7.3 Cultural Resources

D. W. Harvey and L. L. Hale

The DOE Richland Operations Office established a cultural resources program in 1987 that is managed by the Hanford Cultural Resources Laboratory (PNL-6942) as part of the Pacific Northwest National Laboratory. Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and CH2M HILL Hanford, Inc. provided support to the DOE for the cultural resources program on the Hanford Site throughout 2003. The U.S. Fish and Wildlife Service also has managed cultural resources on Hanford Site national monument lands since October 1999.

7.3.1 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 the 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 2003 focused on four sites or place categories: Locke Island's erosion, archaeological sites with natural and visitor impact, historic buildings and structures, and Native American sites (i.e., Locke Island).

In summary, a total of 53 archaeological sites, 5 buildings, and 15 cemetery or burial locations were monitored during 2003. Of the 69 findings recorded at these monitored places, some were related to more than one cause. Ninety-three percent were related to natural causes such as animal trailing and digging, wind-caused erosion or aggradations, and water erosion, while 24% of the findings were determined to be human-related. Most of the human-related causes were related to vehicle traffic where sites were exposed in roads and to fishing or duck hunting activities.

7.3.1.1 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 shoreline 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.

During the 1960s and 1970s, intensive irrigation development began to occur north and east of 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 irrigation water seeped out along the bluffs. One of the largest such slides, known as the "Locke Island Landslide," is located due east of Locke Island. By the early 1980s, this landslide extended into the river channel toward the island and directed the current toward 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 cut bank. During 1994, the 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 2003. The greatest erosion recorded at any one monitoring transect was 1 meter (3.3 feet), as measured perpendicularly from the Columbia River (Figure 7.3.1). This amount of erosion was much less than the 19.6 meters (64.3 feet) of riverbank eroded to the river at a single transect in 1997 during a period of high water flow (PNNL-11970). Four transects showed gains of 0.1 meter (0.3 foot) or less in 2003. One transect showed a barely discernable gain of 0.01 meter (0.03 foot), one transect showed a gain of 0.08 meter (0.26 foot), one transect showed a gain of 0.05 meter (0.16 foot), and one transect showed a gain of 0.1 meter (0.3 foot). These apparent gains were caused by measuring discrepancies and bank separation prior to collapse. The overall reduction in erosion observed since the high water of 1997 (Figure 7.3.2) was likely attributable to the fact that river flows have been lower since 1997, and the fact that the east channel was widened approximately 40 meters (131 feet) as a result of erosion along the east bank of the island and along the toe of the landslide (PNNL-11970).

7.3.1.2 Archaeological Sites

Monitoring archaeological sites for natural and visitor impact began during 1998 and continued during 2003. During 2003, 73 sites were monitored to gather empirical data about the:

- Characteristics of each site (e.g., landform, stratigraphy).
- Processes and changes adversely affecting the site (i.e., riverbank erosion, wind erosion, human visitation).

Monitoring stations established at each archaeological site facilitated the collection of standardized data unique to each site. During 2003, effects observed and measured at these sites were due to recreational use, collector digging, and/or weathering processes. The data collected at these archaeological sites are used to assess changes that may impact each site, predict outcomes, and manage other similar archaeological sites across the Hanford Site.

