

A WASHINGTON STATE PERSPECTIVE ON LONG-TERM STEWARDSHIP AT HANFORD

John B. Price

State of Washington, Department of Ecology, Nuclear Waste Program

Voice: [509.736.3029

Fax: [509.736-3030]

Email: jpri461@ecy.wa.gov]

Max S. Power

Washington State Department of Ecology

ABSTRACT

Long Term Stewardship for environmental management at the Hanford Site is in a beginning or planning stage. The State of Washington has key interests that include information management, funding (trust funds), and long-term stability of institutional controls. The Hanford Reach National Monument and the B Reactor museum concept are interesting opportunities for stable institutions.

INTRODUCTION

The Hanford Site is arguably the United States Department of Energy's (USDOE) "flagship" site for Long-Term Stewardship (LTS), with over 12 million curies of waste already disposed within the long-term waste management disposal facilities. USDOE proposes on-site disposal of tens of millions of curies of long-lived radioisotopes in those sites over the next 50 years.

In the long term, active involvement by the United States Environmental Protection Agency (USEPA) will dwindle as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup is completed. USDOE's mission of treatment and disposal of waste at the Hanford Site is slated to end by 2046. Control of Hanford lands could pass from USDOE to the United States Fish & Wildlife Service and other successor agencies. Washington State interests will remain in the long term, and LTS leadership must pass from USDOE to the state of Washington and other parties.

The state of Washington has LTS interests that are both similar to and dissimilar from those of USDOE and other states. This paper offers a state of Washington perspective on two key issues: funding for LTS, and inter-generational transfer of information. Many individuals, including upper level USDOE officials, conclude that LTS at Hanford does not need near-term action. This paper will show how the key issues of funding and inter-generational transfer of information require near-term action.

LTS FUNDING

Financial assurance is a fundamental concept of environmental regulation. The federal government is always exempted from those requirements. That exemption is at odds with the reality of the annual appropriations process:

“Long-term stewardship must continually compete in the budget process with other needs, programs, and interest groups, and funding therefore depends on pressure from local and state governments, as well as from elected federal officials.¹”

Federal agencies are always exempted from the financial assurance requirements of environmental laws. The basis for the exemption is that the federal government would never be insolvent in the same way that individuals, corporations, or municipalities could be insolvent. However, the solvency of the federal government is not the basis of the state's concerns about funding for LTS. Rather, the state is concerned about the budgetary availability for funding LTS in a timely manner. There are legal obstacles to the effective design and implementation of assured funding vehicles for USDOE sites. The states and USDOE will need to work with Congress to overcome these obstacles.

Some of the waste sites at the Hanford site will be closed under the Resource Conservation and Recovery Act (RCRA). The federal government is of course exempted from the financial assurance requirements of RCRA. It's interesting to note that Congress considered and rejected an exemption from financial assurance requirements for municipalities²:

“The Agency [EPA] is concerned that if funds are not set aside specifically for closure and post-closure care, the municipality will face difficulties in allocating funds for that purpose when they are needed. If budgetary and legislative processes, bond issues, or voter approval of new taxes are necessary, there is the possibility that necessary closure and post-closure activities will not be performed in a timely manner.”

That USEPA position on municipalities under RCRA is precisely the concern that the state would have on exemption of USDOE from financial assurance requirements for LTS.

Exemption from financial assurance only works if Congress honors LTS obligations each & every year in perpetuity, or, if states are willing to litigate to enforce obligations. The state will have to budget for congressional liaison staff and technical support staff to assure annual appropriations for LTS. Those liaison costs could either be cost-reimbursable by USDOE as a legitimate LTS cost, or, could be borne by the state general fund. An LTS trust fund would remove the need for a liaison staff, and thus would reduce LTS costs either for the USDOE or the state of Washington. This is the case for current cleanup. In Fiscal Year 2002, the President's budget request was \$1.4 billion, a \$432 million (24%) shortfall vs. the budget necessary to meet Hanford minimum legal cleanup commitments³. For the FY2002 budget case the Congress allocated the necessary budget despite the administration's request.

This point is also illustrated by Hanford's history. Contractors at Hanford repeatedly urged action to retrieve, treat, or stabilize liquid high-level wastes during the 1950's to 1970's, but waste management always ranked lower in priority than defense production. Much of the enormous environmental threat and cost now required to remedy Hanford tanks is due to past failure to deal with tank wastes on a timely, year-by-year basis.

