



8.3 Cultural Resources

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The U.S. Department of Energy (DOE), Richland Operations Office, established a cultural resources program in 1987 that is managed by the Hanford Cultural Resources Laboratory as part of the Pacific Northwest National Laboratory (PNL-6942). Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and

CH2M HILL Hanford, Inc. provided support to DOE for the cultural resources program on the Hanford Site throughout 2001. The U.S. Fish and Wildlife Service also has managed cultural resources on the Hanford Site since October 1999.

8.3.1 Monitoring Cultural Resources

The DOE Richland Operations Office has the responsibility for determining effective management and protection policies for the Hanford Site's cultural resources. The Hanford Cultural Resources Laboratory has maintained a monitoring program since 1987 to determine the impact of DOE Richland Operations Office policies and to safeguard cultural resources from adverse effects associated with natural processes or unauthorized excavation and collection that violate federal laws.

Monitoring conducted during 2001 focused on four site or place categories: Locke Island's erosion transects, archaeological sites with natural and visitor impacts, historic buildings and structures, and places with Native American burials.

8.3.1.1 Locke Island Erosion

Erosion monitoring at Locke Island has been ongoing since 1994. Locke Island, located on the Columbia River in the Hanford Reach National Monument, contains some of the best-preserved evidence of prehistoric village sites still existing in the Columbia Basin and is included within the Locke Island National Register Archaeological District. The island has sustained loss due to erosion along its eastern shoreline that has affected archaeological materials. Recent studies have shown that this is due to a large landslide on the eastern side of the Columbia River.

In the 1960s and 1970s, intensive irrigation development began to occur east of Locke Island, above the White Bluffs, which form the eastern boundary of the

Columbia River channel in this area. As a result, the White Bluffs began to show geological failures as excess irrigation water seeped out along the bluffs. One of the largest such failures, known as the "Locke Island Landslide," is located just east of Locke Island. By the early 1980s, the extent of this landslide had moved westward into the river channel toward the island and was directing the current at the island's eastern perimeter. Erosion of the eastern bank of the island accelerated, threatening the cultural resources. By the early 1990s, the erosion had exposed cultural features and artifacts along the bank, leading to the beginning of intermittent monitoring of the erosion cutbank. In 1994, DOE initiated more scheduled, systematic monitoring of island erosion to better understand the physical processes involved as well as mitigate ongoing loss of the archaeological record (PNNL-11970).

Erosion monitoring continued at the Locke Island erosion transects during 2001. The greatest loss recorded at any one monitoring transect was 1 meter (3.28 feet), as measured perpendicularly from the Columbia River (Figure 8.3.1). This amount of erosion was much less than the 19.6 meters (64.3 feet) of horizontal cutbank lost to the river at a single transect in 1997 during a period of high water flow (PNNL-11970). Two transects showed a 0.1 meter (0.33 foot) gain in 2001, which was caused by measuring discrepancies and bank separation prior to collapse. The overall reduction in erosion observed from 1997 to 2001 was likely attributable to several factors including a slow and steady snowmelt following the 1998-1999 winter season, less dramatic river fluctuations during periods of high water, and a wider channel on the east side of Locke Island (Figure 8.3.2).

