



## OFFICE OF RIVER PROTECTION

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Director Bellon:

### MAY 29, 2019 LETTER REGARDING TANK WASTE RETRIEVAL AND TREATMENT PATHWAY AT HANFORD

I am writing in response to your letter on behalf of the Washington State Department of Ecology (the State or Ecology) inviting a discussion about the milestones for tank waste retrievals and treatment in the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement or TPA) and the Amended Consent Decree in *State of Washington v. Perry* (E.D. Wash. No. 2:08-cv-5085). As Ecology notes, the tank waste retrieval and treatment milestones in the TPA and the Amended Consent Decree face significant and persistent challenges that require the U.S. Department of Energy (DOE or the Department), Ecology, and the Environmental Protection Agency (EPA) to work together to “identify a holistic and realistic path forward for Hanford’s tank waste, one that addresses all aspects of the tank waste mission and, ideally, does not need to be revisited every few years.” In order to avoid revisiting these milestones every few years, a holistic approach also requires recognition of the substantial technical and fiscal challenges inherent in the Hanford cleanup.

Although DOE does not agree with all of Ecology’s statements in the letter, DOE welcomes the opportunity to continue our engagement in a broad and systematic discussion with the goal of reaching a comprehensive and durable plan for the Hanford cleanup mission. DOE appreciates Ecology’s willingness to address the difficult challenges ahead, and DOE hopes that this process can lead to tangible improvements and substantial progress.

#### **I. Background**

The milestones for retrieval of waste from tanks and its subsequent treatment were first established more than 30 years ago. Although Ecology’s letter describes the later history of those milestones in the TPA and the Amended Consent Decree, it does not describe the factors that led to that history. Retrievals of tank waste were delayed by many factors such as reduced worker efficiencies due to the mandatory use of supplied air, challenges with the deployment and operation of retrieval equipment, and adverse weather conditions. As Ecology’s letter points out, DOE notified the State in 2010 that DOE had identified major technical issues with the Waste Treatment and Immobilization Plant’s (WTP) Pretreatment (PT) and High-Level Waste (HLW) facilities. DOE anticipates that the issues with the PT facility will be resolved by August of this

year. As DOE has noted numerous times – including before the court during the litigation that led to the amendment of the consent decree, and since then – implementing the resolution of these technical issues will require the redesign and re-baselining of these facilities, which in turn will identify any increase in their costs.

## II. Current Status

Ecology's letter repeatedly asserts that DOE has tried to take "unilateral actions" and has made "unilateral decisions." For example, it states, "In 2018, USDOE made the unilateral decision to shut down the planned construction of the [Low-Activity Waste Pretreatment System] LAWPS facility and shelved its design." DOE disagrees with this characterization. The projected cost of the LAWPS facility had escalated dramatically, and there was concern that it may not be completed on schedule. DOE informed Ecology of this decision promptly, and Ecology did not object to the decision or suggest another approach instead of Tank Side Cesium Removal (TSCR).

The Department has kept Ecology informed of similar developments through regular communications—including the monthly and quarterly reports required by the Consent Decree, and DOE has engaged with Ecology early and often on unforeseen developments and how to address them. For example:

- On August 13, 2018, DOE provided Ecology with the final report of the U. S. Army Corps of Engineers (USACE) and two presentations from Bechtel National, Inc. (BNI)(18-ORP-0025). Earlier, DOE had noted in its February 2018 quarterly report that the USACE analysis had begun, and included a copy of the USACE scope of work. Additionally, DOE reported that it was considering an option to continue preservation and maintenance to the PT and HLW facilities for a period of 3 to 5 years while focusing efforts on bringing direct-feed low-activity waste into operation. Accordingly, DOE changed the status of several milestones for the HLW and PT facilities from "On Schedule" to "Under Analysis."
- Beginning in October 2018, DOE and Ecology have held regular collaborative meetings, known as the DOE/Ecology Leadership Forum, on the path forward for the tank waste mission. During these discussions, DOE and Ecology chartered a WTP HLW optimization team in December 2018, which has worked to provide a technical framework for the treatment of HLW.
- During these Leadership Forum meetings, DOE regularly briefed Ecology on the Analysis of Alternatives (AoA) process for HLW treatment starting in January 2019. Ecology provided comments on the proposed scope of work to the contractor team that is conducting the analysis, and DOE invited Ecology's technical staff to participate in the AoA in April 2019.

