



HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

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US Environmental
Protection Agency
Washington State
Dept. of Ecology

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Doug Shoop, Manager
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Brian Vance, Manager
U.S. Department of Energy, Office of River Protection
P.O. Box 450 (H6-60)
Richland, WA 99352

Dear Mr. Shoop and Mr. Vance,

Background

Since its establishment in 1994, the Hanford Advisory Board (HAB) has repeatedly provided input and advice related to funding for the Hanford cleanup. Through the years, the HAB has grown increasingly concerned about the inadequacy of funding resulting in delay of important cleanup projects in many cases by multiple decades. Many of Hanford's hazardous buildings and storage facilities are 50-70 years old. Delays add to overall costs to the cleanup both because of the large amount of money spent on maintenance, and because degradation from delay increases the risk of significant accidents. With funding at amounts below budget request, paying these significant added costs further reduces the amount of funding available for cleanup.

There are many examples:

- On May 9, 2017, a partial collapse was discovered at one of the PUREX storage tunnels, which was filled with highly-radioactive waste, requiring urgent work and diversion of funds to address and deal with the collapse.
- Analysis of the second PUREX tunnel indicates it is also unsound and at risk of collapse, and it too must be urgently stabilized. This will divert funds from other planned and essential work, and increase the difficulty and cost to remediate this waste.
- The U.S. Department of Energy Richland (DOE-RL) Manager was quoted by the Associated Press on June 15, 2017 as saying that other aging facilities at Hanford analogous to the tunnel also pose a risk.
- The entire process of retrieving waste from double-shell tank AY-102, which leaked from its inner shell, involved 500,000 hours of labor over three years, 24 months of field work, five months of retrieval, and 30,000 entries into the tank farms, all at a cost of about \$100 million. The loss of the tank's million-gallon capacity greatly limits the amount of available double-shell tank space and may slow the retrieval of waste from at-risk and aging single-shell tanks. New underground waste storage tanks may yet have to be built, at a cost estimated in the hundreds of millions of dollars.
- Washington River Protection Solutions, in a report released on July 13, 2017, predicts that the remaining life of the secondary liner of tank AP-102 could be as little as four years to as much as 26 years. There's no reason to believe that other double-shell tanks of that same vintage are any more robust and having the waste out of most double-shell tanks even in 26 years (just seven years after the Waste Treatment Plant is scheduled to be fully operational) seems doubtful at this point.

- A recent Engineering Evaluation/Cost Analysis for the REDOX canyon concluded that the REDOX Complex buildings/structures are structurally deteriorating, resulting in increasing levels of contamination being observed in some areas which may intensify as the facilities continue to degrade. This condition, if not addressed for other facilities in a timely manner, would present an imminent threat to human health and the environment.

These and many other hazards at Hanford will only increase with time as the facilities continue to age and degrade. We have been fortunate so far that the impacts from Hanford incidents such as those cited above have been localized. Though the cleanup has certainly reduced many potential risks, there are still a number of accident scenarios that could have substantial on-site and off-site impacts, with the costs to respond to and remedy the impacts from a radioactive release likely running into the hundreds of millions or billions of dollars.

Naturally, the high-risk projects are the most costly to achieve. Tank waste is by far the most costly thing to remediate, and it will take many more decades to complete. Failing infrastructure may not allow us to complete the tank waste cleanup before a serious or catastrophic event occurs. The tanks are 30 to 50 years past their design life. At least one tank is currently leaking and others may have recently leaked. Any type of seismic event may result in tank failure that would be almost impossible to mitigate before widespread contamination to the groundwater and river occurs, along with threats to the health and well-being of the workers assigned to clean it up.

Hanford is in a dangerous and destructive cycle in terms of its funding. The amount of funding required to maintain Hanford's aging facilities, site infrastructure and surveillance requires a substantial amount of funding, roughly \$600-\$700 million per year. This funding does not include direct cleanup work removing, treating & storing Hanford's radioactive and chemical waste. For direct cleanup work to continue on pace to meet TPA milestones, Hanford's compliant budget request must be fully funded. When Hanford's compliant budget request is not fully funded, the results are delays to cleanup and increased risks for the workers, the public and the environment.

DOE-RL is making progress on several critical cleanup priorities – the demolition of the Plutonium Finishing Plant; the movement of highly radioactive sludge from a fuel storage basin near the Columbia River; the transfer of nearly 2,000 capsules of cesium and strontium from pool storage to dry storage; and the remediation of highly radioactive soil from beneath a hot cell in the 300 Area. Each of these projects – when completed – will remove significant risk to workers, the public and the environment. Even as important as these projects are, each took longer than necessary because of serious constraints on funding.

When Hanford received nearly \$2 billion in Recovery Act funding in 2009-2011, DOE demonstrated that it could accomplish substantial cleanup and risk reduction in a relatively short period of time. However, the Recovery Act funding was available for a two and a half year period only, and DOE was forced to lay off many workers who were specifically trained for high-risk clean-up activity. A similar infusion of additional and predictable funding is necessary to offset the risks posed by the increasingly urgent degradation of Hanford's aging facilities and infrastructure.

It should be noted that the Governors of the States of Washington and Oregon on May 18, 2017 sent a joint letter to President Trump, Energy Secretary Perry and OMB Director Mulvaney requesting that the final budget proposal for Hanford include sufficient funding to accelerate the safe and efficient cleanup of the nuclear waste. The Governors noted the PUREX tunnel collapse "should serve as an urgent reminder of the challenges in cleaning up the Hanford site that require a rededication of attention and resources in order to ensure progress continues moving forward."

Advice

DOE is encouraged to:

- Propose to Congress and the Office of Management & Budget a steady ramp up of Hanford's yearly cleanup budget and ask for the identified \$4 billion per year for five years needed to achieve near-term cleanup. It is the only way to help avert a major catastrophe, reduce overall costs and risks to workers, the public and the environment.

- Ensure planning for contingency funding at a national level, so that when an incident occurs – such as a leaking double-shell tank or the PUREX tunnel collapse at Hanford – a range of potential mitigation and response costs can be offset through these funds, rather than impacting already planned and budgeted cleanup work.
- Develop an emergency plan, with funding identified for the contingency of a major tank failure. One million gallons of highly radioactive waste outside of its containment would require an immediate and highly challenging response.
- Secure additional funding for the tank waste program that will be designated to complete design work and address technical issues in order to commence construction of the Waste Treatment Plant (WTP) High Level Waste Facility years ahead of schedule.
- Provide additional funds to establish new storage capacity for tank waste.
- Provide sufficient funding to allow for startup of Direct Feed Low-Activity Waste (DFLAW) by 2022.
- Continue funding for the safe storage of the cesium and strontium capsules in long-term dry storage.
- Share the proposed Analytical Building Blocks and the Project Baseline Summary with the public during future Hanford site budget development processes.

Sincerely,



Susan Leckband, Chair
Hanford Advisory Board

This advice represents HAB consensus for this specific topic. It should not be taken out of context to extrapolate Board agreement on other subject matters.

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