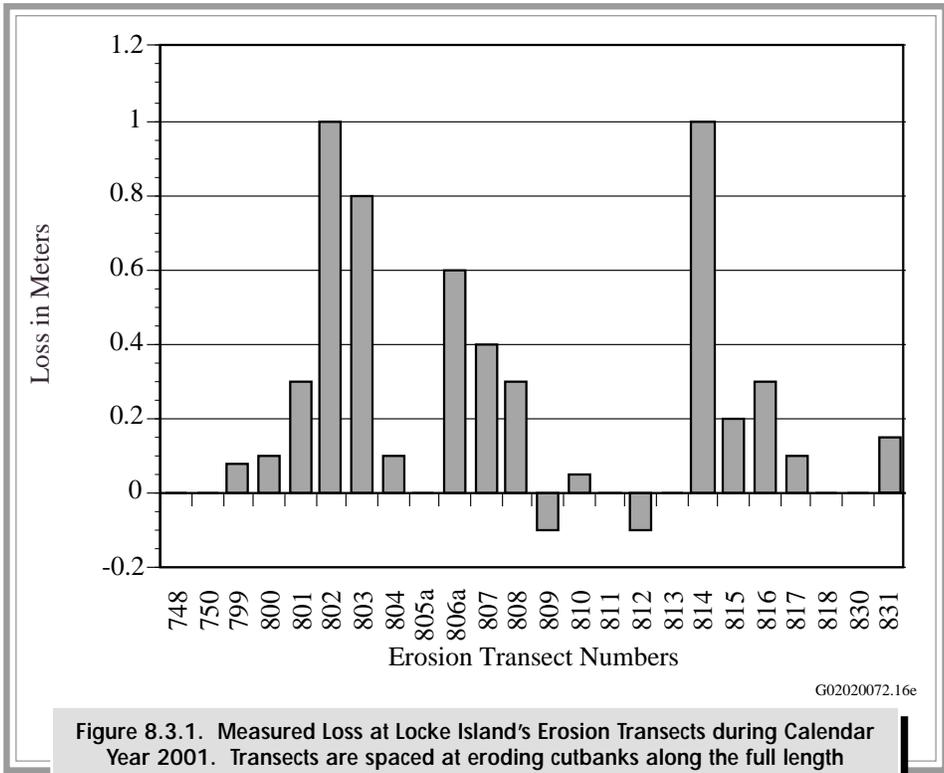
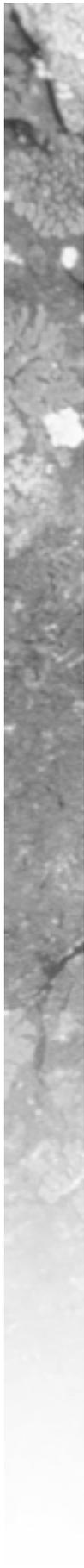


Figure 8.3.1. Measured Loss at Locke Island's Erosion Transects during Calendar Year 2001. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.

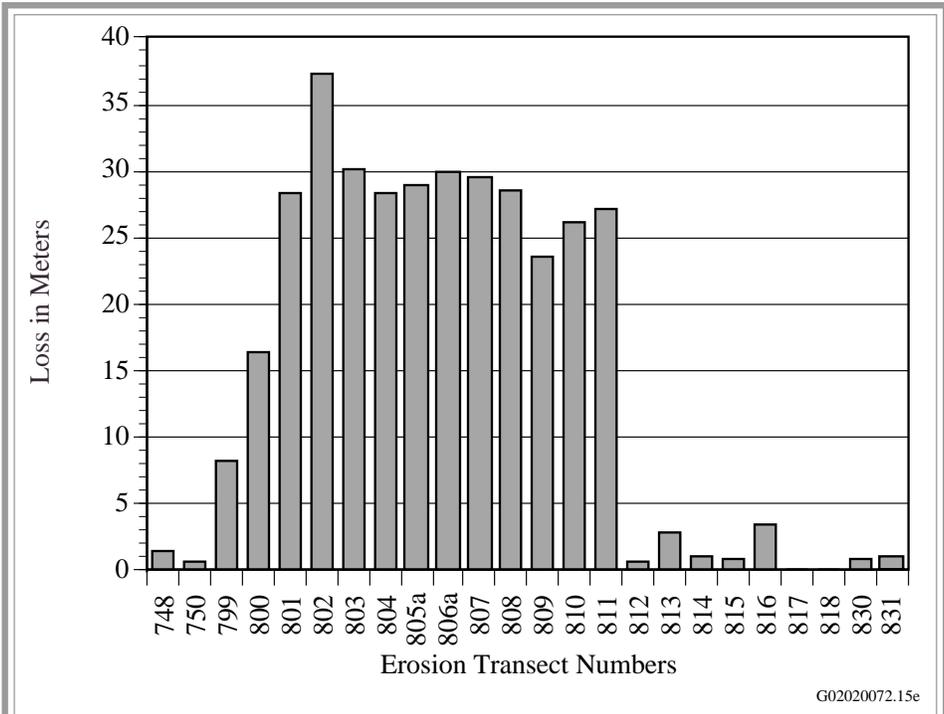


Figure 8.3.2. Total Measured Loss at Locke Island's Erosion Transects between November 1995 and September 2001. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.

