STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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April 15, 2019 19-NWP-067

Shannon Ortiz, Lifecycle Project Manager
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: H5-20
Richland, Washington 99352

Re: Completion of 2019 Hanford Lifecycle Scope, Schedule and Cost Report (LCR) – Federal Facility Agreement and Consent Order (Tri-Party Agreement) Milestone M-036-01I

Dear Shannon Ortiz:

The Department of Ecology (Ecology) is providing comments on the 2019 Hanford Lifecycle Scope, Cost and Schedule Report (LCR). We appreciate the opportunity to review the LCR, which is intended to reflect all actions necessary for the United States Department of Energy (USDOE) to fully meet all applicable environmental obligations.

The LCR is the basis for USDOE's annual budget process. It is foundational for informational briefings to affected Tribal Governments and Hanford stakeholders, as well as discussions with the United States Environmental Protection Agency (EPA) and Ecology.

Ecology has three main areas of concern, which are outlined below.

1. The 2019 LCR methodology is new, and provides a low and high range of cost estimates. The high range is overly cautious in that it unreasonably assumes that all risks will be realized. The high range, with its many layers of uncertainty, generates ballooned cost estimates that obfuscate, rather than illuminate, the facts needed to make difficult Hanford decisions.

   The high-range cost estimate is not credible because:

   - It includes unsubstantiated "risk factors." Several of the risk factors are expressed as "high" in direct conflict with representations that USDOE has made in Consent Decree matters, Tri-Party Agreement (TPA) negotiations, TPA-required meetings, or in the System Plan.

- It represents the first time USDOE used a Monte Carlo calculation, which was not discussed with the regulatory agencies prior to its application. We believe that USDOE incorrectly used the Monte Carlo method, by using low-probability risks to inflate the high-range cost. Because we do not believe it results in a credible or meaningful high-range cost profile, Ecology requests that USDOE strike the Monte Carlo analysis.

2. The 2019 LCR relies on vague information on project costs, scope, and schedule. For example, the costs to operate the Waste Treatment Plant increased, and estimated cleanup costs now span a wide cost range. The 2016 LCR Hanford cleanup completion date was 2060; in the 2019 LCR, the date is extended to 2078.

   The 2019 LCR does not advance understanding of when cleanup will be completed and how the Tri Parties can or should adjust milestones, scope, or schedule to find efficiencies. Before the next LCR is written, we would like to reach agreement on a revised methodology to be incorporated in it.

3. We support increased federal investment now to clean up highly radioactive buildings and underground tanks before they fall apart. A great benefit of the LCR is risk identification, the largest component being completion of the tank waste cleanup. Washington State and Ecology will continue to invest our resources to reduce risks to all stakeholders.

Our detailed comments on the LCR are enclosed. We look forward to additional discussion and sharing of information. If you have any questions, please contact me at alex.smith@ecy.wa.gov or (509) 372-7905.

Sincerely,

Lois Dalman
for

Alexandra K. Smith
Program Manager
Nuclear Waste Program

Enclosure

cc: See page 3

cc electronic w/enc:

Dave Einan, EPA
Brian Vance USDOE
Jon Perry, MSA
Michael Turner, MSA
ERWM Staff, YN
Ken Niles, ODOE
Suzanne Dahl, Ecology
Theresa Howell, Ecology
Anne Knapp, Ecology
John Price, Ecology
Cheryl Whalen, Ecology
Environmental Portal
Hanford Facility Operating Record
MSA Correspondence Control
USDOE-RL Correspondence Control

cc w/enc:

Matt Johnson, CTUIR
Jack Bell, NPT
Laurene Contreras, YN
Susan Leckband, HAB
Hanford Administrative Record
NWP Central File

Washington State Department of Ecology
Nuclear Waste Program Comments
2019 Hanford Lifecycle Scope, Schedule and Cost Report

Comment #	Page, Section Paragraph	Comment
1.	General	The high-range cost estimate is not credible because: • It includes unsubstantiated "risk factors." Several of the risk factors are expressed as "high" in direct conflict with representations that USDOE has made in Consent Decree (CD) matters, Tri-Party Agreement (TPA) negotiations, TPA-required meetings, or in the System Plan. • This report is the first time USDOE used a Monte Carlo calculation, which was not discussed with the regulatory agencies prior to its application. USDOE has incorrectly used the Monte Carlo method by using low-probability risks to inflate the high-range cost. Ecology requests that USDOE strike the Monte Carlo analysis.
2.	Costs	Revise Table ES-1 to separately show operating costs for Direct Feed of Low-Activity Waste (DFLAW), which will start in 2023. The footnote 4 that lumps the DFLAW operating costs in with the rest of Waste Treatment Plant (WTP) doesn't provide sufficient detail. The full WTP operations are scheduled for 2036 start-up and it would be informative to show the 13 years of individual DFLAW operations as a separate number.
3.	Financial Assurance	The milestone requires costs "for completing work at each of the operable units and **RCRA TSDs** . . ." [emphasis added]. Please provide the closure and post-closure cost estimates for all Resource Conservation and Recovery Act Treatment, Storage, and Disposal Facilities. This report, as required in proposed Hanford permit condition II.H (see below) will fulfill the need for Hanford contractors to provide cost estimates for closure and post-closure. Even though USDOE is exempt from these regulations, the contractors are not (See WAC 173-303-620(1)(c)(ii) – (Effective April 28, 2019). II.H Financial Assurance The provisions of WAC 173-303-620 are not applicable to USDOE as the owner and operator of the Hanford Facility. The obligations under WAC 173-303-620 (1)(c), (3) and (5), to provide cost estimates for facility closure and post closure monitoring and maintenance will be deemed satisfied upon USDOE's compliance with the Hanford Federal Facility Agreement and Consent Order requirement (as currently contained in the M-36 Milestone series) to produce an annual scope, schedule, and cost report. [WAC 173-303-620]
4.	p. ES-4, Table ES-1	Table ES-1, item Radioactive Liquid Tank Waste Stabilization and Disposition (PBS ORP-0014) is such a large number (estimated cleanup costs = $221.4 billion - $518.1 billion), that it should be broken down into the next level Work Breakdown Structure (WBS).

