



November 1, 2022

U.S. Department of Energy
Attn: Jennifer Colborn, HMIS
P.O. Box 450, H5-20
Richland, WA 99352
Comments submitted via email: 5YearPlan@rl.gov

RE: Public Comment Period for Hanford 5-Year Plan

U.S. Department of Energy:

Thank you for the opportunity to submit comments on the Hanford Site 5-Year Plan priorities.

It is our understanding that the 5-Year Plan document is sent to the US Department of Energy's Office of Environmental Management (DOE EM) to contribute towards the EM 10-Year Vision and that public comments submitted to DOE on the 5-Year Plan are sent to DOE EM as part of the input for the complex wide 10-Year Vision document.

Hanford Challenge is a non-profit, public interest, environmental, and worker advocacy organization located in Seattle, WA. Hanford Challenge is an independent 501(c)(3) membership organization incorporated in the State of Washington with a mission to create a future for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy. Hanford Challenge has members who work at the Hanford Site. Other members of Hanford Challenge work and/or recreate near Hanford, where they may also be affected by hazardous materials emitted into the environment by Hanford. All members have a strong interest in ensuring the safe and effective cleanup of the nation's most toxic nuclear site for current and future generations, and who are therefore affected by conditions that endanger human health and the environment.

We appreciate the effort to gather input on the 5-Year Plan; however, the public involvement process on this document could be further improved in the future, including earlier and more meaningful involvement of the broader public, tribal nations, and regulators. It could also be more clearly communicated how input will be shared with DOE EM towards the development of the DOE 10-Year Vision.

In general, we are aligned with the high-priority focus on DFLAW and vitrification of tank waste; however, we disagree with spending money on alternatives to the established path for glassifying waste through the Waste Treatment Plant, particularly the multi-pronged effort to push grout as an alternative waste form. We have many concerns with grout as a waste form. The history of past attempts to use grout is outlined in this paper "[Why Grout Failed at Hanford: Chronology of the Failed Grout Program](#)," released by Hanford Challenge.

Please take the following comments into consideration in your planning of cleanup work from FY23-27 and for the next iteration of your five-year plan.

- **Increase Collaboration:** DOE should involve the public, tribal nations, and regulators to gather input about cleanup priorities and concerns, prior to publishing its 5-Year Plan documents. Ensure effective government to government negotiations with the tribal nations. Make it clear how input received on the plan will be sent to DOE headquarters and how it will be used in the development of the EM 10-Year Vision.
- **Connect the Plans:** Make it clear how the 5-Year Plan relates to legally enforceable cleanup milestones in the Tri-Party Agreement and Consent Order; the Lifecycle Scope, Schedule and Cost Report; the budget development process; and the Adaptive Milestone Approach. The connections between these plans and approaches are not clear. Do a better job of clearly communicating how these plans are connected and how they influence cost and schedule projections for Hanford cleanup.
 - **For Example: Milestone Cheat Sheet:** It would be helpful in future iterations of the five-year planning process, to include a cheat sheet of milestones for the five-year period that is up for discussion. This cheat sheet would need to use plain language to help facilitate public understanding of the coded language of the milestone series.
- **Use the Plan to Increase Funding:** Use the 5-Year Plan and the EM 10-Year Vision to make the case for increased cleanup funding, and show how increased cleanup budgets avoid delays and reduce risks for people, water, wildlife, and natural resources. Don't make the cuts before they are made for you. Projecting flat funding in the plans only encourages the President and Congress to spend less on cleanup. Give them a reason to spend more and connect the 5-Year Plan with the Lifecycle Scope, Schedule, and Cost Report projections that show a need for dramatic increases in annual funding in the coming decades to keep cleanup on track.
- **Increase Transparency:** Increase the level of detail provided in public involvement materials. In addition to providing the Draft Hanford 5-Year Plan Placemat that highlights certain activities planned for each fiscal year, provide a comprehensive document that outlines all of the planned activities. This would be in addition to the fact sheets listed on the 5-Year Plan webpage. The following descriptions in the placemat need to be more plainly stated: "Initiate construction of advanced modular pretreatment system" and "Complete construction of advanced modular treatment system." DOE must be completely transparent and forthright with the public about the critical activities outlined in the 5-Year Plan. Information inconsistencies may cause the public to lose trust in the agency.
 - *For example*, the 5-Year Plan omits any discussion of the "Test Bed Initiative" (TBI). DOE should not ship tank waste into the city of Richland. Hanford waste should be treated onsite. In the public meeting on October 20, 2022, DOE verbally responded to a question asking if the TBI is proceeding, by saying that the TBI is still on track. By omitting the TBI from the plan, DOE is implying that this test has been canceled.
- **Improve Plain Language/Accessibility of Public Materials:** We appreciate that DOE organized the 5-Year Plan documents on one webpage. However, many of the documents, including the fact sheets, have so many technical terms that the basic information is lost. Please look to the Public Involvement Committee for input in the future on increasing the accessibility of information presented.

