policy and guidance documents, and the cultural resources forum.*

Advisory Council on Historic Preservation *Historic preservation news and information at the national level.*

The Department's requirements for the protection of cultural resources are contained in DOE O 450.1, *Environmental Protection Program*, and implemented through Environmental Management Systems (EMS). The Office of Nuclear Safety and Environment develops cultural resources protection policy and guidance and provides assistance to program and field elements to foster continuous improvement in cultural resources program implementation. Guidance and other related materials can be obtained through the HSS Web site at

<http://www.hss.energy.gov/nuclearsafety/nsea/oepa/>.

The Office of Nuclear Safety and Environment will continue to coordinate with the Cultural Resources Forum, comprised of DOE program and field representatives, to share best practices and to identify cross-cutting assistance needs and opportunities for improving cultural resources program implementation. A teleconference or in-person meeting of cultural resources representatives will be organized in 2007 to further discuss program successes and needs.

An ongoing Office of Nuclear Safety and Environment cultural resource assistance initiative is the support of efforts by DOE's National Energy Technology Laboratory to comply with Section 106 of the National Historic Preservation Act and to develop a programmatic agreement for an environmental impact statement for the Mesaba Energy Project. The Mesaba Energy Project is a commercial utility-scale next-generation integrated gasification combined cycle electric power generating demonstration facility that will be located in Hoyt Lakes, Minnesota.

In addition to these site-specific assistance efforts, the Office of Nuclear Safety and Environment took the lead for DOE in coordinating completion of the Department of Interior Federal Archeological Activities Questionnaire for fiscal year 2006. Seventeen DOE sites responded to the questionnaire. The questionnaire response will be posted on the Cultural Resources Forum Web site. The results of the questionnaire will be used by the Office of Nuclear Safety and Environment to review the implementation of cultural resources management at individual sites. The Office of Nuclear Safety and Environment also will perform a cumulative review of DOE's responses to the annual questionnaires. The results of these reviews will provide additional information on cultural resources management implementation trends and assistance opportunities at DOE sites.

Please contact Lois Thompson at [lois.thompson@hq.doe.gov](mailto:lois.thompson@hq.doe.gov) or (202) 586-9581 for interest in participating in the Cultural Resources Forum and for assistance needs.

- Contributed by Lois Thompson

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### Upcoming Meetings and Conferences:

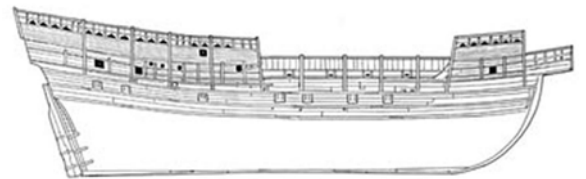
Energy Communities Alliance Historic Preservation Peer Exchange, Washington, D.C., August 23-24, 2007

K-25 Site Historic Preservation Consultation Meeting, Oak Ridge, Tennessee, November 6, 2007

Society for American Archaeology Annual Meeting, Vancouver, British Columbia, Canada, March 26-30, 2008

## SLAC Aids Preservation of Henry VIII's Warship

The Department's Stanford Linear Accelerator Center (SLAC) recently assisted in the preservation of the *Mary Rose*, a 16<sup>th</sup> century English warship. Sunk during a battle with the French in 1545 off the southern coast of England, the *Mary Rose* was salvaged from the sea in 1982 and now rests in the Mary Rose Museum in Portsmouth, England. Concern about the prevalence of sulfur and iron in the oak timbers prompted preservation researchers to send pieces of the helm to SLAC for analysis using the intense x-rays produced by the Stanford Synchrotron Radiation Laboratory. The results indicated the surviving wood contains two tons of sulfur in different forms, uniformly distributed within the 280-ton hull. Over time, sulfur can convert to sulfuric acid, which could slowly degrade the wood until its stability is lost. The *Mary Rose* also contains a great deal of iron from corroded iron bolts, nails, and other ship objects. Exposed to the oxygen in air, the iron catalyzes the oxidation of sulfur into sulfuric acid. The research suggests that long-term preservation requires reduced humidity and access to oxygen and chemical treatments to remove or stabilize the remaining iron and sulfur compounds.