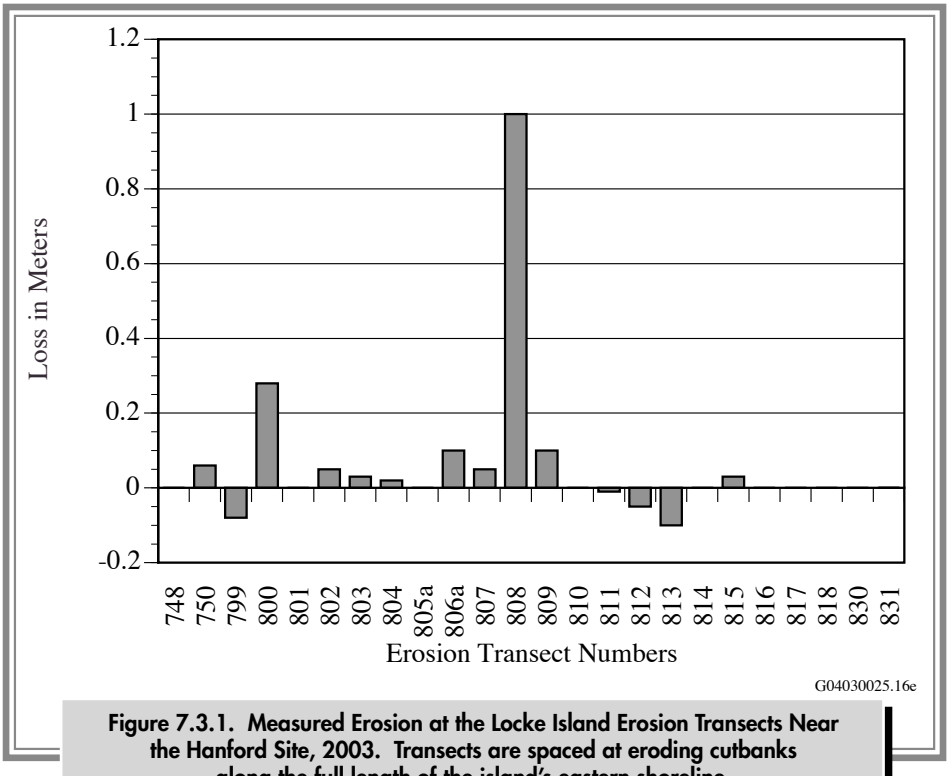

Figure 7.3.1. Measured Erosion at the Locke Island Erosion Transects Near the Hanford Site, 2003. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.

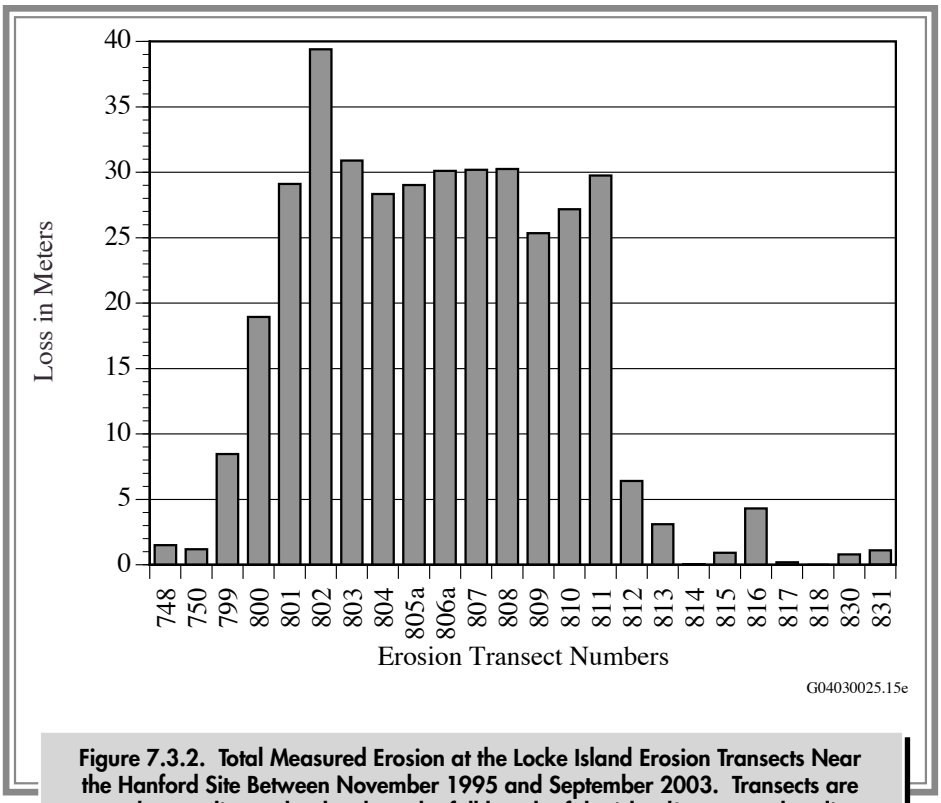

Figure 7.3.2. Total Measured Erosion at the Locke Island Erosion Transects Near the Hanford Site Between November 1995 and September 2003. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.

7.3.1.3 Historic Buildings

Monitoring of historic buildings during 2003 focused on Bruggemann's Warehouse, the only pre-1943 cobblestone structure remaining on the Hanford Site; the First Bank of White Bluffs building; Coyote Rapids Pumping Plant; Hanford town site electrical substation; 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. The DOE and U.S. Fish and Wildlife Service conducted emergency stabilization at the White Bluffs Bank building in 2003 (and early 2004).

