



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Remediation, Oak Ridge Office
761 Emory Valley Road
Oak Ridge, Tennessee 37830

RECEIVED
NOV - 5 2025
COUNTY MAYOR'S OFFICE

October 31, 2025

Mr. Roger Petrie
Federal Facility Agreement Manager
U.S. Department of Energy
Oak Ridge Office of Environmental Management
Post Office Box 4067
Oak Ridge, Tennessee 37831

TDEC Comments: Waste Acceptance Criteria Compliance Plan for the Environmental Management Disposal Facility at the Oak Ridge Reservation, Oak Ridge, Tennessee (DOE/OR/01-3012&D1)

Dear Mr. Petrie

The Tennessee Department of Environment and Conservation (TDEC), Division of Remediation - Oak Ridge Office, received the subject document on August 4, 2025. TDEC offers the enclosed comments to support finalization of this plan to guide waste acceptance at the Environmental Management Disposal Facility (EMDF).

As described in *Record of Decision for Comprehensive Environmental Response, Compensation, and Liability Act Oak Ridge Reservation Waste Disposal at the Environmental Management Disposal Facility, Oak Ridge, Tennessee* [ROD] ([DOE/OR/01-2794&D2/R2](#)), the Waste Acceptance Criteria (WAC) Compliance Plan (WCP) is a primary document, requiring approval by TDEC and the U.S. Environmental Protection Agency (EPA). Information in the WCP is supported by the *Performance Assessment for the Environmental Management Disposal Facility at the Y-12 National Security Complex, Oak Ridge, Tennessee* (PA, [UCOR-5094/R2](#)) and the *Supplemental Analysis for the Environmental Management Disposal Facility* ([UCOR-5843](#)).

The WCP describes WAC development and waste acceptance at the EMDF through the application of WAC limits and Applicable or Relevant and Appropriate Requirement (ARARs). The ROD states that the final contaminant inventory in EMDF will be protective of human health and the environment and that WAC implemented by this plan are intended to manage contaminant concentrations in landfill wastewater by limiting the concentrations of mobile contaminants in the waste, such as mercury. The WCP also provides information regarding waste generation and tracking.

Questions or comments concerning the contents of this letter should be directed to Brad Stephenson at the above address, by phone at 865-352-1235, or by e-mail at brad.stephenson@tn.gov.

Sincerely

**Eileen
Marcillo**

Eileen T. Marcillo

FFA Project Manager

Division of Remediation – Oak Ridge Office

Digitally signed by Eileen
Marcillo
Date: 2025.10.30 16:36:35
-04'00'

Enclosure

ec: Joanna Hardin, DOE
Dennis Mayton, DOE
Sam Scheffler, DOE
Erin Sutton, DOE
Cathy Amoroso, EPA
John Sayer, EPA
Samantha Urquhart- Foster, EPA
Bruce Stearns, Pro2Serve
Sid Garland, UCOR
Douglas Hanahan, UCOR/RSI EnTech
Steve Kenworthy, UCOR/Strata-G
Jennifer Linton, UCOR
Mary Magleby, UCOR
Annette Primrose, UCOR
Tanya Salamacha, UCOR
Ethan Sweet, TDEC
Randy C. Young, TDEC
OREM Mailroom
ORSSAB

xc: Wade Creswell, ORRCA
Amy Fitzgerald, ORRCA
Terry Frank, ORRCA
Warren Gooch, ORRCA