At right, (top) a conservationist works on the *Mary Rose* and (bottom) drawing of a side view of the *Mary Rose*. (Images courtesy of Mary Rose Trust)

## Mound Museum Association Presents History Forums

In January 2006, the Mound Museum Association (MMA) of Miamisburg, Ohio, began sponsoring a series of monthly presentations by workers formerly employed at Mound Laboratory or at its Manhattan Project predecessor, the Dayton Project. The presentations, recounting scientific, technical, and administrative activities, as well as interpersonal experiences, have covered a broad swath of Mound's history. One speaker discussed his participation in the fabrication of the polonium/beryllium initiators for the Trinity "Gadget" and the Nagasaki atomic weapon and his co-invention and development of the radioisotopic thermoelectric generator (RTG) used to power many of NASA's space missions. Another spoke of her experiences in setting up Mound's unique all-women "Small Parts" production line characterized by its optical microscopically aided assembly (via soldering and/or welding) of high

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explosive detonator components featured in nuclear weapons produced throughout the Cold War era.

The presentations are digitally video recorded, graphically processed, and stored in a digital archive that is organized for easy retrieval. Appropriately related artifact and photographic displays are also set up for each event, which are held either at the current location of the Mound Museum, on the former Mound Facility site, or in the Community Room of the Department of Energy's Mound View Legacy Building on the periphery of the Mound site. The events are well attended, sometimes overflowing the meeting rooms that can seat about 100 attendees. The MMA's Trustees believe the events have been quite successful in implementing one of their goals of preserving and making publicly accessible reliable accounts of Mound's past accomplishments.

- Contributed by Don B. Sullenger

## SRS History: Four Mile High School

In the midst of the Cold War, the U.S. Atomic Energy Commission (AEC) issued a startling press release that would forever affect the lives of those within three South Carolina counties. On November 28, 1950, the press release announced the pending construction of a massive atomic weapons material industrial complex and relocation of about 1,500 families from portions of Aiken, Barnwell, and Allendale counties along the Savannah River. The Savannah River Plant, as it was known, came to encompass about 200,000 acres.



One of the affected towns was Dunbarton, a small farming community. In its vicinity was the Four Mile High School that served African American children throughout Barnwell County. The campus comprised four buildings including a dormitory for those students who traveled great distances. These students would often come to the school Sunday evenings and return home Friday afternoons. All eleven grades were taught at Four Mile until 1948 when the twelfth grade was added, but most students only attended the school for their last four years of instruction. According to a 1951 AEC appraisal report of the school, "though badly in need of repair, [it] is the seat of learning for over 400 colored children. It is a necessity to the community. All grades are taught." Above right is Four Mile Institute (Thomas Grove School). (Photo courtesy of S.C. Department of Archives and History)

The story of Four Mile High School begins much earlier in the spring of 1900 "when Major E. Dunbar sold ten acres of land to the Four Mile Educational Institute for 125 dollars." Twenty-three years later, Four Mile Institute was built with the assistance of the Rosenwald Fund. According to Rosenwald Fund records, the four-teacher school cost a total of \$5,600 to construct and furnish, of which \$1,100 was received from the Rosenwald Fund, \$2,000 from public funds, and \$1,500 and \$1,000 were contributed by the African



American and white communities, respectively. According to Richard Johnson, Jr., a 1947 graduate, the school was also known as the Academy and the Thomas Grove School.

The coming of the Savannah River Plant meant the end of learning at Four Mile High School when the doors closed in 1952. Unlike Ellenton in Aiken County, neither Dunbarton nor other surrounding communities were re-established elsewhere. Instead, families dispersed to other parts of Barnwell County, nearby Aiken, Augusta, Georgia, and to other regions.

Despite the distance of time and space, the 2006 Four Mile High School Reunion program notes, "the desire to reunite with friends and former school and classmates was always something hoped for." The first reunion in 1988 was a great success bringing people together from nine states, most of whom had not seen each other since the school closed 36 years before.

During the summer of 1992 at the third reunion, 270 alumni made their first trip back to the school campus in forty years. Johnson coordinated this with the permission and assistance of Savannah River Site officials. Recognizing a large Pine tree, the alumni were able to locate the school building's foundation and reminisce about their experiences at Four Mile High School.

It was also at this time that the Savannah River Archaeological Research Program (SRARP) began research efforts for a Community History Project to document the communities lost to the construction of the Plant and the lives of the people who made them. Many of those alumni present for the tour would eventually provide oral histories and artifacts that would inform the Four Mile High School section of *Memories of Home: Dunbarton and Meyers Mill Remembered*, a 1993 publication of the SRARP.