8.3.1.2 Archaeological Sites

Monitoring associated with the second category, archaeological sites with natural and visitor impacts, began in 1998 and continued in 2001. Eighty-six archaeological sites were monitored to gather empirical data about

- the natural characteristics of each site (i.e., landform, stratigraphy)
- the processes adversely affecting the site (such as riverbank erosion, wind erosion, or human visitation)
- the trends in change at the site (e.g., likelihood of increasing erosion or eventual stability).

Monitoring stations established at each archaeological site in this category facilitated the collection of standardized data unique to each site. In 2001, effects observed and measured at these sites were due to recreational use, visitor impact, and/or natural weathering processes. The data collected at these archaeological sites will be used to monitor changes that may impact the site, predict outcomes, and proactively manage other similar archaeological sites across the Hanford Site.

8.3.1.3 Historic Buildings

Monitoring of historic buildings in 2001 focused on Bruggemann's Warehouse, the only cobblestone structure remaining on the Hanford Site, the White Bluffs Bank building, and the Hanford town site high school. The buildings were photographed and locations of

structural deterioration were identified. Future monitoring inspections will continue to gather data about any crack widening and structural leaning that may occur.

8.3.1.4 Cemeteries

Places with cemeteries or known human remains include locations that are sacred to the Wanapum People, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe. In 2001, all these places were monitored to document baseline conditions, determine whether wind or water erosion had exposed human remains, and assure that violations of Federal laws were not present or ongoing at these important places. Overall, places with human remains were found to be stable in 2001. However, one violation (collector digging) was noted at one cemetery or place with human remains.

In summary, a total of 83 archaeological sites, 3 buildings, and a number of cemetery or burial locations were monitored during 2001. Of the incidents recorded at these monitored places, 64 of 83 were related to natural causes such as animal trailing and digging, wind-caused erosion or aggradations, and water erosion. Seventeen percent of the incidents were determined to be human-related causes such as vehicle traffic where sites were exposed in roads or recreational activities such as fishing or duck hunting. Six percent of the incidents were found to be associated with recent collector digging within archaeological site boundaries and/or surface collection of artifacts. Such digging and collection on federal lands is a violation of federal law.

8.3.2 Native American Involvement

Members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Nez Perce Tribe, and Wanapum People were actively involved in the cultural resources program during 2001. Each tribe was involved in deciding DOE's cultural resource program work scope, budget, and schedule. Monthly meetings on cultural resource issues provided a venue for the exchange of information between DOE, tribal staff members, and site contractors about projects and work on the Hanford Site. These meetings included discussions of sitewide projects dealing with a wide range of topics: the groundwater/vadose zone, sagebrush mitigation, survey of Hanford's large dune fields, *Native American Graves Protection and Repatriation Act* issues, cultural resources management policies on the Hanford Reach National Monument, *Archaeological Resources Protection Act of 1979* permit for re-licensing

of Wanapum and Priest Rapid Dams, *Archaeological Resources Protection of 1979 Act* violations, and updates on a draft archaeological programmatic agreement and the Hanford Cultural Resources Management Plan (PNL-6942). Tribal staff and site contractors worked together during the completion of several field surveys to identify and record cultural features, sites, and landscapes in advance of new construction and archaeological test excavations and to monitor numerous projects requiring excavation during the year.

One member of the Wanapum People assisted with cultural resource surveys, site form preparation, records management, and equipment use in 2001. In addition, interviews were conducted with Wanapum elders concerning traditional cultural properties on the Hanford Site.



8.3.3 Public Involvement

Public involvement is an important component of a cultural resources management program. To accomplish this, DOE developed mechanisms that allow the public access to cultural resources information and the ability to comment and make recommendations concerning the management of cultural resources on the Hanford Site. These mechanisms were woven into draft public involvement procedures that include input provided by the public and Hanford Site staff over the past several years.

Workshops were organized and conducted to seek public comment on a variety of cultural resource initiatives and projects undertaken by DOE. Since 2000, comments have been sought on an updated draft of the Hanford Cultural Resources Management Plan (PNL-6942) and a draft of public involvement procedures. The purpose of public involvement procedures was to determine the process that the Hanford Cultural Resources Program will follow to interact with interested groups. Major interest groups involved in assisting DOE with cultural resource initiatives included the B Reactor Museum Association, White Bluffs-Hanford Pioneer Association, the Washington State Railroad Historical Society, and local historical societies and museums.

