Preliminary Comments on Supplemental EIS for Area IV, SSFL

(https://www.philrutherford.com/SSFL/DOE_SEIS/Preliminary_Comments_on_Area_IV_SEIS.pdf)

These initial comments relate to the Department of Energy's (DOE) issue of Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for Area IV, SSFL.[1] A key comment is a recommendation to include an additional alternative, namely, to use the established DOE radiological release and clearance standard enforced at all other facilities in the DOE complex.

1. Proposed New Alternative - DOE Release/Clearance Standard

Background

In March 2023, the Department of Energy (DOE) issued a DOE Technical Standard, "Implementing Release and Clearance of Property Requirements" (DOE-STD-1241-2023).[2]

The Foreword to this standard includes (abridged) ...

> *"DOE developed this Technical Standard to assist DOE Field Element Managers and DOE contractors in meeting release and clearance of property requirements provided in DOE Order (O) 458.1, "Radiation Protection of the Public and the Environment, Chg. 4 (2020),[3] to consolidate all previously published pre-approved Authorized Limits and include newly approved volumetric pre-approved Authorized Limits."*
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> *"DOE previously issued for use and comment draft DOE Guide (G) 441.1-XX, "Control and Release of Property with Residual Radioactive Materials," in 2002,[4]*

[1] DOE. "Notice of Intent to Prepare a Supplemental Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory and Conduct Public Scoping Meetings." 6450-01-P. December 17, 2024.
https://www.energy.gov/sites/default/files/2024-12/doe-noi-eis-0402-s1-12-19-24_0.pdf

[2] DOE Technical Standard. "Implementing Release and Clearance of Property Requirements." Section 4.7 Release of Real Property and Section 4.8 Release of Soils. March 2023.
https://www.standards.doe.gov/standards-documents/1200/1241-AStd-2023/@@images/file

[3] DOE Order. "Radiation Protection of the Public and the Environment." DOE O 458.1 (Chg. 4). September 15, 2020.
https://www.directives.doe.gov/directives-documents/400-series/0458.1-BOrder-chg4-ltdchg/@@images/file

[4] DOE Draft Implementation Guide. "Control and Release of Property with Residual Radioactive Material." DOE G 441.1-XX. April 4. 2002.
https://www.energy.gov/sites/prod/files/2014/03/f13/doe441.1-xx_0.pdf

and DOE Handbook (HDBK)-XXXX-97, "Draft Handbook for Controlling Release for Reuse or Recycling of Non-Real Property Containing Residual Radioactive Material," in 1997, [5] to serve as clearance of property guidance supporting DOE O 5400.5 [6] requirements. These documents have been incorporated into this technical standard, intended to provide updated guidance for implementing DOE O 458.1 release and clearance of property requirements."

DOE-STD-1241-2023 adopts …

- 25 mrem/y plus ALARA for real property [7] based on NRC 10 CFR 20.1402 Subpart E License Termination Rule [8] (Section 3.3 and 4.7 of the standard). ALARA (as low as reasonably achievable) is not a numerical goal (and certainly not zero) but is a process. [9] The central word "reasonable" implies an assessment of quantitative and qualitative "costs" and "benefits" to determine an optimal decision as to what is low enough. A generic cost-benefit analysis for soil remediation has been published by the NRC and concludes that 25 mrem/y is already ALARA without the need to remediate (remove more soil) to achieve lower annual dose rates. [10,11]

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[5] DOE Standard, "Draft Handbook for Controlling Release for Reuse or Recycle of Non-Real Property Containing Residual Radioactive Material." DOE-HDBK-xxxx-97. June 1997
https://www.energy.gov/ehss/articles/doe-handbook-doe-hdbk-xxxx-97-draft-handbook-controlling-release-reuse-or-recycle-non

[6] DOE Order. "Radiation Protection of the Public and the Environment." DOE 5400.5. (Chg.2). January 7, 1993.
https://www.directives.doe.gov/directives-documents/5400-series/5400.05-BOrder-c2/@@images/file

[7] ***"Real property*** *is defined as* ***land*** *and anything permanently affixed to the land such as* ***buildings****, fences, and* ***those things attached to buildings*** *such as light fixtures, plumbing and heating fixtures, or other such items, that would be personal property if not attached."* DOE-STD-1241-2023.