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Comment #	Page, Section Paragraph	Comment
5.	p. ES-4. Table ES-1	Table ES-1, item Major Construction – Waste Treatment Plant (PBS ORP-0060) is such a large number ($18.5 billion – $30.3 billion) that it should be broken down into the next level Work Breakdown Structure (WBS).
6.	p. 1-8, Section 1.4	Our current understanding is that the Plutonium Finishing Plant cleanup and demolition to slab-on-grade will not be completed until FFY 2020. If this is the case, please change the completion date from FY 2019 and include a projected cost to finish the project in FFY 2020.
7.	p. 1-9, Section 1.4	Please provide the bases for the risk analysis used in Appendix D. For example, Appendix D indicates the use of Oracle Crystal Ball software and "Estimate Uncertainty." However it is unclear what parameters were used, and which inputs were estimates. Please provide the information used to support model inputs.
8.	p. 3-3, Section 3.2	Please add 100-D/H (July 2018 decision), 100-B/C to Work Element "River Corridor Cleanup" Scope Description in Table 3-3.
9.	p. 3-4, Section 3.2	In Figure 3.4 there is a gap from FFY 2029-31 for item "Maintain Safe and Compliant Facilities & Waste Sites." We believe that funding requirements will still apply in those years, and should be added back in. Similarly, the pause in funding for River Corridor Cleanup (and Cost and Schedule Uncertainty) should be removed and show continuous work.
10.	p. 3-6, Section 3.4	Please replace language in fourth bullet with: "While the Hanford Natural Resource Trustee Council's trajectory is to complete the injury assessment and subsequent Restoration Compensation Plan by 2024, the natural resource damage assessment is still underway with undetermined costs to be expended over the next 5 years."
11.	pp. 4-8 and 4-9, Table 4-3	Please list the remediation work for the 100-D/H (decision made July 2018) and 100-B/C (decision yet to be made) waste sites.
12.	p. 4-16, Section 4.6	For the assumption, "Planned characterization of the vadose zone below the high-level waste (HLW) tanks will be sufficient to evaluate remedies for protection of groundwater." Please add reference to the Project Breakdown Structure that will do the planned characterization.
13.	p. 5-4, Section 5.0 and Table 5-1	The second paragraph states that the overall objective is 2071, which conflicts with the Table 5-1 date to complete the closure of all double-shell tank farms by 2052. Please reconcile the text that is in conflict with the Table.

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14.	p. 5-4, Section 5.0, third par.	Correct this. We believe this statement is inaccurate, speculative, and misleading as written. Because the CD and TPA are independent documents, a change to one does not automatically mean a change to the second. Here, changes were made to the consent decree, but no changes have been made to the TPA to address this issue. We suggest the following revised text: "2010 Consent Decree milestone dates were established at the same time as changes to TPA milestones. Consent Decree milestones were extended in an Amended Consent Decree issued March 11, 2016. The Court extended the start of initial operations milestone date for the WTP to December 31, 2036. Potential changes to corresponding TPA milestones have been discussed between ORP and Ecology but no changes have been agreed to as of the date of this report." [delete remaining text]
15.	pp 5-11 and 5-12, Section 5.4	Last bullet on 5-11, continues on top of 5-12. This is not in the baseline case, and should be removed as an assumption.
16.	p. 5-12	This statement is inconsistent with USDOE's National Environmental Policy Act of 1969 Record of Decision (ROD) that says no decision has been made on disposition of cesium and strontium capsules. The best available assumption, based on the Tank Closure and Waste Management Environmental Impact Statement itself, is that cesium and strontium capsules will be processed through the WTP. Change text accordingly.
17.	pp. 5-11-and 5-12, Section 5.4, Note #7	Delete text "For planning purposes, the final disposition of HLW melters is assumed to be at the Integrated Disposal Facility. Plans will be updated, as needed, after a ROD that addresses HLW."