One Public Issues Exchange Workshop was held in 2001. At this workshop, there were discussions pertaining to efforts undertaken by the U.S. Fish and Wildlife Service to stabilize the East White Bluffs log cabin, planned exhibits for Black History Month, status of plans for the rehabilitation of the White Bluffs Bank

building, and an update on the various initiatives for the preservation of B Reactor, including the preservation of B Reactor artifacts and completion of Historic American Engineering Record documentation of B Reactor.

These workshop discussions indicated continual strong support for the use of B Reactor as a publicly accessible museum. A Save America's Treasures grant proposal, a Federal Historic Preservation Fund grant program to preserve nationally significant structures and sites, was discussed as a means to fund renovation of B Reactor.

Additional discussions at the workshop focused on the ongoing curation of Manhattan Project and Cold War era artifacts into the Hanford collection, and an update on the draft History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990, which was completed and distributed for public review in 1999-2000, and is scheduled to be completed and submitted to DOE Richland Operations Office for publication in 2002.

In 2001, DOE continued to document the oral histories of early residents of areas now part of the Hanford Site as well as Native Americans, former Hanford Site workers, and current site employees. A total of 18 interviews were conducted in 2001. The Oral History Pilot Project identified pre-1943 Euro-American settlement themes that led to an interview of Judge Lloyd Wiehl, former resident of East White Bluffs and the Wiehl Ranch, an area now part of the Hanford Site.

8.3.4 Section 106 Activities

Pursuant to Section 106 of the *National Historic Preservation Act*, cultural resources reviews must be conducted before a federally funded, federally assisted, or federally licensed ground disturbance or building alteration/demolition project can take place. Because the Hanford Site is a federal facility, cultural resource reviews are required to identify properties within the proposed project area that may be eligible for, or listed in, the National Register of Historic Places and evaluate the project's potential to affect any such property. The recently modified cultural resource review process includes two review options. The first option allows DOE to consider the review process complete if the proposed projects have no potential to effect historic properties. The second option involves notification of the

State Historic Preservation Officer, tribes, and interested parties if a project has potential to affect a historic property.

During 2001, Hanford Site contractors requested 150 cultural resource reviews (Figure 8.3.3). A majority of the reviews involved areas that had been previously surveyed or were located on previously disturbed ground. Of the areas reviewed, 11 also were monitored during the construction phase, 1 required an archaeological survey, and 86 involved proposed building modifications, demolitions, and Programmatic Agreement for the Built Environment (DOE/RL-96-77) exemptions. Exempt properties are those buildings and structures that are clearly not historic; therefore, they are

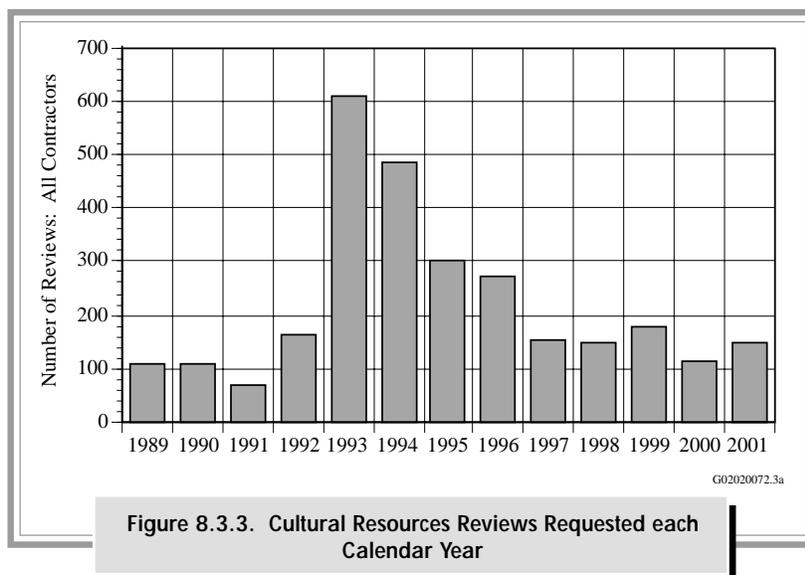


Figure 8.3.3. Cultural Resources Reviews Requested each Calendar Year

not required to be evaluated for listing in the National Register of Historic Places due to their obvious lack of historic significance. The archaeological survey covered

a total of ~32 hectares (~80 acres) and no isolated finds or archaeological sites were recorded.