ENCLOSURE

General Comments

- 1) Given the potential for the Environmental Management Waste Management Facility (EMWMF) and the Environmental Management Disposal Facility (EMDF) to be operational at the same time during a period of overlap, consider adding language to the document to clarify whether waste already determined to meet the EMWMF Waste Acceptance Criteria (WAC) will be considered for disposal at the EMDF.
- 2) The document discusses how EMDF will support the U.S. Department of Energy (DOE) mission to decommission/demolish facilities and conduct remedial cleanup actions (Page 1, second paragraph) through the remedial design/remedial action process (Page 7, third paragraph, third sentence). Evaluate the need for discussing removal actions throughout the document, including Page 4 (first paragraph, last sentence); Page 10 (first paragraph, fourth sentence); and Page 15 (Figure 3, Project row), and revise accordingly.
- 3) The WAC Compliance Plan (WCP, [DOE/OR/01-3012&D1](#)) for the EMDF provides a general overview of the process that the DOE, the U.S. Environmental Protection Agency (EPA), and the Tennessee Department of Environment & Conservation (TDEC) will follow to determine which environmental cleanup wastes will be accepted for disposal at the EMDF. The WCP does not mention Waste Handling Plans (WHPs), which are primary documents under the [Federal Facility Agreement for the Oak Ridge Reservation \(FFA\)](#). WHPs are required by the EMDF Record of Decision (ROD, [DOE/OR/01-2794&D2/R2](#)) and other decision documents approved under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, the WCP focuses on the Data Quality Objectives (DQO) and Data Quality Assessment (DQA) processes.

TDEC's interest is to maintain approval authority for characterization of waste considered for disposal at EMDF. Text throughout the document should be reviewed and revised as appropriate after the FFA Parties (DOE, EPA, and TDEC) agree to a path forward for WHPs, DQOs, and DQAs to determine which wastes have been characterized sufficiently to support disposal at EMDF. Examples of text needing revisions include, and may not be limited to, the following.

- a) Page 9, last paragraph: This paragraph summarizes the roles and responsibilities of the FFA Parties and the associated CERCLA documents/processes that must be completed for waste to be accepted for disposal at the EMDF. Revise the text to describe the role of WHPs in the evaluation/approval process. As written, the paragraph suggests that the regulators will not approve how the waste is characterized prior to disposal at EMDF and that "FFA party agreement during the DQO/DQA process" authorizes disposal at EMDF. The text should clarify the role of the FFA Parties and how approvals are documented. This clarification should be included throughout the document, including Section 4.1.4.3 and Figure 5.

ENCLOSURE

- b) Page 7, last paragraph, continuing onto Page 8.
 - c) Page 13, 3rd paragraph.
 - d) Page 15, Figure 3, DOE & Regulators row.
- 4) Evaluation of uranium and mercury toxicity: The *Supplemental Analysis for the Environmental Management Disposal Facility* (SA report, [UCOR-5843](#)) and/or the WCP should clarify how average concentrations of uranium and mercury are determined, as these contaminants are 1) the primary contaminants anticipated in waste from cleanup activities at the Y-12 National Security Complex (Y-12); 2) both have toxic effects on human kidneys; 3) they are among the contaminants most likely to drive health risks; and 4) the WCP includes no inventory limits on disposal of these contaminants. The SA report highlights that the noncarcinogenic toxicity of uranium poses a greater risk to human health than its radioactivity, making this assessment vital.

Input Concentrations: The SA report *assigns* total facility average concentrations for uranium and mercury as inputs rather than calculating the maximum concentrations that could be released through the bathtubting scenario without exceeding acceptable risk levels. For instance, the assigned uranium concentration at landfill closure is 400 milligrams per kilogram (mg/kg), which is about one-third of the conservatively estimated (biased high) concentration of 1,130 mg/kg from the Performance Assessment (PA, [UCOR-5094/R2](#)). This value is only supported by a qualitative comparison with the current total uranium inventory estimate for EMWMF (approximately 200 mg/kg) and an unsupported *expectation* that the EMDF will receive less uranium.

Trigger Levels: The WCP references trigger level concentrations for uranium and mercury as being “based on the Supplemental Analysis results” (Page 34); “related to the Supplemental Analysis results” (Page 36); and “based on the toxicity projections reported in the EMDF Supplemental Analysis” (Pages 3 and 37). The meaning of these sentences is unclear, as is justification for selection of the trigger levels. It appears the trigger levels are based on arbitrary multiplication factors of two for uranium and 100 for mercury.

Recommendations:

- a) Revise the SA to calculate the maximum concentrations of uranium and mercury that can be released through the bathtubting scenario without posing unacceptable risk. This would directly support protective inventory limits in the WCP.
- b) Alternatively, revise the SA report and/or the WCP to show cumulative risks using the trigger levels presented in the WCP (800 mg/kg for uranium and 1,000 mg/kg for mercury).