[8] NRC. "Radiological Criteria for Unrestricted Use." 10 CFR 20.1402.
https://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-1402.html

[9] DOE, DOE-HDBK-1215-2014. "DOE Handbook - Optimizing Radiation Protection of the Public and the Environment for Use with DOE O 458.1, ALARA Requirements."
https://www.standards.doe.gov/standards-documents/1200/1215-hdbk-2014-cn1-2022-reaff-2022/@@images/file

[10] NRC. "NMSS Decommissioning Standard Review Plan." NUREG-1727. September 2000.
https://www.nrc.gov/docs/ML0037/ML003761169.pdf

[11] NRC. "ALARA Analyses." Appendix D of NUREG-1727. September 2000.
https://www.nrc.gov/docs/ML0037/ML003761169.pdf#page=433

- 1 mrem/y for personal property [12] (Sections 4.4 and 4.5 of the standard).
- Total and removable surface contamination limits for personal property are identical to NRC Regulatory Guide 1.86 [13] and NUREG 1556, Vol. 9, Rev. 3 [14] (Section 4.4 and Table 1 of the standard).
- Volumetric contamination limits for personal property based on ANSI/HPS N13.12-2013 [15] (Section 4.5 and Table 2 of the standard)
- 5 pCi/g of radium-226 in soil based on EPA UMTRCA regulations [16] (Section 4.2 of the standard).

DOE-STD-1241-2023 DOES NOT recommend …

- Cleanup-to-background
- Risk assessment
- Single sample, single analyte not-to-exceed objectives
- Use of the controversial linear no threshold (LNT) model to calculate hypothetical cancer risks from radiation dose
- Single-sample, single-analyte comparisons to parametric background estimates

DOE-STD-1241-2023 DOES recommend …

- Dose goals and NOT risk goals
- Dose goals and contamination goals above background

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[12] ***"Personal property*** *is property of any kind,* ***except for real property.*** *For the purposes of DOE O 458.1 and this Standard, examples of personal property include consumable items (e.g., wood, containers, lab equipment and paper); personal items (e.g., clothing, brief cases, respirators and gloves); office items (e.g., computers, unused office supplies, and furniture); tools and equipment (e.g. hand tools, power tools, construction machinery, vehicles, tool boxes, ladders, and scales); and* ***debris*** *(e.g.* ***removed soil, rubble****, sludge,* ***wood****, tanks,* ***scrap metal****,* ***concrete****, wiring, doors, and windows)."* DOE-STD-1241-2023.

[13] AEC. "Termination of Operating Licenses for Nuclear Reactors." Regulatory Guide 1.86. Table 1. June 1974. https://www.nrc.gov/docs/ML0037/ML003740243.pdf

[14] NRC. "Consolidated Guidance about Materials Licenses." NUREG-1556, Volume 9, Rev 3. September 2019. https://www.nrc.gov/docs/ML1925/ML19256C219.pdf

[15] DOE. "Pre-Approved Authorized Limits for Release and Clearance of Volumetric Radioactivity of Personal Property at Department of Energy Field Elements." Memo from Associate Under Secretary for EHS&S (AU-1). March 16, 2021. https://www.energy.gov/sites/default/files/2021-03/Memorandum-Approval-of-Volumetric-Authorized-Limits-March-16-2021.pdf

[16] EPA. "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." 40 CFR 192. https://www.govinfo.gov/content/pkg/CFR-2018-title40-vol27/pdf/CFR-2018-title40-vol27-part192.pdf

- Use of multi-agency MARSSIM and MARSAME non-parametric hypothesis testing of sampled survey units compared to background reference areas to determine if dose or contamination goals have been met.