8.3.5 Section 110 Activities

Section 110 of the *National Historic Preservation Act* requires that federal agencies undertake a program to identify, evaluate, and nominate historic properties and consider the use and reuse of historic buildings or structures. Agencies are further required to maintain and manage historic properties in a way that considers preservation of their value and assures that preservation-related activities are completed in consultation with other agencies, the tribes, and the general public.

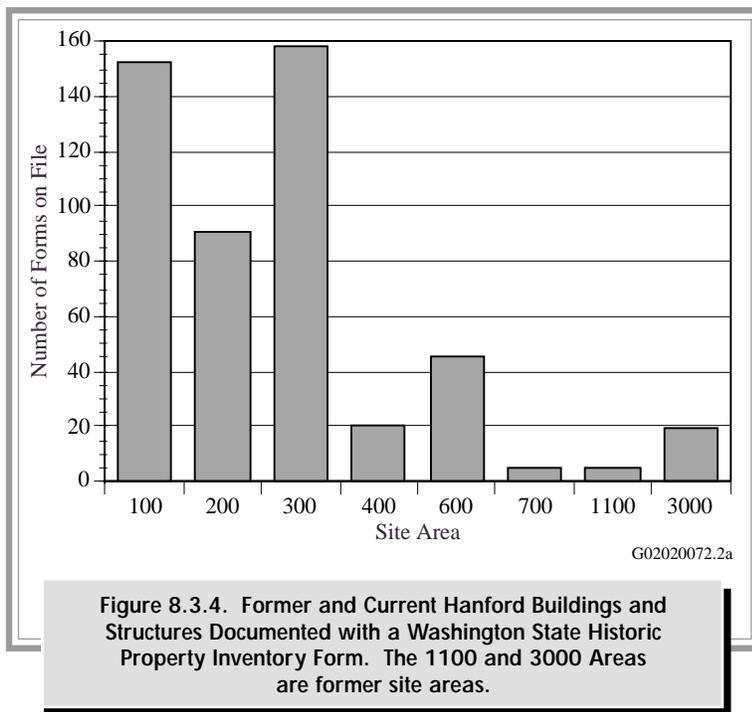
During 2001, DOE was in the process of evaluating the feasibility of retaining various historic structures on the Hanford Site, including the Hanford town site high school and the Coyote Rapids hydroelectric pumping plant, two pre-Manhattan Project era buildings. An assessment of the structural condition of both buildings was completed. The studies detailed existing conditions, interim actions, conservation needs, and immediate stabilization requirements. Both studies developed cost estimates for stabilization. A committee comprised of members of the interested public and staff of DOE, Bechtel Hanford, Inc., and Pacific Northwest National Laboratory continued to explore stabilization and restoration alternatives for the historic White Bluffs Bank building.

In 2001, management activities conducted to fulfill Section 110 requirements included continued implementation of the Programmatic Agreement for the Built

Environment (DOE/RL-96-77) and application of the Hanford Site curation strategy to identify, evaluate, and preserve Manhattan Project and Cold War era artifacts (DOE/RL-97-71). Since Section 110 activities began on the Hanford Site, 531 buildings/structures have been documented on historic property inventory forms and are on file at the Hanford Cultural Resources Laboratory (Figure 8.3.4).

Five surveys comprised the 2001 Section 110 efforts: the 24 Command Wildland Fire Assessment, the Fiscal Year 2001 Site Monitoring Task - Rattlesnake Mountain Survey, the Gable Butte Block Survey, the Fiscal Year 2001 Fire Assessment - 100 Areas Fire Survey, and the Fiscal Year 2001 Low Water River Survey. A total of ~1,068 hectares (2,641 acres) were surveyed in 2001 for Section 110 compliance.