States can't count on Congressional support in the future, because the perception of LTS programs will be that the environmental hazards are less urgent problems than the present day waste sites or other critical national priorities. Consequently, funding for LTS will most likely have less

support than current cleanup programs. LTS trust funds would avoid the uncertainty of presidential budget requests and congressional funding actions, and would remove the obligation of litigation from the states.

State government interest in trust funds is generated by uncertainty in the availability of annual appropriations. If trust funds are to be used to pay for LTS, a secondary issue is how to accumulate the trust fund. The estimated annual cost for LTS at Hanford is perhaps \$10 million. At current interest rates⁴ this would require a trust fund of \$195 million to be self-sustaining. That amounts to 11% of Hanford's annual budget (FY02) if funded on a one-time basis. However, the estimated 50 years of remaining Hanford cleanup could ease this burden through an extended *pay-in* period.

The concept of a pay-in period also has its analog in the financial assurance requirements of RCRA (40 CFR 264.143). The pay-in period under RCRA is the term of the initial RCRA permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. For RCRA interim status facilities the pay-in period was as long as 20 years. With a 50-year pay-in period, a sustainable Hanford LTS trust fund could be accumulated at the rate of \$2 – 3 million per year, not counting accumulated interest. That amounts to a more manageable 0.15% of Hanford's annual budget. The use of a pay-in period at Hanford would require near-term action on LTS at Hanford.

Trust funds also create Trustees, people with responsibility and accountability to see that trust liabilities are looked after. Assuming that USDOE and USEPA will be gone from the Site, state or community-based trustees will help assure monitoring, maintenance, and information management happen.

INTER-GENERATIONAL INFORMATION TRANSFER

USDOE guidance and the Nuclear Regulatory Commission (NRC) regulations assume that institutional controls persist only for 100 years beyond site closure. At Hanford that is 150 years from now. However, residual hazards at the Hanford Site will persist much longer than 150 years into the future. Thus one of the criteria for a technology for inter-generational transfer of information is that it must persist for multiple generations.

The need to develop tools to ensure information transfer to future generations is an identified LTS technology need⁵. A full range of technologies hasn't been identified and screened for usefulness (i.e., the technology development and deployment process isn't complete). Institutions are a form of technology, or technology systems. The site-specific circumstances at Hanford present the opportunity to use two proven institutional forms for inter-generational transfer of information about residual hazards: these are a national park/monument and a museum respectively.

Yellowstone National Park is the oldest national park in the world. It was designated in 1872 and, consequently, has endured for 129 years. Museums are an even more persistent type of institution. In the United States, the Peabody Museum of Archaeology and Ethnology at Harvard University, founded in 1866, has persisted for 135 years. Outside the United States, the British Museum was established in 1753 (and has persisted for 248 years). The longevity of both types of institutions is has been proven to outlast the 150-year period of active institutional controls at Hanford.

Both a national monument and a museum are potential institutions at Hanford. Together they could play a key role in inter-generational transfer of information.

The Hanford Reach National Monument was created by Proclamation on June 9, 2000⁶. It includes most of the Hanford Site within ½ miles of the Columbia River, and is the responsibility of the U.S. Fish and Wildlife Service. A later Executive Order directs that the portions of the Hanford Site with similar areas of interest should be managed in a similar manner⁷. The U.S. Fish and Wildlife Service and the USDOE are co-managing candidate lands, with the anticipation that much of Hanford will be added to the National Wildlife refuge system.

The 105-B Facility is located one mile from State Route 240, and 40 miles from Interstate 90. It is located near the northwest boundary of the Hanford Site, and just beyond the Hanford Reach National Monument boundary. This location has the twin advantages of being both being easily accessible, and “guarding” the northwest access to Hanford.

The 105-B Facility is the only Manhattan Project building listed on the National Register of Historic Places. The facility has also been declared a National Historic Mechanical Engineering Landmark, a National Civil Engineering Landmark, and awarded the Nuclear Historic Landmark Award. Also, the Advisory Council on Historic Preservation recommended that Congress list the facility as a National Historic Landmark. It is uniquely suited for incorporation into the Hanford Reach National Monument, and for preserving and transferring information about residual hazards between generations.