7.3.1.4 Cemeteries

Places with cemeteries or known human remains include locations that are sacred to the Wanapum, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe. During 2003, 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 occurring at these places. Overall, places with human remains were found to be stable during 2003. No violations were noted.

7.3.2 Native American Involvement

Members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Nez Perce Tribe, and the Wanapum were actively involved in survey and monitoring efforts for the DOE.

Four Tribal meetings on cultural resources during 2003 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 site-wide projects and cultural reviews dealing with a wide range of topics: mitigation of impact of Bonneville Power Administration road maintenance and upgrade projects along their power line right-of-ways and access roads on the Hanford Site, a radiological survey of the 100-B/C controlled area, an environmental

impact statement for the Tank Closure Project in 200-East and 200-West Areas, the Gable Mountain Management Plan, a U.S. Fish and Wildlife Service comprehensive conservation plan environmental impact statement, the transfer of land from the DOE to the U.S. Fish and Wildlife Service, vehicular access to a cemetery located near the original site of the Environmental Molecular Sciences Laboratory, re-vegetation/stabilization of eroded sand dunes near the 100-F Area, a Hanford Reach National Monument exterior boundary land survey, archaeological testing reports resulting from *National Historic Preservation Act* Section 106 projects (Section 7.3.4), development of alternative Section 106 procedures, 100-K Area remedial actions, updates on *Archaeological Resources Protection Act of 1979* violations, the draft archaeological programmatic agreement and the publishing of the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10). 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.

In 2003, one interview was conducted with a Wanapum elder concerning traditional cultural properties on the Hanford Site.

7.3.3 Public Involvement

Public involvement is an important component of a cultural resources management program. To accomplish this, the DOE developed processes 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. Major interest groups involved in assisting the 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.

Since 1987, workshops have been organized and conducted to seek public comment on a variety of cultural resource initiatives and projects undertaken by the DOE. These workshop discussions indicated continual strong support for the use of B Reactor as an interpretive facility. In 2003, a public issues exchange workshop/meeting was held. Issues discussed included plans for the stabilization and eventual restoration of the First Bank of White Bluffs building. The DOE drafted an access agreement that allowed the U.S. Fish and Wildlife Service to undertake stabilization and restoration efforts of the historic bank building and assume liability for the use of volunteers. Other issues discussed included the DOE's publishing of the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10); President Bush's Preserve America Executive Order 13287 (68 FR 10635); an update on the preservation status of B Reactor; plans for a 2-day workshop by the Atomic Heritage Foundation devoted to a proposed National Park Service study to establish a Manhattan Project historic park at Hanford, Oak Ridge, and Los Alamos; a draft Hanford Cultural Resources Laboratory's agricultural landscape study at the Hanford Site; and the *Hanford Cultural Resources Laboratory Oral History and Ethnography Task Annual Report* (PNNL-14237) published in 2003.

Since 2000, the public and Tribes provided comments on drafts of the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10). The final draft management plan was submitted to the DOE for approval in December 2002, and was approved and published in February 2003.

Additional public discussions over the past several years focused on the ongoing curation of Manhattan Project and Cold War era artifacts into the Hanford collection.

During 2003, the 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.

7.3.4 Cultural Resources Reviews

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 that property. The recently modified cultural

resource review process includes two review options. The first option allows the DOE to consider the review process complete if the proposed projects have no potential to affect historic properties. The second option involves notification of the State Historic Preservation Officer, Tribal Nations, and interested parties if a project has potential to affect a historic property.

The Hanford Cultural Resources Laboratory worked closely with the DOE during 2003 to educate Hanford environmental compliance officers on the Section 106 and the cultural resources review processes.

During 2003, Hanford Site contractors requested 142 cultural resource reviews (Figure 7.3.3). A majority of the reviews involved areas that had been previously surveyed or were located on previously disturbed ground. Of the areas reviewed, 2 were monitored during the construction phase, 6 projects required an archaeological survey, and 21 involved proposed building modifications, demolitions, and exemptions from the Programmatic Agreement for the Built Environment (DOE/RL-96-77). Exempt properties are those buildings and structures that are clearly not historic; therefore, they are not required to be evaluated for listing in the National Register of Historic Places.