ENCLOSURE

- c) Unless the WCP is revised to include risk-based inventory limits for uranium and mercury, revise the document, including Page 3, third paragraph, third and fourth sentences, to explain clearly how risk management decisions will be made if uranium and/or mercury concentrations approach their trigger levels.
- 5) Meeting CERCLA threshold criteria requires compliance with Applicable or Relevant and Appropriate Requirement (ARARs), including Land Disposal Restrictions (LDRs). It also requires protection of human health and the environment. Protectiveness is demonstrated by assessing potential risks to a receptor from exposure to all noncarcinogenic (Hazard Index [HI] ≤ 1) and all carcinogenic (excess lifetime cancer risk [ELCR] 10^{-6} to 10^{-4}) contaminants through all relevant pathways.
 - a) Text in the third paragraph of Page 5 presents an expectation that waste meeting Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions (LDRs) will have an HI ≤ 1 . Revise the text to explain how this expectation will be confirmed, particularly given that the WCP does not require HI tracking, as is done for waste disposed of at the EMWMF.
 - b) Text on Page 33, last paragraph, 3rd sentence states:

PA results for the environmental release (to groundwater) scenario were used to calculate radionuclide inventory limits (maximum EMDF facility average concentrations at closure, EMDF ROD Sect. 4.2.2) that meet NRC performance objectives (critical organ dose criteria) identified as ARAR (TDEC 0400-20-11-16(2) [10 CFR 61.41]) for EMDF. The EMDF inventory limit calculations include potential exposures occurring up to 1,000 years post-closure. These dose-based concentration and inventory limits meet CERCLA carcinogenic risk criteria based on approximate dose-risk relationships, as noted in the EMDF ROD, Sect. 2.12.2.

Revise the text to clarify how the remedy of onsite disposal meets CERCLA threshold criteria. This requires demonstrating that risks meet the requirements of HI ≤ 1 and ELCR 10^{-6} to 10^{-4} *in addition to* ARAR compliance. Complying with a single ARAR is not sufficient to meet CERCLA threshold criteria. As stated in the ROD (p. 2-60 through 2-61), results of the dose assessments demonstrate protectiveness for the CERCLA risk range “under the assumptions made for inputs to the RESRAD computer modeling program and at the point of compliance allowed by the DOE 435.1 Order and guidance.” The CERCLA risk range applies only to carcinogens and does not demonstrate protectiveness for toxicity associated with chemicals like mercury and uranium metal. The need for the EMDF remedy to meet CERCLA threshold criteria is the reason the ROD requires the SA to inform WAC, including inventory limits, for radionuclides and other chemicals to be placed in the landfill.

- c) Revise the text on Page 35, Section 4.2.3, second paragraph, last sentence to explain how maintaining a volume-weighted sum of fractions (VWSF) at or below 1 ensures

ENCLOSURE

CERCLA protectiveness, including $HI \leq 1$, when there are no inventory limits for uranium or mercury. Page 36 states that these two contaminants are likely to drive potential future risks to public health.

- 6) For consistency with the ROD's prohibition on mercury hazardous (D009) waste disposal in the EMDF, revise the document to clarify that EMDF will not accept characteristically hazardous mercury waste, even if it is treated. The document states this on Page 5, second full paragraph, last sentence. However, such statements are also needed elsewhere, including Page 3, second paragraph and Page 4, Section 1.2, first paragraph, sixth sentence.
- 7) The document includes several references to "visible recoverable liquid mercury," including Page 5, second full paragraph; Page 8, first partial paragraph; Page 20, sixth bullet; Page 25, first, second, and fourth paragraphs; and Page 27, Figure 5. For EMWMF, the FFA Parties agreed that visible liquid mercury cannot be disposed. Revise the document to clarify what "recoverable" means in this context and whether DOE plans to dispose of waste containing visible liquid mercury in the EMDF.

For context, the *Site Treatment Plan for Mixed Wastes on the U.S. Department of Energy Oak Ridge Reservation* (STP, [TDEC-VER.28.0](#), p. 3-10) states that mercury mixed-waste streams can be divided into categories based on the presence or absence of visible mercury, but the designations are not qualified with the word "recoverable."