- Input on Fact Sheets:
 - The [TSCR fact sheet](#) should more clearly state that it will be treating tank waste. A bullet point currently reads: “Treats liquid waste to provide low-activity waste feed for the WTP.” Please change it to say liquid *tank* waste.
 - Add a “Next Steps” heading and information to fact sheets including expected timelines that are updated regularly if the timeline changes. For example, the K-Area reactor cocoons timeline and demolition.
 - In general, please include information about waste characterization and disposal pathway in your fact sheets. For example, in the [Pump and Treat fact sheet](#) add information about where contamination that has been removed in the ion-exchange columns is disposed.
 - In the [Hanford Cleanup Overview](#) please correct the overly simplified statement about pump and treat implying that all contamination that goes through the system is rendered harmless through chemical treatment. It is also unclear that some contamination is already getting into the river, this should be more plainly stated.
 - In the [324 Building fact sheet](#) please add information about the depth of contamination, timing of project, what monitoring takes place to determine that waste hasn’t migrated, how hot the waste is, how long DOE knew or suspected that contamination had spilled in B-cell, and where the waste will be disposed.
 - In the [A/AX fact sheet](#) we appreciate the acknowledgement of the vapor hazard and supplied air requirement. Please include TPA milestones related to tank retrievals.
 - In the [Tank Farms fact sheet](#), please use a number format that the public is more used to seeing as opposed to 0.055-1.265 million gallons. The leaking tank commentary should be expanded to include suspected leakers.
 - The [WTP fact sheet](#) should include a summary of technical issues and efforts underway to fix them.
 - The 2021 5-Year Plan included a [Plutonium Finishing Plant \(PFP\) fact sheet](#). This should have included acknowledgment in the PFP fact sheet of the serious and preventable worker exposures and contamination release due to the open-air demolition of the PFP. Acknowledging mistakes and lessons learned publicly is a critical step to ensuring the same mistakes are not repeated in the future.

- **Delay Tank Closure:** Delay tank closure at Hanford, especially at the C Farm tanks, until the safe and effective treatment capacity to immobilize Hanford’s tank waste in glass has been achieved. Delaying tank closure also offers time for the development of technologies that may allow for the retrieval of more tank waste.

- **Focus on Safe and Effective Tank Waste Vitrification, not Grout:** Make glass safely. Prioritize work on Direct Feed Low Activity Waste. Continue solving problems to be ready for high-level waste vitrification. There is a concerted effort to bring grout to Hanford as an alternative to vitrifying Hanford’s tank waste. Hanford tank waste is high-level waste, and should not be relabeled or reconfigured in violation of applicable law, such as the Nuclear Waste Policy Act. See Hanford Challenge’s paper, [Relabeling and Grouting Tank Waste at Hanford: Frequently Asked Questions](#), April 2021. The idea of grouting tank waste is being sold as faster, cheaper tank waste treatment — however, Hanford’s history with grout tells a story which at the very least begs extreme caution in entertaining this faster, cheaper narrative. The history of the failed grout program is outlined

in this paper "[Why Grout Failed at Hanford: Chronology of the Failed Grout Program](#)," released by Hanford Challenge. In short, we disagree with the plan to grout Hanford tank waste to save time and money on Hanford cleanup. The appropriate and legally-required disposal pathway for high-level waste (HLW) is vitrification and disposal in a HLW repository. Shortcuts are not acceptable.