The following are major cultural resources reviews that were completed during 2003:

- Benton County Horn Rapids Park Easement

  This review was initiated in fiscal year 2000 in response to a request by Benton County for three easements from the DOE for utilities at the Horn Rapids Park. The park is located adjacent to *Wanawish*, a Wanapum ethnographic fishing site, recently determined eligible by State Historic Preservation Officer and the DOE as a traditional cultural property. The State Historic Preservation Officer recommended that mitigation agreements be included in a memorandum of agreement. Two newly recorded historic sites on the Hanford Site were determined not eligible to the National Register. The State Historic Preservation Officer and the DOE concurred with these findings. The Hanford Cultural Resources Laboratory and Tribal cultural resource technicians completed shovel testing at another site and determined that the site is not eligible to the National Register. State Historic Preservation Officer, Tribal, and DOE concurrence is pending.

- Well Installations at the 100-KR-4 Pump-and-Treat Project Site

  This review was completed as part of ongoing well installation activities related to the 100-KR-4 Pump-and-Treat Project, which is located in the vicinity of the 100-K Areas. Bechtel Hanford, Inc. had developed a Cultural Resources Treatment Plan (DOE/RL-96-44) for the 100-KR-4 Pump-and-Treat Project in 1996. Following the recommendations of the treatment plan, the Hanford Cultural Resources Laboratory completed excavation of two units. No significant cultural features were located.

- Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks (Tank Closure) Environmental Impact Statement

  This review was completed as part of the DOE's proposal to retrieve waste from 149 single-shell tanks and 28 double-shell tanks and close the single-shell tank farms. The Hanford Cultural Resources Laboratory and Tribal cultural resource technicians surveyed approximately 76.9 hectares (190 acres) of land located in and adjacent to the 200 Areas. A small military

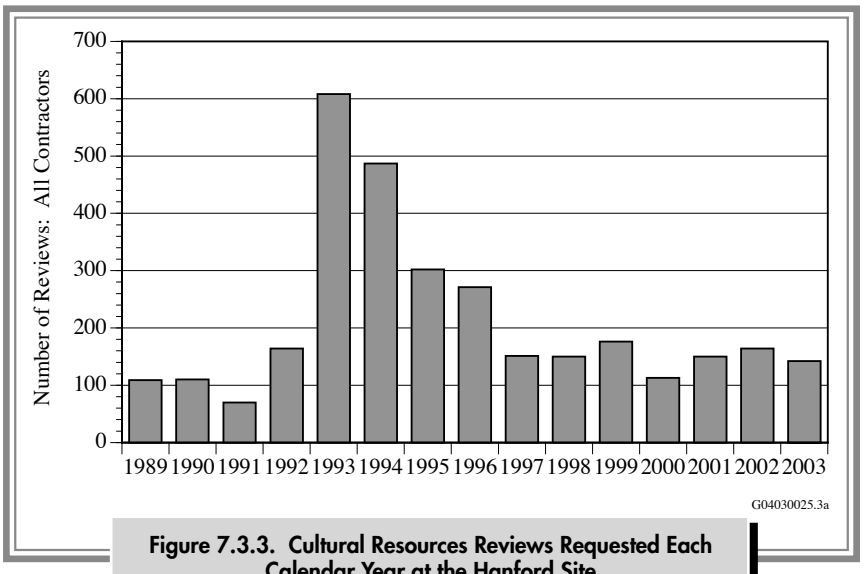

Figure 7.3.3. Cultural Resources Reviews Requested Each Calendar Year at the Hanford Site

refuse pile of cans and coke bottles associated with an antiaircraft artillery site was recorded and determined not eligible to the National Register.

- Blanket Cultural Resources Review of Biological Surveys in Support of the Public Safety and Resources Protection Program

  This review was completed as part of Pacific Northwest National Laboratory's Public Safety and Resource Protection Program environmental monitoring project. To assure that significant cultural resources are not impacted, animal trap placements selected by the Resource Protection Program are to be reviewed by the Hanford Cultural Resource Laboratory and Tribal cultural resource technicians to ensure none of the sites are located in culturally sensitive areas.

- Frequency Modulation Dial Development Use of Trailer on Gable Mountain

  This review was completed as part of a Pacific Northwest National Laboratory experiment to test a system that was developed to detect chemical weapon agents, their precursors, and their degradation products. A portion of this experiment was located on Gable Mountain. The Hanford Cultural Resource Laboratory evaluated the impact of the experiment apparatus on the view of Gable Mountain, an area highly revered by Tribes. To avoid potential impact to Gable Mountain, Tribes and Hanford Cultural Resource Laboratory personnel recommended that a trailer not be located on the mountain during culturally sensitive times or when Tribes themselves are accessing the mountain for spiritual use.