- DOE regularly communicated with Ecology – particularly Ecology’s air engineering staff – regarding the permit application for the exhausters used in the A and AX tank farms and DOE’s schedule for initiating retrievals in these farms before and after the application was submitted in February 2016. On January 28, 2019, DOE received a letter from its tank operations contractor, Washington River Protection Solutions (WRPS) that outlined the potential impacts to tank retrievals in the A and AX farms from Ecology’s delay in approving the application. DOE informed Ecology of this concern, including in a letter dated March 4, 2019,<sup>1</sup> and DOE continues to analyze this issue and its potential impacts.

### **III. March 2016 Amended Consent Decree**

All of the foregoing reports, discussions, and developments confirm the risks that were known by DOE, the State and the court at the time the Consent Decree was amended in 2016. None of DOE’s clean-up efforts at Hanford is without some degree of technical, environmental, operational, or other risk, which is why flexibility to pursue new technologies or operational solutions will be critical to a more effective approach at Hanford.

Notwithstanding the longstanding technical and other challenges facing the tank waste mission, DOE continues to make substantial progress. DOE completed retrievals in the C tank farm, and is working through the Waste Incidental to Reprocessing (WIR) process to close this tank farm. It completed retrieval of AY-102 in advance of the settlement agreement DOE entered into with the State regarding an administrative enforcement order. All major equipment is installed in WTP’s Low-Activity Waste (LAW) facility, and installation of the melter was completed ahead of schedule. The Documented Safety Analysis for the LAW facility was completed in 2018. WTP’s Analytical Laboratory and the facilities that constitute the “Balance of Facilities” have transitioned to startup and commissioning; 50 percent of the LAW facility has been turned over to startup and commissioning.

While there may be a concern that the Amended Consent Decree milestones may not be met, many of those deadlines remain far off in the future. Technical innovations that can streamline and improve the efficiency of waste disposal have occurred and are likely to continue.

### **IV. Response to State’s Proposal**

DOE appreciates the State’s inclusion of specific proposals regarding the System Plan negotiations and a holistic approach to the retrieval and treatment of tank wastes.

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<sup>1</sup> In a second letter dated April 16, 2019 (19-ORP-0002), DOE notified Ecology that uncertainties in environmental permitting, and specifically Ecology’s delays in issuing permits, jeopardize the Hanford cleanup. That letter reaffirmed that delays in issuing permits for tank retrievals, including air emission permits like the exhausters permit, affects DOE’s ability to meet Consent Decree milestones.

**Proposals regarding System Plans 8 and 9.** The State asserts in item (a) that there are “already-agreed to milestones associated with the A/AX tank farms, [direct-feed low-activity waste] DFLAW, selective liquid waste removal study, immobilized HLW and ion exchange storage and tank farm barriers.” The following summarizes DOE’s understanding of the agreements as to these milestones:

- A/AX tank farms – DOE agreed it would submit a closure plan for the A/AX tank farm, in which DOE is preparing for retrievals.
- DFLAW – DOE agreed to milestones for construction of infrastructure to support DFLAW (*e.g.*, the Effluent Management Facility, LAWPS, and Integrated Disposal Facility).
- Selective liquid removal study – DOE agreed to prepare a study of alternative methods and technologies for draining liquids from single-shell tanks; it has not committed to any milestones for removal of additional liquids from tanks.
- Immobilized HLW and ion exchange columns – DOE agreed to prepare a conceptual design report for storage of immobilized high-level waste for two years. The report would be prepared at the appropriate time to support HLW production. DOE agreed to negotiate a second milestone for preparing a conceptual design report on storage of spent ion exchange columns from TSCR.
- Tank farm barriers – These barriers have not been part of the System Plan 8 negotiations.

The State also proposes “[m]ilestones that will require USDOE to complete design and permitting of RCRA-compliant storage tanks that will support continued SST retrievals in accordance with the Consent Decree and TPA.” DOE agrees that as design progresses for the facilities necessary to complete the HLW mission, consideration may be given to building tanks that could be used for multiple purposes. Such an exploration must be undertaken with realistic expectations regarding funding, technical challenges, and schedules.