- **Add DFLAW Water Use Plan:** Add a critical activity that explains how you are addressing the incredible amount of water DFLAW will be using and generating. According to diagram HNF-67171, Rev 1, "A Day in the Life of Direct Feed Low Activity Waste (DFLAW)," located at: https://www.hanford.gov/files.cfm/Place_mat_v10_Rev_1-01.png, DFLAW will be using 3.5 million gallons of water a day in order to treat 8,000 gallons of tank waste a day. Of this, 6 million gallons a year goes to the Effluent Treatment Facility (sheet 3 of the 5-Year Plan shows 30 million gallons in 5 years¹). Please ensure that your 5-Year Plan includes information that describes where all of this water ends up (895 million gallons/year based on 70% efficiency). Please also include DOE's goal for the end disposal point of effluents and secondary wastes in the [5-Year Plan](#) and the [DFLAW diagram](#). The starting point is identified but the end processes and disposal pathway are omitted for secondary waste. Please plainly state where USDOE plans to treat and dispose of the liquid effluents and secondary wastes.
- **Accelerate Work to Remove Cesium and Strontium Capsules to Dry Storage:** Prioritize activities that speed up the work to safely remove the Waste Encapsulation and Storage Facility's cesium and strontium capsules to dry-cask storage. This is one of the top safety issues in the DOE complex and requires immediate, urgent attention. This work needs to be completed as soon as possible. Include a plan to analyze the degradation of concrete storage pools following removal of capsules and share this data to increase safety everywhere that concrete and radiation are interacting.
- **Safely Complete Removal of Contaminated Soil Beneath the 324 Building:** Prioritize activities that allow for the 324 Building B-cell contamination to be removed safely and on schedule, and maximize worker protections. Ensure that funding levels allow for characterization of waste as it is removed to ensure that no long-lived contaminants end up in the Environmental Restoration Disposal Facility. Don't cut corners, high-level waste belongs in a deep geologic repository.
- **Prioritize Vapor Engineered Exposure Controls:** Complete the testing, selection, and implementation of the most effective measures to safely address worker exposure to toxic chemical vapors in Hanford's tank farms as outlined in the September 2018 settlement agreement regarding tank vapors. The centerpiece of this is an engineered control system that treats tank vapors in a thermal process and filtered before release to the air. While this process is undergoing evaluation and installation, ensure that workers are provided effective respiratory protection using supplied air respiratory protection while working in the tank farms to protect workers from both immediate and chronic health effects and illnesses. Effectively protecting workers from vapor exposures is an essential priority while operations surrounding disturbance and removal of tank waste increase.
- **Plan for Expanded High-Level Tank Waste Storage:** Prioritize activities that plan for and implement safe additional storage of Hanford's high-level tank waste so that this space is available

¹ "Complete LERF/ETF DFLAW upgrades and facility operations, treating up to 30 million gallons of secondary liquid waste." Page 3, Hanford 5-Year Plan: <https://www.hanford.gov/flipbook/Hanford%20Site%205-Year-Plan/>

before more Hanford underground storage tanks fail. This should include building new double-shell tanks as soon as practicable.

- **Restore Onsite Treatment Capacity for Waste Treated at Perma-Fix Northwest:** Prioritize the restoration of onsite treatment capacity to return treatment of Hanford's waste to the Hanford site. See [our 2020 report](#) outlining concerns with Perma-Fix NW.
- **Prioritize Remediation of Deep Vadose Zone Contamination:** Prioritize remediation of the deep vadose zone, especially below Hanford's tank farms where an estimated one million gallons or more of high-level nuclear waste has leaked. The vadose zone contaminants will continue to migrate through the soil re-contaminating areas that were previously cleaned up. Remediating the deep vadose zone won't happen without a plan, funding, and an ongoing commitment to accomplish the work. This work must be prioritized in order to protect future generations.
- **Prioritize Groundwater Remediation:** Protect the Columbia River, future generations, and the environment by prioritizing groundwater remediation.
- **Plan for Emergencies:** Increase readiness to quickly move in infrastructure necessary to pump a leaking tank. Plan now for future, inevitable leaks. As we have seen in the past several years with the identification of leaked contamination beneath the 324-Building, the PUREX Tunnel 1 collapse, the [RL Matrix](#) identifying 27 potential sites needing stabilization to avoid contamination release, and the B-109 tank leak, contingency funding and better planning would provide a welcome buffer to respond quickly to these issues. Request funding to plan for a future that will contain emergencies and unplanned crises to ensure a nimble response that does not redirect money away from other important cleanup work.
- **Develop a Tank Leak Response Plan:** Develop a comprehensive long-term plan to address Single-Shell Tank leak detection, characterization, mitigation, cleanup, and communication.
- **Protect Worker Health and Safety:** Ensure that all plans include robust, worker-informed health and safety protections and effective training. As institutional knowledge is lost as workers retire, it is essential that training programs find ways to record and transmit institutional knowledge that is critical for keeping workers, the public, and the environment safe.

Thank you for considering our comments.

Sincerely,

A handwritten signature in black ink that reads "Nikolas F. Peterson". The signature is written in a cursive, slightly slanted style.

Nikolas Peterson, Executive Director
Hanford Challenge