- Bonneville Power Administration Road Improvement Projects along Bonneville Power Administration Line Right-of-Way in various locations in the 600 Area of the Hanford Site

  Three reviews were completed for the Bonneville Power Administration road improvement projects located on the Hanford Site.

  One review covered a portion of the Lower Monumental Ashe power line in the 600 Area near Gable Mountain on the Hanford Site. Hanford Cultural Resource Laboratory and Tribal cultural resource technicians completed a survey of the project area and recommended cultural resource monitoring for Bonneville Power Administration maintenance activities occurring near culturally sensitive areas.

  The second review covered access roads outside of the Bonneville Power Administration's right-of-way and along portions of the Ashe Hanford/Scooteney Tap power line north of Gable Mountain in the 600 Area on the Hanford Site. Hanford Cultural Resource Laboratory and Tribal cultural resource technicians completed a survey of the project area identifying several cultural resources that could be impacted by road improvement activities. A second phase was recommended to evaluate potentially impacted resources against National Register criteria. Bonneville Power Administration agreed to avoid the cultural resources. The Hanford Cultural Resource Laboratory recommended that the site did not meet National Register criteria. A final concurrence from the State Historic Preservation Officer, Tribes, and the Bonneville Power Administration is pending.

  A third review covered Bonneville Power Administration's access roads under the Lower Monumental Hanford/Scooteney Tap power line right-of-way near the former town of White Bluffs and maintenance and improvement activities on access roads outside the right-of-way on the Hanford Site. Hanford Cultural Resource Laboratory and Tribal cultural resources technicians completed a survey of the project area identifying several cultural resources that could be impacted by road improvement activities. National Register eligibility reports are being completed. Consultation with the Tribes is ongoing regarding how to mitigate impact to the site.

7.3.5 Evaluation of Historic Buildings and Structures

Section 110 of the *National Historic Preservation Act* requires that federal agencies undertake a program to identify, evaluate, and nominate historic properties to the National Register of Historic Places and shall use, to the maximum extent feasible, historic buildings or structures available under their ownership. 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 Tribal Nations, and the general public.

During 2003, cleanup and emergency stabilization of the First Bank of White Bluffs building was conducted by the White Bluffs Preservation Coalition, comprised of members of the interested public and staff of the U.S. Fish and Wildlife Service and Pacific Northwest National Laboratory. Restoration activities of the historic bank building are planned for 2004.

Since 1999, the DOE has been evaluating the feasibility of retaining five buildings on the Hanford Site from the pre-Manhattan Project era. Reports about four buildings have been completed: the First Bank of White Bluffs, Hanford town site high school, Coyote Rapids Pumping Plant, and Bruggemann's Warehouse. The existing conditions of the buildings have been assessed and interim actions, conservation needs, immediate stabilization requirements, and cost estimates for stabilization have been identified.

During 2003, one field survey effort was conducted to fulfill Section 110 requirements of the *National Historic Preservation Act* – the Evaluate and Record Farm Sites task. This ongoing effort originated in fiscal year 2001 and is designed to identify all of the farming-related sites on the Hanford Site eligible for listing in the National Register of Historic Places. Although field surveys were conducted, a significant effort was involved in analyzing historic land records, interpreting historic and contemporary aerial photographs, and collecting and analyzing oral histories. During 2003, a total of 32 farm sites near the Hanford and White Bluffs town sites and the China Bar area near Vernita Bridge were visited, covering approximately 283.3 hectares (700 acres). Of this total, 28 were newly recorded sites. Four previously recorded sites were re-visited in an effort to update site forms to current standards. A draft report[(a)] was written and submitted to the DOE for review and comment.

Management activities conducted during 2003 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 (DOE/RL-97-71) to identify, evaluate, and preserve Manhattan Project and Cold War era artifacts. Since Section 110 activities began on the Hanford Site, 506 buildings and structures within the Hanford Site have been documented on historic property inventory forms and are on file at the Hanford Cultural Resources Laboratory (Figure 7.3.4).

