

6450-01-P

DEPARTMENT OF ENERGY

Amended Record of Decision for Offsite Secondary Waste Treatment and Disposal from the Hanford Site, Washington

AGENCY: Office of Environmental Management, Department of Energy.

ACTION: Amended record of decision.

SUMMARY: This is an amendment to the U.S. Department of Energy's (DOE) 2013 Record of Decision (ROD) for the *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington* (DOE/EIS-0391, December 2012) (TC&WM EIS). In accordance with DOE's implementing procedures for the National Environmental Policy Act (NEPA), DOE prepared a supplement analysis (DOE/EIS-0391-SA-03; SA), which evaluated DOE's proposal to transport and treat certain solid and liquid secondary wastes at licensed and permitted commercial treatment facilities off the Hanford Site. DOE also proposes to potentially dispose of some of these secondary wastes (after treatment) offsite at a licensed and permitted commercial disposal facility. This action would be implemented on an interim basis until such time as an enhanced onsite treatment capability is available for Direct-Feed Low-Activity Waste (DFLAW) operations (estimated to be approximately 10 years). This amended ROD addresses the differences in the planned management of secondary wastes from that addressed by the 2013 TC&WM EIS ROD (78 FR 75913; December 13, 2013).

ADDRESSES:

For copies of this amended ROD, the original ROD, subsequent amended RODs, the SA (DOE/EIS-0391-SA-03), the TC&WM EIS, or any related NEPA documents, please contact Mr.

Douglas Chapin, Hanford Site NEPA Compliance Officer, U.S. Department of Energy, P.O. Box 550, MSIN H5-30, Richland, Washington 99352; telephone: (509) 373-9396; or email,

Douglas.Chapin@rl.doe.gov. This amended ROD, the original ROD, subsequent

amended RODs, the SA, and the TC&WM EIS are also available on DOE's NEPA website at <https://www.energy.gov/nepa> and the Hanford website at <https://www.hanford.gov/index.cfm?page=1117&>.

FOR FURTHER INFORMATION CONTACT:

For further information about the TC&WM EIS, contact Mr. Chapin, as listed above. For general information on DOE's Office of Environmental Management (EM) NEPA process, contact Mr. William Ostrum, NEPA Compliance Officer, U.S. Department of Energy, Office of Environmental Management, 1000 Independence Avenue SW, Washington, DC 20585-0103; telephone: (202) 586-2513; or email, William.Ostrum@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

Background

In the TC&WM EIS, DOE analyzed 11 alternatives for the retrieval, treatment, storage, and disposal of tank wastes, followed by the closure of the single-shell waste storage tanks (SSTs) at the Hanford Site and three alternatives for waste management.¹ In the 2013 TC&WM EIS ROD, DOE selected Tank Closure Alternative 2B, which would, among other things: (1) retrieve 99 percent of the waste from the SSTs; (2) treat tank waste, including pretreatment of tank waste with separation into low-activity waste (LAW) and high-level radioactive waste (HLW); and (3) dispose of the vitrified LAW and secondary waste² and construct immobilized HLW (IHLW)

¹ The three other alternatives analyzed in the TC&WM EIS concerned Fast Flux Test Facility decommissioning, which is not the subject of this ROD.

² Secondary waste, as described in the TC&WM EIS, is generated as a result of other activities, *e.g.*, waste retrieval or waste treatment, that is not further treated by the WTP or supplemental treatment facilities and includes liquid and solid wastes. Liquid-waste sources could include process condensates, scrubber wastes, spent reagents from resins, offgas and vessel vent wastes, vessel washes, floor drain and sump wastes, and decontamination solutions. Solid-waste sources could include worn filter membranes, spent ion exchange resins, failed or worn equipment, debris, analytical laboratory waste, high-efficiency particulate air filters, spent carbon adsorbent, and other process-related wastes. Not all the secondary waste, volumes, or waste types described in the TC&WM EIS are encompassed by this amended ROD. Secondary wastes addressed in this amended ROD consist of LLW and MLLW.

interim storage modules to store the IHLW prior to disposal.³ The 2013 ROD also stated, “Tank waste treatment includes pretreatment of all tank waste, with separation into LAW and HLW. New evaporation capacity, upgrades to the ETF [Effluent Treatment Facility], new transfer lines and processing of both vitrified LAW and secondary waste for disposal are included in this decision.” For waste management, the 2013 ROD further stated, “DOE has decided to implement Waste Management Alternative 2, which includes disposal of LLW [low-level radioactive waste] and MLLW [mixed low-level radioactive waste] at IDF [Integrated Disposal Facility]-East from tank treatment operations.” This alternative was identified in the 2013 ROD as the environmentally preferred waste management alternative.

The Waste Treatment and Immobilization Plant (WTP), as analyzed in the TC&WM EIS, would start processing tank waste by sending it to the Pretreatment Facility, where it would be separated into HLW and LAW. The process would then send each of these waste streams to the HLW Vitrification Facility and the LAW Vitrification Facility, respectively, for further treatment. The WTP, as analyzed in the TC&WM EIS, also contained an analytical laboratory (LAB) and 22 other support facilities referred to collectively as the “balance of facilities” (BOF). When DOE issued the ROD in 2013, its plan was to start operation of all the WTP facilities at the same time. Due to technical issues with the WTP Pretreatment Facility and HLW Vitrification Facility, only the LAW Vitrification Facility, LAB, and BOF have been completed and are preparing for operations. To begin treating waste as soon as practicable, DOE decided to use the DFLAW approach, which is a sequenced approach that will treat a portion of the tank waste first. The decision to implement the DFLAW approach was included in an amended ROD (84 FR 424; January 28, 2019).