- 8) Revise the document to clarify how mercury-bearing waste will be evaluated to determine which materials warrant segregation as waste that is hazardous by characteristic. For example, in the second paragraph of Page 5 and subsequent sections, add details to more clearly describe what drives waste segregation versus calculating a Upper Confidence Limit - 90% (UCL-90) Toxicity Characteristic Leaching Procedure (TCLP) concentration which might allow waste with sample results above mercury hazardous waste levels to be disposed of in EMDF.

Similarly, on the seventh bullet of Page 20, revise the text to clarify what it means to "fail TCLP for D009 Mercury-contaminated hazardous waste." Figure 4 on Page 22 suggests contaminated soil and debris can be disposed of in the EMDF if the UCL-90 TCLP concentration is less than the hazardous regulatory limit (0.2 milligrams per liter [mg/L]). Does the UCL-90 TCLP approach apply to mercury-contaminated characteristic hazardous waste, or does DOE plan to segregate all mercury-contaminated waste with TCLP results that exceed 0.2 mg/L?

- 9) As discussed briefly during project team meetings, TDEC recommends that DOE evaluate the installation and use of a portal monitor system capable of both gamma and neutron measurement, at least for inbound trucks. Use of such a system would support verification that waste shipments do not exceed WAC, consistent with DOE's defense in depth strategy.

ENCLOSURE

Specific Comments

- 1) Pages ix and 2, 2nd bullet, 2nd sentence: The statement is correct but incomplete. Add wording to clarify the primary objective for the Supplemental Analysis (SA) was to ensure that WAC include protective limits on the inventories of radionuclides and other chemicals to be placed in the landfill.
- 2) Page 1, Figure 1: Ensure all text is legible, including the title block and scale bar.
- 3) Page 4, Section 1.2, 1st paragraph, last sentence: For clarity, consider adding "containerized" after "The volumes of."
- 4) Page 5, 4th paragraph: Revise the text to describe the process by which the FFA Parties evaluate and approve treatment of non-mercury hazardous waste to meet RCRA LDRs. Alternatively, reference the appropriate document section that describes this process.
- 5) Page 5, 5th paragraph, last sentence and Page 23, 2nd paragraph: Revise the text to explain how a treatment process is "approved and verified with FFA acceptance to meet LDR criteria." Is there a list of approved treatment processes, or will the treatment process be determined per waste lot? How will approval/acceptance be documented?
- 6) Page 7, 1st bullet: Revise the sentence for clarity.
- 7) Page 7, 1st sentence below bullet list:
 - a) Revise the text to provide additional details on what waste this statement covers: "or will be evaluated per the EMDF ROD and have EPA, TDEC, and DOE review and approval through the data quality objectives (DQO)/data quality assessment (DQA) process prior to shipment."
 - b) Revise the sentence for clarity, perhaps splitting the text into two sentences. Is the use of "or" appropriate?
- 8) Page 7, 3rd paragraph, 2nd sentence: Remove "or an equivalent process".
- 9) Page 7, 4th paragraph (note), last sentence: Revise the text to provide additional details.
 - a) What process/documentation does the DOE envision for DQO acceptance?

The FFA Parties have not previously required DQO acceptance before a waste lot is approved for onsite disposal. Documentation associated with the DQO evaluation does not provide characterization results, updated sums of fractions (SOFs), or waste profiles.

