



HANFORD ADVISORY BOARD

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

Advising:

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US Environmental
Protection Agency
Washington State Dept. of
Ecology

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April 18, 2019

Brian Vance, Manager
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Brian Vance, Acting Manager
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Richland, WA 99352

Re: FY2021 Budget Priorities

Dear Mr. Vance,

Background

Hanford cleanup faces major challenges in the decades to come. Progress in meeting Hanford cleanup objectives has been made by effective teamwork among the Department of Energy (DOE), the regulators, Hanford contractors, and the dedicated, skilled Hanford workforce. However, the Hanford Advisory Board (HAB, Board) is concerned that the cleanup mission is severely impacted by the combination of chronic budget shortfalls, impacts from unanticipated events, and a drastically expanding estimate of the lifecycle resources required to complete it.

The HAB has repeatedly expressed significant concern over shortfalls in Hanford cleanup budget levels. The Board has consistently advised the local DOE offices to request and to support compliant funding levels to prevent these delays, additional risks, and increased costs. A compliant budget is urgently needed to provide the level of funding that meets all Tri-Party Agreement (TPA) milestones and obligations. The appropriated budget for Hanford typically does not meet "compliant budget" levels required to meet TPA milestones (Reference 1).

Despite the unanticipated and serious nature of the PFP contamination release and technical issues with the PUREX Tunnels during FY 2018, DOE has developed, implemented, and, in some cases, completed the necessary tasks to resolve these issues and re-focus on planned TPA cleanup objectives. However, the incurred costs and schedule impacts from these and unanticipated future setbacks compound the challenge of completing Hanford cleanup legal commitments identified in the TPA.

The recent issuance of the Hanford Lifecycle Scope, Schedule, and Cost Report (Reference 2) is particularly concerning. This report indicates that the remaining Hanford cleanup and initiation of site long-term stewardship (LTS) is now anticipated to cost between \$323

billion and \$677 billion, and work is expected to continue through this century and beyond. The Lifecycle report indicates that required annual Hanford funding for both the low- and high-range cases must increase from the current \$2.5 billion funding levels to approximately \$4 billion beginning in FY2020. This required annual funding will ultimately peak in future years at values ranging from \$9 billion to \$16 billion, respectively. Receiving appropriation for even the low-range annual funding estimates will be extremely challenging, thereby putting the cleanup mission in further jeopardy. These estimates are dominated by projected costs for liquid tank waste stabilization and disposition, which account for approximately \$221 billion and \$518 billion of the total Lifecycle costs for the low- and high-range estimates.

The HAB views the combined lack of compliant budget appropriations, the unanticipated problems at Hanford, and the extreme increase of estimated funding levels identified in the Lifecycle cost report with great concern. These collectively put Hanford cleanup plans and many of the currently established TPA milestones in serious jeopardy. The HAB anticipates these factors will likely add years to the cleanup mission, increase risks to the environment, workforce, and public and significantly increase the total cost of Hanford cleanup. They will also result in additional discussion about reducing standards or potentially conducting a lesser quality cleanup.

In this environment, enhanced public engagement is critical to cleanup success. The Environmental Management Site Specific Advisory Board (EM SSAB) chairs issued a joint letter (Reference 3) to Assistant Secretary of Environmental Management (EM) Anne White, emphasizing the importance of community engagement and public input and involvement in cleanup activities and priorities. These challenging conditions demand an open, cooperative, and transparent working arrangement between the HAB and the Tri-Party Agreement agencies to be successful.

The HAB Values Statement (Reference 4) clearly defines the HAB's high-level priorities governing its actions and interactions. We believe adherence to these values is critical to the success of the Hanford cleanup mission. These values in particular involve protecting the Columbia River, the health of people who rely on the Columbia River, and the health and safety of the Hanford workforce.

In a letter sent to the HAB (Reference 5), Assistant Secretary White responded to the previous HAB Advice for FY2020 Budget Priorities (Reference 1), reiterating her commitment to a number of crucial cleanup activities, including:

- preparation for cesium and strontium capsule removal from wet to dry storage,
- transfer of K Basin sludge to the Central Plateau,
- pump-and-treat remediation of contaminated groundwater,
- tank waste retrieval, and
- timely operation of the Waste Treatment and Immobilization Plant (WTP).

Each of these items was identified in prior HAB budget priority lists, and we appreciate that they are also considered EM priorities. These items continue to be priority issues for the HAB, but there are a number of additional activities the HAB believes need priority attention from DOE going forward. The HAB has identified the following FY2021 budget priorities to support Hanford cleanup activities. These items are not listed in a particular order, and the list does not diminish the need for DOE to pursue all Hanford cleanup activities addressed in the TPA milestones.

In the past, the HAB has struggled with how DOE has responded to our budget advice. There has been a lack of specificity in addressing our identified priorities. Therefore, in addition to the following HAB cleanup priorities, the HAB is advising DOE to respond to our advice using a new format which will assist the HAB in determining how DOE will specifically address each budget priority item.