The 24 Command Wildland Fire Assessment survey was the result of the U.S. Department of Interior's Burn Area Emergency Rehabilitation team's assessment of the effects of the 24 Command Wildland Fire on the site's cultural resources. The 24 Command Wildland Fire was a large wildfire that burned portions of the site and the Hanford Reach National Monument in the summer of 2000 (PNNL-13487). The team recommended that DOE complete an inventory of locations disturbed by fire suppression efforts, and complete a field inventory and evaluation of sites previously recorded



within the burn area. The 2001 assessment was conducted by the Hanford Cultural Resources Laboratory with the assistance of the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, the Yakama Nation, and the Wanapum People. Five newly identified archaeological sites and two newly identified isolated finds were recorded during the assessment. Twenty-four previously recorded sites and four previously recorded isolated finds also were assessed for damage from the fire. Within the burn area, an additional 21 isolated finds and 4 sites could not be relocated during the survey. Although the fire destroyed wooden artifacts and structures, the fire did expose previously heavily vegetated areas around several historic anti-aircraft artillery sites in the burn area that resulted in the discovery of concrete foundations and pads, sidewalks and other non-wooden artifacts associated with these sites.

The Fiscal Year 2001 Site Monitoring Task - Rattlesnake Mountain Survey was conducted by the Hanford Cultural Resources Laboratory with assistance from the Nez Perce Tribe. Approximately 36 hectares (~90 acres) were surveyed on top of Rattlesnake Mountain around the radio towers and the observatory. This survey was undertaken to inventory cultural resources at the summit of the mountain. Three prehistoric archaeological sites consisting of rock cairns were recorded.

The Gable Butte Block Survey was conducted by the Hanford Cultural Resources Laboratory with assistance from members of the Wanapum People and the Confederated Tribes of the Umatilla Indian Reservation. The

area was surveyed because Gable Butte is a geographical extension of Gable Mountain and is likely to be associated with the Gable Mountain Cultural District that was determined eligible for the National Register of Historic Places in 1990. The survey covered ~98 hectares (~244 acres). Fourteen archaeological sites and five isolated finds were recorded during the survey. Archaeological features recorded included cairns, talus pits, two hunting sites/game drives, several lithic scatters, and flaked detritus. These prehistoric features were evidence that the area was likely to have been used for spirit quests by local tribes. Historic period artifacts consisted of four isolated finds, including fence posts and cans.

The Fiscal Year 2001 Fire Assessment - 100 Areas Fire Survey was conducted by the Hanford Cultural Resources Laboratory with assistance from members of the Confederated Tribes of the Umatilla Indian Reservation. The survey, which covered

~571 hectares (~1,413 acres), was conducted in response to a wildfire started by two lightning strikes in the 100 Areas in June 2001. One archaeological site and two isolated finds were recorded during the survey. The survey also noted that the area suffered minor archaeological impacts from fire suppression activities.

The Fiscal Year 2001 Low Water River Survey was conducted by the Hanford Cultural Resources Laboratory with assistance from members of the Wanapum People, Yakama Nation, and Nez Perce Tribe. The intent of the 190-hectare (470-acre) survey was to examine areas immediately adjacent to the Columbia River that were exposed during low river flows. Two newly identified historic sites were recorded, both linear rock features most likely associated with mining activities in the early 1900s. In addition, two newly identified prehistoric isolates were discovered, a net sinker and a bifacial tool. Many previously recorded sites also were observed during the survey. The survey noted that the archaeological sites exhibited minimal erosion damage.

8.3.5.1 Historic District

During 2001, the building mitigation project continued to implement the Programmatic Agreement for the Built Environment (DOE/RL-96-77) and the site-wide treatment plan (DOE/RL-97-56) at the Hanford Site. The treatment plan is stipulated in the programmatic agreement and directs that a mitigation document be produced that chronicles the history of the Hanford

Site during the Manhattan Project and Cold War periods. The draft History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990 was completed and distributed in 1999 for public review, regulatory review, and peer review. Review comments have been received by DOE and included in the final document that is to be published in 2002.

The Hanford Site Manhattan Project and Cold War Era Historic District was established in 1996, and 185 buildings, structures, and complexes were determined eligible for listing in the National Register of Historic Places as contributing properties within the historic district recommended for individual documentation. A contributing property is a building, structure, site, or object that adds to the historic significance of a historic district (Figure 8.3.5). Subsequent public meetings and staff evaluations identified additional properties in the 600, 700, and former 1100 Areas, including the Hanford Site railroad and the Hanford Atmospheric Dispersion Test Facility, as contributing properties within the historic district and recommended for individual documentation, bringing the total to 190 (Figure 8.3.6). All of the buildings, structures, and complexes recommended for individual documentation have been documented according to standards identified in the sitewide treatment plan (DOE/RL-97-56). Six historic properties, including B Reactor, have been documented at the Historic American Engineering Record level, 46 have been documented with Expanded