ENCLOSURE

- b) Does the DQA, which is mentioned in the first sentence of the paragraph, need to be approved before or after waste lot approval? Regulatory approval of DQA documentation would be more appropriate than DQO approval if the FFA Parties were to agree on that approach.
 - c) Where does waste lot approval fall within the process/schedule?
 - d) A WHP must be approved before a waste lot is approved for disposal at the EMWMF. The FFA Parties plan to discuss WHPs and possible alternative approaches in a December 2025 partnering meeting. TDEC recommends the FFA Parties reach agreement on the process before finalizing the EMDF WCP.
- 10) Page 7, 5th paragraph: Revise the text to identify the project-specific planning documents that will be prepared, including those to be prepared for removal actions. Will DOE provide the plans for TDEC and EPA review and approval? Further discussion is needed to understand how these documents fit into the waste approval process.
- 11) Page 8, 3rd bullet and Page 13, 3rd sentence: For clarity, reword “approved risk assessment model results provided in the ROD” and “the CERCLA risk assessment modeling performed in support of the EMDF ROD remedial action objectives” to more clearly specify the assessment being described. TDEC signed the EMDF ROD that requires the evaluation of a supplemental release scenario (supplemental analysis), but TDEC has not approved a CERCLA risk assessment for the EMDF.
- 12) Page 9, Section 3.0, 2nd paragraph: Revise the text to specify or provide examples of the “various compliance organizations.”
- 13) Page 10, 3rd sentence: Reword the text for clarity. The sentence should state that that the FFA Parties *will* (not *may*) approve how waste is characterized before disposal in the EMDF.
- 14) Page 10, bullet list:
- a) 3rd bullet: Revise the text to explain how characterization data are determined to comply with DQO/DQA processes.
 - b) Add a bullet describing waste acceptance team (WAT) responsibility for ensuring EMDF inventory limits are maintained.
- 15) Page 13, 4th paragraph: Revise the text to describe the role of TDEC and EPA in profile revisions.

ENCLOSURE

16) Page 15, Figure 3:

- a) Should this diagram include treatment of characteristic hazardous waste (e.g., FFA approval of technology-based treatment process), excluding D009 mercury hazardous waste?
- b) Project row, DQA: What is meant by “remove Summary Stats” in the “present DQA to FFA Parties and remove Summary Stats” bullet?
- c) DOE & Regulators row: Describe the process/documentation associated with the second and third boxes, “Review & Accept DQO with SAP/QAPP” and “Review & Accept DQA.” What CERCLA documents will be submitted to TDEC and EPA for review and approval?

17) Page 17, Section 4.1.1, 2nd paragraph, 1st sentence: For clarity, consider revising the text as follows:

EMDF, like EMWMF, will be designed and constructed to meet the substantive requirements of RCRA Subtitle C, Subtitle D, and the Toxic Substances Control Act (TSCA), consistent with ~~which will be~~ the primary waste types expected to be generated in addition to radioactive waste.

18) Page 22, Fig. 4, last footnote: Add the reference for EPA 530-D-02-002 to Section 8.

19) Page 23, 2nd paragraph:

- a) Revise the text to explain the process for regulatory approval of a technology-based treatment process. Would the approval of an alternative treatment method be conducted as specified in 40 CFR 268.42(b)? If there were a technology-based treatment process approved by the FFA Parties, would each CERCLA project require a separate approval, or would DOE use the technology to treat and dispose of waste at EMDF without project-specific approval by TDEC and EPA?
- b) Once waste has been treated using a technology-based process, will DOE present the data on the performance of process to TDEC and EPA prior to disposal at EMDF?

20) Page 23, 3rd paragraph: The treatment process for soil that fails TCLP should be included in an approved WHP and/or DQA document, not a DQO evaluation.

21) Page 24, Table 3: What is the “Treatment Plan with SAP” and how is it approved through the FFA process?

22) Page 25, 4th paragraph: Revise the text to include a commitment to segregate mercury-contaminated waste to the extent practicable.

ENCLOSURE

- 23) Page 25, last paragraph, 1st sentence: For clarity and consistency with the second paragraph on Page 5, revise the sentence as follows.

Mercury hazardous [D009] waste is prohibited from disposal in EMDF even if treated to meet LDRs. RCRA listed hazardous waste is also administratively prohibited.

As written, it is not clear the prohibition applies only to onsite disposal at EMDF. Moreover, the text could be misread to mean that treatment is only prohibited prior to disposal, suggesting that waste could be treated after disposal.

- 24) Page 32, Section 4.1.7, 2nd sentence: For clarity, consider splitting the sentence into two sentences, as follows:

EMDF has evaluated disposal operations and the relevant EMDF process as they relate to criticality safety. Those evaluations show that criticality is not credible for disposal of fissionable material that meets the EMDF WAC.