**Proposals regarding a holistic path forward.** The State lists six “needs” that any approach must meet. DOE’s response to those items is set out below. DOE believes that there are additional needs that a holistic approach must recognize. For example, such an approach must recognize that the cleanup of Hanford is complex and will continue to pose unanticipated challenges. Schedules and objectives set decades ago must incorporate flexibility and must be adjusted when, through no fault of Ecology, EPA or DOE, technical and fiscal realities prove those estimates to be unrealistic. One of the reasons that the milestones in the TPA and Consent Decree must be “revisited every few years” is that is very difficult to predict with high precision

the course of this challenging and complex cleanup. Another need is a reliable and timely permitting process for facilities critical to achieving retrieval and treatment milestones for tank waste.

1. **DFLAW Schedule.** The DFLAW treatment facility is on schedule to meet the milestones for the LAW facility in the Amended Consent Decree.
2. **HLW Treatment.** DOE has undertaken an AoA for HLW treatment to determine the best path forward.
3. **Single-Shell Tank Retrievals.** Subject to the receipt of necessary permits and authorizations from Ecology, DOE will continue retrievals in the A/AX tank farms starting in 2019. DOE proposed a TPA milestone that would require DOE to select in 2025 the next tank farm for retrieval so as to prevent a significant interruption in retrievals.
4. **RCRA Closure of Tanks.** DOE is pursuing "RCRA compliant closure" for the tanks in C farm and intends to continue discussions concerning RCRA and CERCLA integration for closure of the tank farms. DOE believes that closure of tank farms is impeded by the uncertainties and complexities in the special closure procedures established for tank farms in Appendices H and I of the TPA.
5. **Disposal of Tank Waste.** DOE will pursue paths for disposal of tank waste on and off the Hanford Site that meet regulatory requirements.
6. **Interim Measures.** DOE looks forward to discussions on additional interim measures beyond those that have already been established (*e.g.*, the tank integrity program), to ensure safe storage and management of tank wastes.

Funding considerations must be made based upon the appropriations process in Congress, which may impair the above, in addition to operational costs for the respective facilities.

On this basis, the Department is prepared to accept Ecology's proposal to commence broad, holistic negotiations. This is a far more reasonable and productive course than other alternatives, given the parties' joint recognition that amendments and modifications may be appropriate. Through these discussions, the Department expects that a continued partnership and collaboration with Ecology is most likely to result in the realistic and timely success of the Hanford clean-up mission.

DOE is currently undertaking the AoA with Ecology's involvement, and this should be a key starting point for the broader discussion the State has proposed. In April 2019, the contractor performing the AoA met with DOE and Ecology staff to begin the process. The AoA will:

- Provide analyses and results to inform DOE, Ecology, and other stakeholders.

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- Identify all viable alternatives to meet the needs of the tank waste mission and to reduce risks.
- Estimate the life-cycle costs of each alternative.
- Identify and quantify the risks and opportunities presented by each alternative, including the trade-offs among cost, schedule, and performance.

The AoA builds on the efforts of the DOE and Ecology HLW Optimization Team by analyzing the alternatives the team identified in its eight workshop sessions held between November 2018 and January 2019.

## V. Conclusion

As DOE continues to analyze numerous aspects of the path forward for the overall mission and the particular facilities at issue, DOE reserves all of its rights under the Consent Decree, 2016 amendment to the Consent Decree, the TPA, and applicable law, and DOE will consider all options available to the federal government. DOE will continue to consider both additional legal and operational concerns and will work with Ecology accordingly.

As described in this letter above, DOE and the State are and have long been engaged in productive, ongoing discussions regarding all of the above issues, including the AoA. If EPA, Ecology, and DOE are able to identify and agree on a holistic approach, it will need to be incorporated into the TPA and Amended Consent Decree, both of which prescribe processes for their amendment. The Department looks forward to joining those discussions with a comprehensive negotiation plan proposed to address the TPA and other matters as well.

If you have any questions, please contact me at (509) 376-7395.



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cc: A.K. Smith, Ecology