In the hearts and minds of the alumni of Four Mile High School, the building and community live on. The alumni continue to hold reunions bi-annually. At their last meeting in August 2006, they discussed their desire to have some type of memorial erected to commemorate their school and are currently investigating their options.

- Contributed by Leah Brown

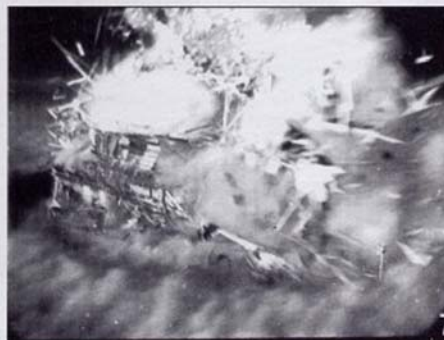
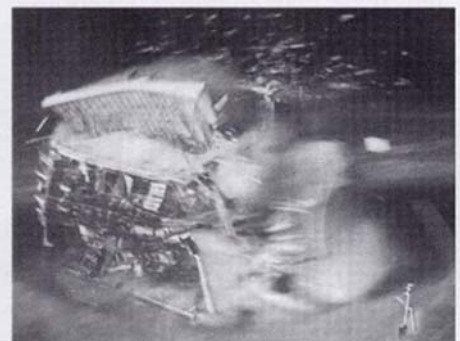
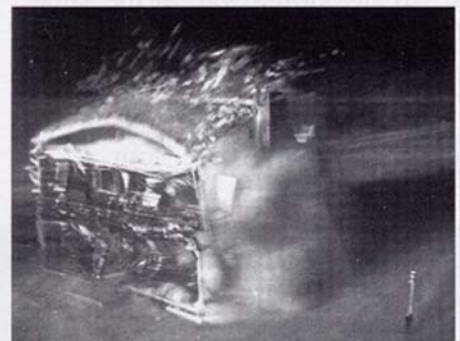
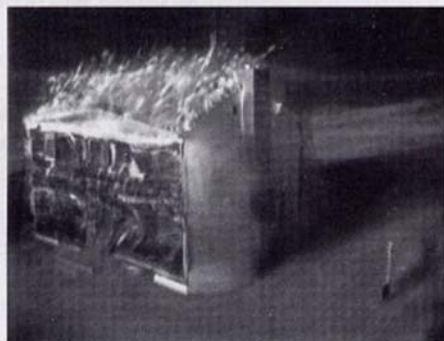
## Battlefield of the Cold War

The Office of History and Heritage Resources (OHHR) recently released *Atmospheric Nuclear Weapons Testing, 1951-1963*, Volume I of *Battlefield of the Cold War: The Nevada Test Site*, co-authored by Terrence R. Fehner and F.G. Gosling. The book was written in conjunction with the opening of the Atomic Testing Museum in Las Vegas, Nevada, and represents a unique collaboration between the museum and two headquarters offices and a field office of the Department of Energy. The Atomic Testing Museum provided the original inspiration for the project and access to museum artifacts and photographs. The



Department's National Nuclear Security Administration provided funding for researching and printing the history. The Nevada Site Office offered support and resources throughout the researching and writing. OHHR of DOE's Executive Secretariat researched and wrote the history.

## Featured Photos: House Destroyed by Annie Nuclear Weapons Test



These time-sequence photos show the destruction of a house 3,500 feet from ground zero during the March 17, 1953, Annie weapon effects test at Yucca Flat on the Nevada Test Site. The house was one of two built by the Federal Civil Defense Administration as part of Operation Doorstep to determine how a typical two-story frame house would survive a nuclear blast. The second dwelling, at 7,500 feet from ground zero, suffered extensive damage but remained standing.

The dramatic eight-photo sequence was published widely in newspapers and magazines. Shooting 24 frames per second, the time from the first to last picture was two-and-one-third seconds. The camera was completely enclosed in a two-inch lead sheath as a protection against radiation. The only source of light was that from the blast. In frame 1, the house is lighted by the blast. In frame 2, the house is on fire. In frame 3, the blast blows the fire out, and the building starts to disintegrate. Frames 4 through 8 show the complete disintegration of the house.

To view an animated sequence of the destruction of the house, please visit the [Blast](#) web page of [The Manhattan Project: An Interactive History](#) web site.

For more information about the Annie nuclear weapons test and Operation Doorstep, see the Office of History and Heritage Resources' *Atmospheric Nuclear Weapons Testing, 1951-1963*, Volume I of *Battlefield of the Cold War: The Nevada Test Site*.