- 25) Page 32, Section 4.1.7, 4th paragraph, 2nd sentence: Revise the paragraph to clarify why waste containing enriched uranium would be exempt from criticality safety evaluations.

- 26) Page 34, 1st full paragraph, 2nd and 3rd sentences: Consider revising the text to be consistent with any revisions to resolve General Comment 4 and Specific Comment 3.

- 27) Page 34, 1st full paragraph, last sentence: The sentence states that contingent risk management activities are discussed in Section 4.2.5, but that section provides no additional information regarding those activities. Revise the document to explain what activities might be appropriate if average concentrations of uranium or mercury are forecasted to approach their respective trigger levels.

- 28) Page 35, Section 4.2.4, 1st paragraph, 2nd sentence: TDEC acknowledges that the DOE commitments for continuous post-closure monitoring, maintenance, and institutional controls (ICs) made in the EMDF ROD contribute to long-term protectiveness of the remedy. However, consider revising the sentence to clarify the release scenario is evaluated as a standalone, quantitative evaluation, independent of how effectively ICs may be implemented in the future. In the EMDF ROD (DOE/OR/01-2794&D2/R2, p. 2-50), DOE, EPA, and TDEC agree to assess a bathtubbing scenario as a site-specific approach to evaluating long-term protectiveness after other protections fail and to inform landfill design and WAC.

- 29) Page 36, last paragraph: Revise the text to better explain statements that the estimated radionuclide inventory “generally meets the CERCLA risk range” and that the HI and

ENCLOSURE

ELCR are acceptable, despite the unclear application of trigger levels instead of inventory limits for uranium and mercury.

30) Page 37, Section 4.2.5: Revise the text to clarify:

- a) The use of a uranium trigger level of 800 mg/kg when the SA evaluated 400 mg/kg and the reported EMWMF concentration is approximately 200 mg/kg; and
- b) The basis for a mercury trigger level of 1,000 mg/kg.

The proposed trigger level for uranium (800 mg/kg) is significantly larger than the concentration of 400 mg/kg cited as the value used for the uranium metal toxicity risk assessment in a footnote to Table 1 of the SA report. The relationship of the proposed mercury trigger level (1,000 mg/kg) to the value used in the SA risk calculations could not be determined because waste zone concentrations for metals are not provided in the SA report. Review of HI results in Table 7 of the SA report indicate that uranium at 400 mg/kg is responsible for about 60% of the zero-leak-liner HI of 1.56 and about 56% of the 50%-liner-leak HI of 0.86. These risk assessment results do not support a waste concentration trigger level for uranium greater than 400 mg/kg.

31) Page 38, Figure 6, 1st diamond: Should the text in this diamond ask if *projected* results are approaching the trigger/screening levels? If the inventory results are above the trigger/screening levels, isn't it too late to evaluate potential lifecycle impacts?

32) Page 39, 1st paragraph, 3rd sentence: If WAC are updated following approval of the D1 WCP, the document must be amended to revise Table A.2, and the revised document must be made publicly available (e.g., via the [DOE Information Center](#)) in a timely manner. Providing a copy of the updated table on the EMDF webpage is acceptable if it is done *in addition to* maintaining the WCP.

33) Page 41, Section 5.1, 1st paragraph: Remove the phrase "be an approved CERCLA offsite National Priorities List (NPL) site contaminated from DOE operations" or revise for consistency with the EMDF ROD and Table A.1.

34) Page 41, Section 5.1, 2nd paragraph: FFA Appendix I-14 outlines the process for developing WHPs and includes the steps presented in this paragraph. Reference WHPs in this paragraph since the objective of Appendix I-14 is to outline the process for developing WHPs, which are necessary for disposal of ORR CERCLA waste at EMDF.

ENCLOSURE

35) Page 42, last paragraph: Confirm that "CSE" is the correct acronym for this paragraph. Confirm this acronym is used correctly globally (e.g., Page 44, first paragraph, and Page 48, fourth paragraph).