³ For the complete list of activities covered in the ROD, see 78 FR 75918.

Supplement Analysis of Offsite Treatment and Disposal of Hanford Secondary Waste.

As a result of projected increases in the volumes of secondary waste and the lack of sufficient secondary waste treatment capability and capacity on the Hanford Site once LAW Vitrification Facility operations begin using the DFLAW approach, DOE proposes to transport and treat certain secondary waste at licensed and permitted commercial treatment facilities that are located off the Hanford Site. In addition, DOE proposes to potentially dispose of some of these secondary wastes (after treatment) offsite at licensed and permitted commercial disposal facilities. This Proposed Action (both offsite treatment and potential offsite disposal) would be implemented on an interim basis until such time as an enhanced onsite treatment capability is available for DFLAW operations (estimated to be approximately 10 years). The annual estimated volumes of secondary waste that could be transported offsite for treatment and disposal would include:

- Approximately 8,300 cubic meters of LLW and MLLW (solid and liquid) would be treated at Perma-Fix Northwest (PFNW), a licensed and permitted commercial treatment facility in Richland, Washington, and disposed of at the IDF on the Hanford Site.
- Approximately 18 cubic meters of MLLW (solid and liquid) would be treated at Perma-Fix Diversified Scientific Services, Inc. (DSSI), a licensed and permitted commercial treatment facility in Kingston, Tennessee, and disposed of at the Waste Control Specialists Federal Waste Facility (WCS FWF) in Andrews County, Texas.

- Approximately 332 cubic meters of MLLW (primarily liquids), some of which would be treated at PFNW and disposed of at the IDF, and some of which would be treated at WCS and disposed of at the WCS FWF.

To address the proposal, DOE prepared an SA in accordance with DOE's NEPA implementing procedures at 10 CFR 1021.314. The TC&WM EIS acknowledged that secondary waste could be managed through a combination of onsite and offsite treatment capabilities. The TC&WM EIS analyzed the disposal of grouted secondary waste at the IDF. DOE has been implementing a moderate amount of offsite treatment (an average of 73 to 145 cubic meters per year of dangerous waste and MLLW) and disposal since publication of the 2013 ROD. The increased volume of offsite treatment and disposal of LLW and MLLW under the Proposed Action evaluated in the SA would not represent a substantive change relevant to environmental concerns from the Proposed Action evaluated in the TC&WM EIS.

The TC&WM EIS evaluated potential environmental impacts from the emission of criteria pollutants, toxic pollutants, and greenhouse gases. The incremental increase in emissions related to the transportation of secondary waste for treatment and disposal would add less than 1 percent to the values presented in the TC&WM EIS.

Transportation of secondary wastes offsite for treatment (and potential subsequent disposal), as opposed to the onsite treatment options evaluated in the TC&WM EIS, would essentially transfer the potential normal operational health impacts from the Hanford workforce to workers at commercial treatment and disposal facilities, given that the scopes of work would be similar in nature regardless of location. Additionally, the Proposed Action would not introduce any unique facility accidents that had not been evaluated either in the TC&WM EIS or in the commercial facility permitting or licensing process. Accordingly, radiological impacts and accident risk

resulting from the Proposed Action would be comparable to that presented in the TC&WM EIS for treatment/disposal activities originally proposed for the Hanford Site.

While the TC&WM EIS did not anticipate a large increase in the amount of secondary waste sent offsite for treatment and potential disposal, it did acknowledge that it could occur. The estimated health risks to the public and transportation crews are low for the approximate 10-year Proposed Action period.

The majority of the treated secondary waste would be disposed of at the IDF, consistent with the analysis in the TC&WM EIS. Approximately 350 cubic meters of secondary waste could be disposed of annually at the WCS FWF.⁴ In both instances, the stabilized waste form would be verified to meet the facilities' waste acceptance criteria and would be well within the volume and curie limits for the facilities.

Decision.

Based on the analysis in the SA, DOE determined that the Proposed Action for secondary waste management does not represent a substantial change to the proposal evaluated in the TC&WM EIS or significant new circumstances or information relevant to environmental concerns that would require preparation of a supplemental EIS. DOE therefore determined that no further NEPA analysis was required.

There are no additional mitigation measures required beyond those commitments in the 2013 TC&WM EIS ROD. As stated in that ROD, all practicable means to avoid or minimize environmental harm have been adopted. DOE's decision is to transport and treat certain solid and liquid secondary wastes at licensed and permitted commercial treatment facilities off the Hanford Site. DOE's decision is also to dispose of some of these secondary wastes (after

⁴ The offsite disposal volume, following treatment by macro-encapsulation or solidification, will be approximately 580 cubic meters annually for an approximate total of 5,800 cubic meters over 10 years.

treatment) offsite at the WCS FWF, a licensed and permitted commercial disposal facility. This action will be implemented on an interim basis until such time as an enhanced onsite treatment capability is available for DFLAW operations (estimated to be approximately 10 years).

Signing Authority

This document of the Department of Energy was signed on January 25, 2023, by William I. White, Senior Advisor for Environmental Management, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC on January 25, 2023.

William I. White
Senior Advisor for Environmental Management