

March 21, 2021

Daina McFadden  
Washington State Department of Ecology  
3100 Port of Benton Blvd  
Richland WA 99354

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Department of Ecology  
NWP - Richland

Dear Ms. McFadden:

RE: Comments on the proposed LERF and 200 Area ETF permit modification (Comment Period February 22, 2021 to April 8, 2021).

The proposed permit modifications would add a liquid retention basin to LERF including construction of a fourth LERF basin, Basin 41, and adding a connection from the primary transfer line from WTP EMF to LERF Basin 41.

Permit Addenda modifications are planned to include increased storage and treatment capacity for LERF from the added Basin, added references regarding Basin 41 for waste acceptance, and ***process information*** related to the LERF Basins.

Following are some comments/questions.

1. Recent public comments objected to Ecology's acceptance of DOE's piecemeal, out of date, informal, mass balance information<sup>1</sup> in fulfillment of TPA Milestone M-052-50,<sup>2</sup> which was supposed to: Submit to Ecology, as a secondary document, a Mass Balance Flow from Tank Farms to Low Activity Waste Pretreatment Capability to Low Activity Waste to Effluent Management Facility to Recycle to Tank Farms and to LERF/ETF. Ecology in response to comments noted that "while Ecology accepted the milestone as complete, it is important to acknowledge that DOE's letter **committed to continued work on the mass balance...**" This answer points out that Ecology was aware that the work was not really completed, and that the milestone submittal was accepted by Ecology based on "promises" of future work. This is contrary to quality assurance requirements, for which a completed document is the only satisfactory work product. Ecology's acceptance of shoddy, incomplete, disjointed, work is disappointing and it can have adverse effects on future decisions and safety. It's very hard to know if the proposed capacity change and equipment addition is reasonable if you don't have a flow sheet and a mass balance.
2. Ecology further noted that "Ecology's permitting decision is not dependent on acceptance of the milestone [M-062-50] as complete. Therefore, Ecology is **not including the requested documents as part of this permit modification's administrative record.**"

<sup>1</sup> See 20-ECD-0057, COMPLETION OF TRI-PARTY AGREEMENT MILESTONE M-062-50, December 4, 2020.

<sup>2</sup> Response to Comments LERF/ETF Load-In Station Expansion/Backup Facility – Class 2 Permit Modification Dec. 15, 2020 to Feb. 13, 2021, Ecology Nuclear Waste Program Publication 21-05-009.

Ecology has declined to use what could have been relevant mass balance data. In contrast, I think the missing mass balance data has value as a source of information that could be used as a basis for informed public comment. The TPA administrative record is not restricted to items associated with specific permit decisions. I thought all TPA milestone work products were supposed to be provided in the TPA Administrative Record (AR). Can you please add these records to the AR as one file so that the public can see them? In particular, the M-062-50 record document should contain or provide links in the Administrative Record to the following:

- Waste Treatment and Immobilization Plant (WTP) Direct Feed Low-Activity Waste and Effluent Management Facility (EMF) mass balance information submitted but ORP in April 2017.
- Tank Side Cesium Removal mass balance information submitted by ORP in May 2019.
- Information provided by ORP employee Erik Olds, including revised information for EMF mass balance to the Liquid Effluent Retention Facility/Effluent Treatment Facility to Washington State Department of Ecology (Ecology) on March 25, 2020.

Also the briefing that was provided on April 13, 2020, and the subsequent briefing that was provided on October 27, 2020.

The March 25<sup>th</sup> information and both briefings should be included. These are not in the administrative record as far as I can tell.

3. I looked at the items in the proposed permit change package and was unable to find specific process flow diagrams with chemical concentrations and mass flow rates. It is hard to find a complete basis to underpin decisions. For example, RPP-IQRPE-50063, *IQRPE Design Assessment Report for LERF Basin 41*, has a corrosion assessment that relies on the “waste compatibility” section. The waste compatibility section refers to RPP-RPT-62215, 2020, *LERF Basin 41 Material Compatibility with Wastewater*. But RPP-RPT-62215 says the criterion is that the wastewater will meet acceptance criteria in HNF-3172. Nowhere does the documentation show the expected composition of effluent versus the HNF-3172 criteria. In addition, HNF-3172 only addresses two materials in the basin 41 system. Further, the recipe used in laboratory testing was based on out-of-date data. If Ecology had insisted that DOE correctly complete milestone M-062-50, we might have a better idea if the new wastewater recipes (including from the EMF) actually meet the corrosion criteria – or if the constituents were ever even addressed by those criteria. This is just one example. It appears the IQRPE omits EMF/SBS condensate information on corrosion.
4. Does the Delisting Petition need an upgrade? The Unit-Specific Permit Conditions refer on page Conditions.3 to state and federal delisting actions dating to 2005. A considerable

number of flowsheet and composition changes have occurred since then, including new compounds that are generated in the LAW melter off-gas, and concentrations of species that were not originally considered. What work has been performed to evaluate whether the delisting petition remains valid? When I look at the original application, the compositions did not include operation of the EMF, for example, and the vague nature of the compositions from WTP were thought to require *verification sampling*. Has the sampling plan for delisting verification been updated?

5. Lastly, the omission of a genuine, updated, integrated, process mass balance contributes to project risk and creates a future risk to the safety of Richland residents. “Breaking the WTP recycle loop” or disposing of difficult effluents off-site at Perma-Fix Northwest, in order to maintain WTP operations, is a likely scenario, given the lack of good planning information afforded by a genuine mass balance. The result will be an attempt to push risks and wastes into the Richland PFNW facility, which is hundreds of feet closer to the water table than the Hanford 200 Areas. See the link below for recently documented safety and regulatory problems at PFNW<sup>3</sup>. DOE should be required to treat all tank related waste on-site at Hanford, far from the public, where it belongs.

Thank you for considering these comments.

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<sup>3</sup><https://static1.squarespace.com/static/568adf4125981deb769d96b2/t/5fbde47518e72e5fdb9a8298/1606280319740/FINAL+PermaFix+Report.pdf>