Advice

In order to facilitate a better understanding of how the HAB's advice compares with DOE's budget priorities:

- The Board advises DOE to provide the following information to the Board and public:
 - existing regulatory drivers and TPA milestones that must be completed during this Fiscal Year, and those that require significant progress this year in order to meet milestones in future years,
 - priorities and planned accomplishments for this budget year,
 - anticipated 2021 budget needs for a compliant budget, and
 - a description of the process DOE and its contractors utilize to identify, mitigate, and manage potential risks.
- The Board advises that the DOE response include completion of the attached matrix (Table I) to address information for each of the HAB budget priorities identified below.
- The Board advises DOE-RL and DOE-ORP to provide more detailed budget information, including project baseline summary numbers, a breakout for each project baseline summary to show major spending categories, budget control points, analytical building blocks, and integrated priority lists for both Hanford field offices to the HAB and regulators as DOE develops its annual budget submittal to Office of Management and Budget. This detailed information allows the Board, the public, and regulators to more effectively weigh in on budget priorities.

The following are specific FY2021 Budget Priorities identified by the HAB, and each requires sufficient appropriated funding levels to be accomplished:

- **Tank Waste Storage and Remediation**
 - **Safe Storage of Tank Waste:** Continued monitoring, surveillance, and maintenance activities necessary to ensure the safe and environmentally compliant storage of tank waste.
 - **Vapor Engineered Exposure Controls (Worker Safety):** Completion of testing, selection, and implementation of the most effective measures to address worker safety vapor issues.
 - **Construction and Operation of DFLAW & Related Facilities:** Continue activities to complete and start-up all facilities necessary to achieve DFLAW hot commissioning by December 31, 2023.
 - **Design & Construction of the Waste Treatment Plant:** Continue design and

construction activities that support hot start of the Waste Treatment Plant by December 31, 2033.

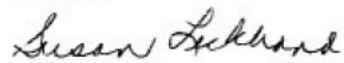
- **Retrieval and Closure of Single Shell Tanks (SST):** Continue retrieval of waste from the SST tank farms and define the processes required for the closure of the related Waste Management areas.
- **Maximize Tank Waste Storage Capacity:** Continue planning, design, and implementation of solutions to provide additional tank waste capacity in order to assure timely, safe, and environmentally compliant storage, until tank waste treatment is available. These activities must include adequate funding for the following:
 - **242-A Evaporator Operation:** Restart and evaporator campaigns to reduce the liquids stored in the Double Shell Tanks.
 - **Additional Tank Waste Storage Capacity:** Obtain additional tank waste storage capacity to include tank design and accelerated permit processes (ref Advice # 284).
- **Central Plateau & River Corridor**
 - **River Corridor Cleanup Activity:** Contamination and groundwater cleanup requires sustained efforts to protect the Columbia River and the health of people and wildlife using the shorelines and the environment.
 - **Maintain and Expand Groundwater Pump & Treat Program:** Expanded Pump & Treat operations are necessary for the 100B/C area (see HAB Advice #296) to mitigate chemicals (chromium) and radiological contamination (strontium, cesium) in that area.
 - **324 Building:** Continued progress is required to achieve successful cleanup, the eventual removal of the contaminants, and demolition of the building.
 - **Waste Encapsulation and Storage Facility (WESF) Containing Strontium and Cesium Capsules:** Completion of work is required for establishing the containers, casks, and above-ground storage facility for these capsules.
 - **100 N Chemical Reaction Barrier (Apatite Barrier):** Fully implement the apatite barrier to prevent strontium soil contamination in this area from affecting wildlife and migrating into the Columbia River.
 - **K Basin Sludge:** Contaminated sludge from the operation of K Reactor must be moved into dry storage and then moved into interim storage in the repurposed T-Plant canyon.
 - **Plutonium Finishing Plant (PFP):** Complete PFP work, including removal of facilities and equipment down to slab-on-grade, sampling of below-grade soil contamination, and installation of groundwater monitoring.
 - **216-Z-9 Trench and 241-Z-361 Settling Tank Located in 200-PW-1:** Increased efforts are required for adequate characterization, removal, treatment, and disposal of these plutonium-rich wastes. This is necessary to reduce environmental and worker risks due to extended cleanup timeframes for these wastes.
 - **Transuranic (TRU) Waste:** Sustained efforts are required to safely remove large quantities of miscellaneous suspect waste stored in the burial grounds and

to safely process, repackage, and characterize the TRU portion of the waste for shipment to the Waste Isolation Pilot Plant (WIPP).

