September 16, 2016

Rich Buel
U.S. Department of Energy
Richland Operations Office
PO Box 550, MSIN A7-75
Richland, WA 99354

Dear Mr. Buel,

Hanford Challenge appreciates the opportunity to review and provide comments on the Proposed Plan for Remediation of the 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2 and 100-HR-3 Operable Units, (DOE/RL-2011-111, Revision 0).

Public Involvement

Hanford Challenge appreciates the effort taken to develop a question and answer document in collaboration with the Hanford Advisory Board’s Public Involvement Committee to answer questions related to the following information, and looks forward to continuing a similar process during future periods of document review. This document provided essential context and explanation for Board members and would have been even more helpful if it had been available on the web.

The following information was discussed in the Q&A document, which provided useful context and history during this comment period:

- Where contamination in the 100-D/H area originated during plutonium production, how contamination spread in the environment, and how it is monitored.
- How the interim decision making process works, what interim decisions were made at 100-D/H, and when those decisions went into effect.
- What interim cleanup work has been completed, and when cleanup will be finished.
- What cleanup work remains that is discussed in the Proposed Plan.
- What future cleanup work will remain after the 100-D/H ROD proposed work is done, such as reactor dismantlement and restoration, and what the estimated timeframe is for that work.
- How 100-D/H may be used as a template for other 100-Area decisions.

Hanford Challenge also appreciated the extension of the comment period to September 16, 2016, which allowed Hanford Advisory Board discussion of the 100-D/H Proposed Plan to help inform our comments.
Though the in-person discussions provided helpful context for the comment period, Hanford Challenge believes information that was exchanged could have been better utilized in public information materials. Hanford Challenge believes the Tri-Party Agencies would have been more successful in communicating information about the Proposed Plan and been more transparent about the proposed remediation by doing the following:

- Using plain language explanations of technical terminology such as Monitored Natural Attenuation (doing nothing, leaving waste in the ground) and Institutional Controls (fences and other means to keep people out).
- Providing a more straightforward discussion of the long timeframes for reaching remediation goals, which are outlined in Table 6 of the Proposed Plan (page 45) and more accessible information about the length of time Institutional Controls will need to be maintained during radioactive decay, such as including the number of years next to the date.
- Making the information gathered in the Q&A document accessible to the public via the web, presentation or other means.
- Using plain language to clearly explain that the only contaminant of concern that is removed during pump and treat of groundwater is chromium, and that the “treatment” of Strontium-90 and nitrates is solely dilution and redistribution.
- Providing an explanation of why Institutional Controls are needed.
- Providing more straightforward information about what cleanup work and monitoring requires human effort and money versus leaving waste in place and doing nothing.

**Preferred Alternative**

Hanford Challenge supports the decision to move forward with completing the remediation of the 100-D/H area through the choice of the Preferred Alternative (Alternative 3) with the following changes.

Contamination in burial ground 118-D-3:1 deeper than 15 feet is proposed to be left in place, yet this burial ground, according to Oregon Department of Energy, “consists of multiple trenches which received operations waste from the DR Reactor, and has the potential to contain spent nuclear fuel elements. Of particular concern are concentrations of nickel-63, which contain as much as 47 times the allowable risk (and which exceed EPA standards by 16 times) and are expected to take around 400 years to decay to acceptable levels. We recommend that additional excavation be planned for this waste site so as to retrieve this concentrated waste.” Hanford Challenge shares Oregon DOE’s concern and recommendation.

Hanford Challenge would also like to note our concern that information about this waste site was not easily accessible, and therefore raises concerns about what other useful information may be missing from documentation within the proposed plan. Transparency and accessibility are key components of public involvement. Public trust is eroded when information about contaminants and proposed cleanup remedies is unclear and difficult to find as well as when
provided documentation seems to obscure the timeframe in which remediation goals will be met.

Hanford Challenge echoes concerns raised by Oregon Department of Energy regarding the following waste sites, where sufficient data was not available in supporting documents to assure that no action is the proper choice: 100-D-108, 100-D-109, 100-H-38, 100-D-47, 116-D-47, 116-D-2, 116-D-4, and 100-H-7. Based on the discrepancies noted by Oregon Department of Energy, Hanford Challenge can’t endorse a no action alternative for these waste sites.

As the Hanford Advisory Board states in its September 2016 advice: “A number of metals and other elements are contaminants of potential concern that have been detected above the 90th percentile Hanford Site background level, above risk-based maximum levels, or above maximum contaminant levels. As the Proposed Plan states ‘based on the results of the groundwater risk evaluation, nitrate, strontium-90, total chromium, and hexavalent chromium are present in groundwater at levels that pose unacceptable risk if no actions are taken.’ The pump and treat alternatives are aimed solely at chromium reduction.” Hanford Challenge does not believe that dilution and redistribution should be relied upon for non-chromium co-extracted contaminants and that DOE should continue to look for ways to remove and treat the non-chromium contaminants prior to reinjection.

Hanford Challenge recommends the Hanford Advisory Board’s advice be followed to modify Alternative 3 by:

- Ensuring the removal and treatment of the co-extracted non-chromium contaminants that exceed maximum contaminant level goals before treated water is re-injected.
- Incorporating the maintenance of the pump and treat system into the final alternative to allow the system to be restarted to ensure groundwater and surface maximum contaminant level goals continue to be met.
- Applying the Washington State SMS (Chapter 173-204 of the Washington Administrative Code [WAC 173-204]) as applicable or relevant and appropriate requirements (ARARs) for the Columbia River shoreline.

Hanford Challenge also recommends that DOE strategically remove concentrated mass of isotopes in the deep vadose zone before adopting Institutional Controls and MNA for the following waste sites, which will take 48-187 years to reach remediation goals. The waste sites listed below include the name of the waste site (# of years, year remediation goal will be met). These waste sites were found on page 45 of the proposed plan in Table 6.

1. 100-D-18 (50 years or 2066)
2. 100-D-48:1 (77 years or 2093)
3. 100-D-49:1 (77 years or 2093)
4. 100-D-49:2 (101 years or 2117)
5. 116-D-1A (187 years or 2203)
6. 116-D-1B (187 years or 2203)
7. 116-D-7 (109 years or 2125)
8. 116-DR-1&2 (132 years or 2148)
9. 118-D-6:3 (104 years or 2120)
10. 118-D-6:4 (127 years or 2143)
11. UPR-100-D-4 (77 years or 2093)
12. 116-DR-9/100-D-25 (48 years or 2064)
13. 100-D-46 (187 years or 2203)
14. 100-H-11 (92 years or 2108)
15. 100-H-12 (92 years or 2108)
16. 100-H-14 (92 years or 2108)
17. 116-H-1 (94 years or 2110)
18. 116-H-7 (82 years or 2098)
19. 118-H-6:3 (82 years or 2108)
20. 118-H-6:6 (82 years or 2108)

Hanford Challenge doubts that institutional memory will effectively carry forward a practice of monitoring waste sites and maintaining institutional controls for the 48-187 years that will be required before remediation goals are met for these waste sites. Strategically removing contaminants in these waste sites would more effectively protect future generations.

As proposed plans and other documents come forward for public review, Hanford Challenge urges the TPA agencies to continue working with the Hanford Advisory Board to improve the accessibility, clarity, and distribution of its public involvement information materials and associated documents.

If you have any questions or comments about our recommendations, please contact Liz Mattson of my staff at 206-292-2850 x21 or lizm@hanfordchallenge.org

Sincerely,

Tom Carpenter
Hanford Challenge, Executive Director