36) Page 44, Site Related Contaminants, 3rd paragraph: Consider rewording the sentence for clarity. If "total activity" refers to the total projected landfill inventory, the sentence might be more clearly stated as follows:

Waste streams having activity concentrations of radionuclides in their final waste forms projected to comprise 1% or greater of the total activity within the landfill shall be reported.

37) Page 44, last paragraph, 2nd sentence: Revise the text to clarify the meaning of "reporting requirements."

38) Page 47, Sampling Methods, 2nd paragraph, last sentence: Revise the text to specify "the appropriate project and functional representatives." Do these include representatives from DOE, EPA, and TDEC?

39) Page 51, 4th bullet: Revise the sentence to clarify use of the word "may." Isn't the point of waste characterization to evaluate compliance with EMDF WAC?

40) Page 54, Section 5.6, 2nd sentence: Revise the sentence for clarity. Does "lower volume SOFs" refer to the SOFs for previous low-volume waste lots? If so, how do such SOFs bound a larger waste volume?

41) Page 61, 1st reference: Cite the reference in the document or remove it.

42) Page A-4, Table A.1: Revise the table to include the last row of Table 2.6 in the ROD. The row included in the source table in the ROD but omitted from the WCP states:

Waste prohibited or limited by definition or decision

Waste shall be limited to prevent nuclear criticality during all phases of waste cell operation, including active waste disposal operations and inactive, post-closure periods.

Basis of prohibition/limitation

Analysis per DOE Order 420.1C (DOE 2015), latest revision of the order
Triparty agreement^a

ENCLOSURE

^aTriparty agreement refers to discussions held for the given prohibition/ limitation and decisions/agreements reached among the three FFA Parties regarding the specific WAC given here, which are documented by the approval of this ROD.

- 43) Page A-8, Table A.4: The table assumes a bulk density of 1.7 grams per cubic centimeter (g/cm^3). Revise the document to use the value established via the PA ([UCOR-5094/R2](#)) and applied in the SA or explain why this value is different. If there is substantial uncertainty regarding the value, a probabilistic evaluation may be more useful.

In the PA, the estimated average as-disposed bulk density is approximated as 1,480 kilograms per cubic yard (kg/yd^3) or 1,936 kilograms per cubic meter [kg/m^3] on p. 138 and as $1,900 \text{ kg/m}^3$ on p. 178. In the SA report ([UCOR-5843](#), p. 10), the solid low level (radioactive) waste (LLW) bulk density has a value of 1.94 g/cm^3 , which matches the values used in the EMDF PA. Similarly, in the WCP (p. A-7), Table A.3 uses a bulk density of 1.9 g/cm^3 .

- 44) Appendix B: Revise the process described in this appendix to explain how the WCP will be updated to document new or revised WAC and how the updated WCP will be made available to the public.
- 45) Page B-3, 1st paragraph, last sentence: Change "significant" to "unacceptable" for consistency with CERCLA risk assessment requirements and guidance.
- 46) Page C-5, 2nd paragraph, 2nd sentence: Revise the text and/or Appendix A for accuracy. The sentence states that Appendix A presents trigger levels, but trigger levels are not included in Appendix A.
- 47) Page C-5, 2nd paragraph, 4th sentence: Revise the text for clarity with respect to the first sentence on the page and the definition on Page F-4. The first sentence states that a site-related contaminant (SRC) has a WAC limit, and Page F-4 defines "Site-related contaminants" as "Waste constituents with WAC concentration limits...". The subject sentence discusses SRCs that do not have analytic WAC limits.
- 48) Page C-7, Section C.2.2, 2nd paragraph, last sentence: Revise the text to clarify the meaning of the sentence. What is meant by "uncertain data," and how are proxy values selected for replacing those results?

ENCLOSURE

- 49) Page C-11, 2nd paragraph, 1st sentence: Revise the text to specify how “background concentrations” and “the expected range of background levels” are determined.
- 50) Page C-11, 2nd paragraph, 2nd sentence: Revise the text to clarify the background concentration is a threshold rather than a range.
- 51) Page C-14, 1st paragraph, 1st sentence: Revise the text to clarify how data must be confident. Is this a reference to data within certain confidence intervals, or is it the intent to describe confidence in the determinations?