The USDOE completed an engineering evaluation/cost analysis (EE/CA) to evaluate alternatives to address an interim removal action at the 105-B Reactor Facility⁸. Removal action alternatives were analyzed for a 10-year time period were considered, and 75 year options were also analyzed. It is anticipated that within this 10-year time frame the USDOE would determine whether or not to preserve the B Reactor as a museum. The EE/CA alternatives were One, No Action; Two, Surveillance and Maintenance; and Three, Hazard Mitigation for Public Access Along a Tour Route.

The 105-B Facility has exceeded its expected original design life and structural upgrades would likely be necessary for long-term use as a museum. The scope and costs for upgrades of the building and ventilation stack are being studied.

The cost of full hazard mitigation to allow public access over the next 75 years has been estimated at \$41 million, versus \$13 million for interim safe stabilization (without public access). The difference in these costs alone would seem to preclude selection of the alternative of hazard mitigation for public access. However, the potential use of the B Reactor as a museum would justify additional investment. A museum is one of the few institutions proven to persist across hundreds of years. The designation of a B Reactor museum would provide the state of Washington and other stakeholders with more confidence in Hanford LTS.

A general concept for inter-generational transfer of information incorporates both the Hanford Reach National Monument and the B Reactor could include:

- Visitor centers for the Hanford Reach National Monument located adjacent to the major highway access to Hanford, at the northwest side (B Reactor) and southeast side (City of Richland), respectively.
- Integration of a B Reactor museum into the northwest entrance to the National Monument.
- Inclusion of information on residual Site hazards into both the B Reactor and City of Richland visitor centers as one element of a multi-disciplinary Hanford Reach National Monument interpretative center.
- Independent endowment of a B Reactor museum, to ensure that the visitor center maintains exhibits about residual hazards independent of the annual appropriation for the National Monument programs.

The B Reactor museum would be a repository for Site-related information. It would be redundant to other official record archives, but it would be the “active” archive that would keep residual hazards in the public eye. Also, the archive with associated endowment funding would provide incentive for future scholars/researchers to “mine” and publish information. The proposal for independent funding of the museum comes back to the issue of trust funding.

The B Reactor can be integrated with the Hanford Reach National Monument within the next 10 years. Otherwise, actions may be taken that would preclude its use. The B Reactor is a unique historical structure that would be an anchor attraction to maintain interest in the Hanford Site and its hazards. The state views a B Reactor museum as an important component for inter-generational transfer of information, and is consistent with USDOE’s responsibilities for historic preservation.

CONCLUSIONS

Trust funds are commonly used to provide financial assurance for non-federal facilities. Federal agencies are always exempted from financial assurance requirements because federal agencies can’t become insolvent. However, it is the availability of funding that concerns the state of Washington. The history of funding active cleanup, most recently the proposed presidential cleanup budget for FY2002, indicates that states should question the availability of annual appropriations for LTS. An extended pay-in period for the Hanford Site would ease the burden of establishing a Hanford LTS trust fund.

Inter-generational transfer of information is a critical consideration at Hanford because of the long-lasting hazards. Information on residual hazards can be used to avoid accidental intrusion into engineered waste disposal sites. The Hanford Reach National Monument and the B Reactor museum fall into the class of institutions that could endure for the long term. The state of Washington endorses their use for LTS. Long-term funding will be an issue for inter-generational transfer of information. Again, independent funding could mitigate state concerns about this issue.

FOOTNOTES

¹Carl Bauer and Katherine N. Probst. Long-Term Stewardship of Contaminated Sites, Trust Funds as Mechanisms for Financing and Oversight. Discussion Paper 00-54. Resources for the Future, December 2000.

²47 Federal Register No. 67, pg. 15042. April 7, 1982.

³Senate Okays Hanford Cleanup Money. Tri-City Herald, July 20, 2001.

⁴Yield on 10-year Treasury bill as of Dec. 28, 2001.

⁵"Long-Term Stewardship Needs Assessment and Technology Baseline". Unpublished draft on Idaho National Engineering Laboratory web site.

⁶President Clinton's proclamation establishing the Hanford Reach National Monument. June 6, 2000. 65 Federal Register 114, pages 37252 - 37257.

⁷Memorandum on the **Hanford Reach** National Monument. Weekly Compilation of Presidential Documents, Monday, June 12, 2000, Volume 36, Number 23, pages 1324-1325.

⁸Engineering Evaluation/Cost Analysis for the 105-B Reactor Facility. DOE/RL-2001 -09, Rev. 0. June 2001. United States Department of Energy, Richland, WA.