During 2003, 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 application of the curation strategy for artifacts and records associated with the Hanford Site Manhattan Project and Cold War Era Historic District also continued during 2003. The strategy is stipulated in the programmatic agreement for the built environment (DOE/RL-96-77), which directs the 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

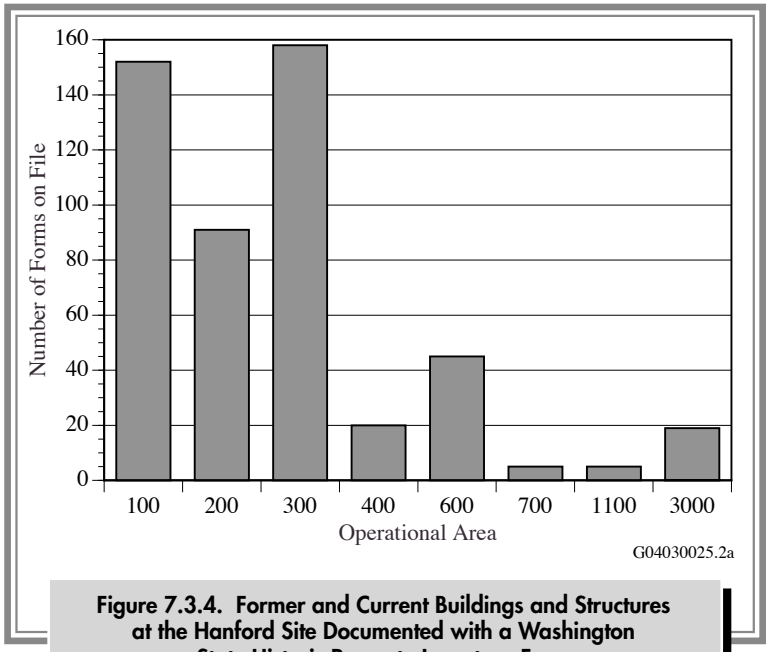

Figure 7.3.4. Former and Current Buildings and Structures at the Hanford Site Documented with a Washington State Historic Property Inventory Form

(a) PNNL-14562, DRAFT submitted to DOE. 2003. *The Hanford and White Bluffs Agricultural Landscape: Evaluation for Listing in the National Register of Historic Places*. DC Stapp, EP Prendergast-Kennedy, DM Woody, and DW Harvey, Pacific Northwest National Laboratory, Richland, Washington.

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. Six walkthroughs were conducted during 2003, consisting of one facility in the 300 Area and five facilities in the 100-K Area. Industrial artifacts were tagged and recorded by staff from the Hanford Cultural Resources Laboratory to be eventually transferred to the custody of the Columbia River Exhibition of History, Science, and Technology museum in Richland for curation.

During 2003, a team consisting of representatives of the Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and Columbia River Exhibition of History, Science, and Technology undertook an assessment of previously identified artifacts to determine which ones were candidates for permanent curation into the Hanford collection. Besides evaluating their condition and physical integrity, the team established revised criteria for the retention of artifacts as potential museum exhibits. Considerations included dimensions and weight in regard to available storage capacity, level of radiological contamination, and whether a particular artifact was already adequately represented in the collection. Archival photographic recordation was recommended for those artifacts not retained.

The DOE's archaeological collections and associated records continued to be housed in Pacific Northwest National Laboratory's repositories during 2003. The section of the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10) that deals specifically with the curation of archaeological collections was used during 2003 to guide access and use of the collections and to provide guidelines for acquisition and transfer of collections. A pest management and monitoring effort was conducted during 2003 of the DOE's archaeological collection holdings in the Pacific Northwest National Laboratory's Sigma V Building repository during 2003. Monthly pest monitoring has indicated that the Pacific Northwest National Laboratory's repository is essentially free of insects.

7.3.6 Education and Research

Educational activities associated with the cultural resources program during 2003 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 the DOE's cultural resources management techniques to professional groups and societies. For Washington State's Archaeology Month in 2003, the Hanford Cultural Resources Laboratory participated in the Tri-Cities Visitors and Convention Bureau's Lewis and Clark Heritage Festival at Sacajewea State Park near Pasco, Washington. The Hanford Cultural Resources Laboratory developed a "Protect the History" interpretive poster for the festival as well as manning a demonstration booth that focused on educating the public about the fragility of the region's archaeological resources.

One cultural resources newsletter, *The Cultural Resources Review*, was written in 2003 by staff of the Pacific Northwest National Laboratory, DOE, and U.S. Fish and Wildlife Service that focused on Hanford histories and cultural resources management issues on the Hanford Site. Articles for the issue included how the Hanford Site was established, site security during the Manhattan Project, and cultural resource management at the Hanford Reach National Monument.

The Pacific Northwest National Laboratory participated in the DOE's Science and Engineering Education Office of Fellowship Programs by hosting two student interns involved in field and laboratory work with Hanford Cultural Resources Laboratory staff.

Research activities continued during 2003 as part of *National Historic Preservation Act* Section 106 and 110 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.