



November 10, 2023

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. We are an independent 501(c)(3) organization incorporated in the State of Washington since 2008 and registered in Oregon. Our mission is 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 information shared at the meeting was geared towards insiders, not the general public. As a public interest group, we appreciated the opportunity for Q&A with the agencies at the public meeting on October 24, 2023, but it is hard to imagine that information being accessible to someone who is not more familiar with Hanford cleanup terminology, acronyms, and shorthand. In the future, please make efforts to use plain language to explain the cleanup sites that are being referenced. The public involvement process on this document could be further improved with earlier and more meaningful involvement of the broader public, Tribal Nations, and regulators. We appreciate efforts to clearly communicate how input will be shared with DOE EM towards the development of the DOE 10-Year Vision. It would be helpful to include on the website that public comments are sent directly to DOE EM by the local DOE offices.

In general, we are aligned with the high-priority focus on Direct Feed Low Activity Waste (DFLAW) and vitrification of tank waste. We do have concerns with the HLW facility, given the multitude of issues that were flagged by whistleblowers and others. There needs to be an independent third-party review before operations to ensure taxpayer dollars are not being misspent on a flawed project.

We noticed that there is no mention of the Test Bed Initiative or plans to test grout on tank waste. Our understanding is that efforts to test grout on Hanford tank waste are still on the schedule in the next five years. If grout is still being tested, then it should be on the plan for full transparency with the public. To be clear, 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 FY23-28 and for the next iteration of your 5-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. Continue to clarify in writing 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. This information should be put into an easily understandable format for the public in an effort to clearly communicate 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 help facilitate public understanding of the coded language of the milestone series with plain language explanations.

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.

We stated this in 2022, and we will state it again. 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.” This language is not clear and needs to be updated to connect it to DFLAW and that it is the next iteration of Tank-Side Cesium Removal System (TSCR). 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). Hanford Challenge believes that DOE should not ship tank waste into the city of Richland. Hanford waste should be treated onsite. 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 Community Outreach and Engagement Committee of the Hanford Advisory Board for input to improve the accessibility of information presented. We note that many fact sheets have been updated since 2022, yet none of the suggestions we provided in our 2022 comments were incorporated into the updated fact sheets.

- 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-West Area reactor cocoon timeline and demolition.
 - In general, please include information about waste characterization and disposal pathways 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 will be disposed of.
 - 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.
 - We appreciate updates to the [324 Building fact sheet](#); however, it could be improved further. 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. It should also be noted when the agencies will solicit public input on the revised plans. Right now, it reads as if it is a done deal.
 - 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, update for 2023 and add it to the fact sheets linked to the 5-Year Plan webpage.

- 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 and be updated to 2023.
- 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: C Tank Farm is not mentioned in the 5-Year Plan; however, we want to reiterate that we believe tank closure at Hanford should be delayed, 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 DFLAW. 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 2021 paper, [Relabeling and Grouting Tank Waste at Hanford: Frequently Asked Questions](#). 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 is vitrification and disposal in a high-level waste 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 the [diagram](#) HNF-67171, Rev 1, "A Day in the Life of Direct Feed Low Activity Waste (DFLAW)." 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 [2022-2027 5-Year Plan](#) showed 30 million gallons in 5 years¹, but the new 5-Year Plan removed a reference to an amount). Please ensure that your 5-Year Plan is updated to include 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 “Day-in-the-Life” [DFLAW diagram](#). The starting point is identified but the end processes and disposal pathway are omitted for secondary waste. Please plainly state where DOE plans to treat and dispose of the liquid effluents and secondary wastes.

¹ “Complete LERF/ETF DFLAW upgrades and facility operations, treating up to 30 million gallons of secondary liquid waste.” Page 3, 2022-2027 Hanford 5-Year Plan (the number was removed, not updated in the 2023-2028 Hanford 5-Year Plan: <https://www.hanford.gov/flipbook/Hanford%20Site%205-Year-Plan/>)

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 a transparent process that incorporates public input and formal consultation with Tribal Nations as the plan is revised for safely removing the more extensive contamination under 324 Building. 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. As DOE works with the Environmental Protection Agency (EPA) and its 324 Building contractor on revised cleanup plans, please:

- **Protect Worker Health and Safety:** We're on board with revising the cleanup plan to better protect workers. Please make sure the process for changing the plan is open and transparent.
- **Protect the Environment:** The 324 Building is close to the City of Richland and the Columbia River. We're interested in hearing more about EPA's idea to dig up some waste before shutting down the project and resuming the cleanup later. If it can be done safely, it would be great to remove some contamination now to protect the groundwater and Columbia River.
- **Keep up regular involvement of EPA:** We find it troubling that EPA was not involved earlier to help solve the cleanup problems at 324 Building. We rely on the experts at EPA to protect the environment and public interest. We do appreciate that you are now regularly meeting with EPA, but they should have been included sooner.
- **Stop hiding, start sharing:** We find it really frustrating that DOE chose not to share information about problems with this project until nearly a year after the first signs of trouble. Please explain to the public why we were left in the dark on this issue for so long. Moving forward, please provide regular, meaningful updates for the public. For example, you could share information via email updates, social media posts, and at public information briefings. You should also provide opportunities for questions and comments.
- **Ensure formal consultation with Tribal Nations:** Given Hanford is located in a culturally significant area and in close proximity to many Tribal Nations, please make sure Tribal Nations are being formally and meaningfully consulted on 324 Building cleanup plans.
- **Involve 324 Building workers and the public:** Please be more proactive about getting input as you rework options for 324 Building cleanup. We don't want a plan to be presented like a done deal with public involvement essentially becoming 'check the box' at the end. Involve everyone along the way.
- **Safely dispose of 324 Building contamination:** We are concerned about the plan to bury 324 Building's contamination at the onsite Environmental Restoration Disposal Facility. Please pursue a transparent process for reevaluating the disposal of this waste, given new estimates from Hanford contractors about the larger volume and level of radiation. We echo concerns voiced by Yakama Nation about the nature of this waste.

Prioritize Vapor Engineered Exposure Controls: Continue on the path of implementing 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 (and the extension of time agreement) regarding tank vapors. The centerpiece of this agreement is an engineered control system that treats tank vapors in a thermal process and filtered before vapors are released to the air. In the interim, 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 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. There are many reasons why Hanford should treat its own waste onsite rather than at Perma-Fix Northwest. Hanford is a more suitable location for treatment due to a higher level of transparency and accountability, remote location further away from populated areas, further from the groundwater, ability to avoid the risky practice of transporting thousands of cubic meters of dangerous waste on public roadways, and a workforce that is highly trained, qualified, and certified. See our 2020 report, [“Risky Business at Perma-Fix Northwest: The Inside Story on Hanford’s Off-Site Radioactive Treatment Facility,”](#) outlining concerns with Perma-Fix Northwest.

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 deep 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.

Use Contaminated Soil for Fill at Environmental Restoration Disposal Facility: The Representative Analogous Site Coordinating Agency Liaisons (RASCAL) team developed a new operable unit 200-IA-1, that is comprised of shallow, "easy-to-clean" waste sites. We support this and other proactive methods that use “dirty dirt” as fill instead of “clean dirt” for waste disposal at the Environmental Restoration Disposal Facility.

Clarify Where Surface Barrier and Enhanced Soil Cover Materials will be Sourced: Where is DOE sourcing material for surface barriers mentioned in the 5-Year Plan? How are you ensuring protection of culturally significant and sacred sites for Native American Tribes in the planning for this work. Please also clarify the purpose of surface barriers for the tank farms mentioned that still require retrieval.

Prioritize Groundwater Remediation: Protect the Columbia River, future generations, and the environment by prioritizing groundwater remediation.

Remove “Placement of the apatite barrier” from FY26 Risk Reduction activity: There is no final Record of Decision for the 100-N operable unit; therefore, “placement of the apatite barrier” has not been chosen

as the selected remedy. Wording for this item should be changed to, “Initiate remediation of waste sites as per final Columbia River corridor RODs.”

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.

Improve Your Tank Leak Response Plan: Work with stakeholders and through formal consultation with Tribal Nations to improve your tank leak response plan to be a more 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. A key piece of this is ensuring that there are active efforts to improve safety culture and promote a work environment where employees feel safe and supported in raising concerns and sharing dissenting opinions without fear of reprisal.

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