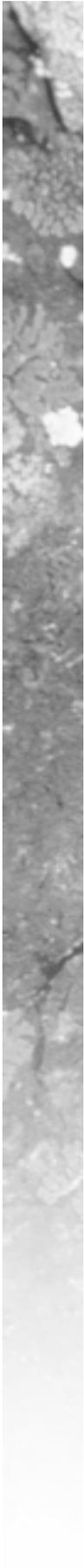
Figure 8.3.5. Historic Sites are Commonly Found during Surveys Conducted at the Hanford Site

Historic Property Inventory Forms, while standard Historic Property Inventory Forms have been prepared for the remaining 138 buildings and structures.

Approximately 900 buildings and structures have been identified as either contributing properties with no individual documentation requirement or as non-contributing/exempt buildings and structures. These buildings will be documented in a database maintained by DOE. According to the Programmatic Agreement for the Built Environment (DOE/RL-96-77), certain



Figure 8.3.6. KW Reactor, a Contributing Property Recommended for Mitigation within the Hanford Site Manhattan Project and Cold War Era Historic District



property types such as mobile trailers, modular buildings, storage tanks, towers, wells, and structures with minimal or no visible surface manifestations are exempt from the identification and evaluation requirement.

8.3.5.2 Hanford Curation Strategy

The application of the curation strategy for artifacts and records associated with the Hanford Site Manhattan Project and Cold War Era Historic District continued in 2001. The strategy is stipulated in the Programmatic Agreement for the Built Environment (DOE/RL-96-77), which directs DOE to assess the contents of Hanford's historic buildings and structures prior to the commencement of deactivation, decontamination, or decommissioning activities. The purpose of the assessments is to identify and preserve any artifacts (e.g., control panels, signs, scale models, machinery) that may have interpretive or educational value as exhibits within national, state, or local museums. The assessments are accomplished by conducting walkthroughs of the contributing

properties within the historic district by teams of cultural resources specialists, historians, archivists/curators, and facility experts. Twenty-five walkthroughs were conducted in 2001, including 16 in facilities in the 300 Area, 1 in the 600 Area, 7 in the 100 Areas, and 1 in the 200 Areas. Industrial artifacts were tagged and recorded by the Hanford Cultural Resources Laboratory and transferred to the custody of the Columbia River Exhibition of History, Science and Technology museum for curation.

DOE's archaeological collections and associated records continued to be housed in Pacific Northwest National Laboratory's repositories during 2001. A draft management plan that deals specifically with archaeological collections, developed in 1998, was used during 2001 to guide access and use of the collections and to provide guidelines for acquisition and transfer of collections. A pest management and monitoring effort for archaeological collections conducted during 2001 found no indications of pest infestations.

8.3.6 Education and Research

Educational activities associated with the cultural resources program in 2001 consisted of lectures on a variety of topics, to groups ranging from public school classrooms to civic groups, colleges, and professional societies. Several symposia were organized throughout the Pacific Northwest region to present DOE's cultural resources management techniques to professional groups and societies. Washington's Archaeology Month provided educational opportunities in the form of lectures and social gatherings for residents of the Tri-Cities' area through the efforts of staff and professionals from Washington State University, the DOE, and the Pacific Northwest National Laboratory.

Several cultural resources newsletters were written by staff of the Pacific Northwest National Laboratory, DOE, and Bechtel Hanford, Inc. that focused on Hanford histories and cultural resources management issues on the Hanford Site, including stabilization plans for

the White Bluffs Bank building, establishment of the Hanford Site, documentation of Manhattan Project and Cold War buildings, archaeological excavations and Hanford's prehistory, long-term cultural site monitoring, Hanford's historic farming landscape, early pre-Hanford Site settlements and the White Bluffs landing, and updates on the B Reactor project.

Pacific Northwest National Laboratory participated in the Associated Western Universities, Inc. program by hosting a student intern involved in field and laboratory work with Hanford Cultural Resources Laboratory staff.

Research activities continued as part of compliance work. Research in the field of archaeology and history focused on archaeological site preservation and protection and documentation of the site's built environment from the Manhattan Project and Cold War periods.