- **Complete 100 Area Records of Decision:** Funding to complete these documents is needed so remediation budgets to complete the remaining river corridor cleanup actions can be established.
- **Initiate Characterization of SW-2 Burial Grounds:** These burial grounds contain a wide range of waste – some of which is both long-lived and highly mobile. Characterization work, which has been repeatedly delayed, is necessary to determine what parts of the burial grounds need to be remediated.
- **Site-wide Activities**
 - **Expanded Public Involvement:** Include activities that provide information and gather public input, as follows:
 - Fully support the HAB, utilizing a facilitation contract structure that provides flexibility to adapt to shifting schedules and canceled meetings;
 - Provide necessary resources to support regional meetings, including at least one regional HAB meeting, continuation and expansion of the new Hanford Regional Dialogue meeting format in multiple locations, regional Hanford budget meetings, and regional meetings on emerging topics;
 - Reinstate travel reimbursement for HAB alternates, as supported by a joint Oregon-Washington letter on October 26, 2017;
 - Implement technological improvements for all Hanford public meetings (including HAB meetings) to allow recordings to be published online and provide new opportunities to improve public interaction; and
 - Establish tangible investments in the next generation work force that will be involved in Hanford's cleanup, oversight, and management.
 - **Improved Hanford Site Infrastructure:** Establish an improved site infrastructure program that can be accomplished at a reduced cost compared to prior years, thus allowing more of the appropriated Hanford budget to be employed for actual Hanford cleanup objectives.
 - **Improved Emergency Planning Program:** Improve upon the existing program to address recently identified shortcomings. For example, during the shelter-in-place incident after the tunnel collapse at PUREX Tunnel #1, workers sheltered at the site could not access food, water, or hygiene facilities.
 - **Hanford Workforce Planning and Development:** Establish and implement programmatic improvements to ensure that Hanford contractors address development and maintenance of a robust Hanford workforce pipeline, including internships, mentoring, diversity, succession planning, advancement/transfer opportunities, and recognition/rewards programs.

The HAB looks forward to your assessment of the budget priorities and identifying how we can collectively continue to work together in successfully accomplishing the Hanford cleanup mission.

Sincerely,



Susan Leckband, Chair
Hanford Advisory Board

Enclosure

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.

cc: David Borak, Designated Federal Officer, U.S. Department of Energy, Headquarters
Alexandra Smith, Manager, Washington State Department of Ecology
David Einan, Manager, U.S. Environmental Protection Agency, Region 10
Monica McEaddy, Environmental Engineer, U.S. Environmental Protection Agency
James Lynch, Deputy Designated Federal Officer, U.S. Department of Energy Office of
River Protection & Richland Operations Officer
Oregon & Washington Delegations

References:

1. Hanford Consensus Advice #297, "FY2020 Hanford Budget Priorities," dated June 7, 2018.
2. Letter, Doug Shoop (Manager, DOE-RL) to David Einan (U.S. EPA) and Alexandra Smith (WA State Department of Ecology), Letter 19-AMB-0005, "Completion of the 2019 Hanford Lifecycle Scope, Schedule, and Cost Report," dated January 31, 2019.
3. Letter, EMSSAB (Chairs and Vice-Chairs) to Anne Marie White (Assistant Secretary for Environmental Management), Re: Community Engagement at EM SSAB Sites, dated November 27, 2018.
4. Hanford Advisory Board Values Statement, dated November, 2012.
5. Letter, Anne Marie White (Assistant Secretary for Environmental Management) to Susan Leckband (HAB Chair), Re: HAB Concerns with Proposed Hanford FY2020 Budget, dated May 29, 2018.

Table I. Budget Priority Item Assessment

Item #	HAB Budget Priority Activity Description	Current TPA Requested Completion Date? (xx/yy/yyyy)	Covered in Which Specific PBS Budget Section/Milestone #? (#w.x.y.z)	Level of Funding in FY2021 Budget Submittal (\$M)	Additional Comments
1	Safe Storage of Tank Waste				
2	Vapor Engineered Exposure Controls (Worker Safety)				
3	Construction and Operation of DFLAW and Related Facilities				
4	Design and Construction of the Waste Treatment Plant				
5	Retrieval and Closure of Single-Shell Tanks				
6	Maximize Tank Waste Storage Capacity				
7	River Corridor Cleanup Activity				
8	Maintain and Expand Groundwater Pump & Treat Program				
9	324 Building				
10	Waste Encapsulation and Storage Facility (WESF) Containing SR & CR Capsules				
11	100-N Chemical Reaction (Apatite Barrier)				
12	K Basin Sludge				
13	Plutonium Finishing Plant (PFP)				
14	216-Z-9 Trench and 241-Z-361 Settling Tank Located in 200-PW-1				

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15	Transuranic (TRU) Waste				
16	Complete 100 Area Records of Decision				
17	Initiate Characterization of SW-2 Burial Grounds				
18	Expanded Public Involvement				
19	Improved Hanford Site Infrastructure				
20	Improved Emergency Planning Program				
21	Hanford Workforce Planning & Development				