Proposed Alternative

DOE-STD-1241-2023 and all prior DOE release/clearance documents have been based on, and are consistent with, multi-agency determinations of safe, low dose, low contamination, achievable goals and not zero-tolerance, cleanup to background goals. The goals of DOE-STD-1241-2023 are enforced at all DOE facilities in the US with one exception, the Energy Technology Engineering Center. Evaluation of alternatives in the SEIS should include quantitative comparisons of the levels of radiological contamination remaining in Area IV of SSFL compared to other DOE facilities, including Hanford, Los Alamos, Oak Ridge, Savanah River, Idaho, Portsmouth/Paducah etc. The SEIS should address the following question, why does Area IV, SSFL require the draconian mandates of the Hirsch-Brauch 2010 AOC, while all other more heavily contaminated DOE sites are being cleaned up based on the multi-agency, science-based, established requirements of DOE-STD-1241-2023 and MARSSIM?

For radiological cleanup,

- DOE should evaluate its own dose-based cleanup goal of 25 mrem/y plus ALARA standard in the recent DOE-STD-1241-2023, that is consistent with the Nuclear Regulatory Commission's License Termination Rule, 10 CFR 20.1402.[17]
- DOE should evaluate a reasonably anticipated future land use of open-space recreational parkland, consistent with Boeing's Grant Deed of Conservation Easement and Agreement with North American Land Trust.
- DOE should utilize the confirmatory sampling protocols of the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).[18] MARSSIM uses non-parametric methods (e.g. Wilcoxon Rank Sum test) to compare a site sample distribution to a background sample distribution. This avoids many of the problems comparing single sample data to a single parametric level (i.e., a single value LUTV)

[17] NRC, 10 CFR 20.1402, "Radiological Criteria for Unrestricted Use." https://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-1402.html

[18] EPA, NRC, DOE, DOD, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)." August 2000. https://www.epa.gov/sites/default/files/2017-09/documents/marssim_manual_rev1.pdf.

that were identified by Dr. Valerie Hanley in the November 20, 2024, Soil Smarts workshop.

DTSC technical staff have openly stated that,

> *"The Human and Ecological Risk Office (HERO) has previously supported and continues to support using a population-based test (such as the Wilcoxon Rank Sum Test) as a primary method to evaluate background-versus-site populations for COPC/COPEC selection on the Boeing portions of the SSFL site, consistent with HERO/DTSC guidance and USEPA guidance."* [19]

DTSC management should listen to, and heed, the advice of its own technical staff who are less affected by political and activist pressure.

2. Prior Building Demolition and Soil Remediation Efforts

Page five of the NOI includes the statement, *"Prior building demolition and soil remediation efforts resulted in removal of much of the chemical and radioactive material from Area IV."* That is correct, which supports the proposition that a "DOE Release/Clearance Standard" alternative is more than adequate to ensure remaining radiological contamination is removed that will be fully protective of the public and environment.

3. Demolition of Boeing Owned Buildings in Area IV

Page five of the NOI includes a statement, *"Boeing has responsibility for the decontamination of and demolition of buildings it owns [in Area IV]."* That is correct, and therefore DTSC cannot use, as precedent, the DTSC/DOE 2020 Amendment to the Order on Consent (AOC) to argue that decommissioned, released-for-unrestricted-use, former radiological/nuclear facilities should be disposed of, out-of-state, as low-level radioactive waste (LLRW). Furthermore, DTSC cannot use the argument that since DOE is responsible for soil remediation in Area IV, and since the 2010 AOC defines soil to include *"debris, structures, and other materials"*, then Boeing buildings standing on Area IV soil are subject to the mandates of the 2010 AOC and 2020 AOC. That twisted logic is incorrect. It also

[19] DTSC/HERO, Faulkner, Brian, "Statistical Methods for Application in the Chemical Soil Background Study for the Modified Site Evaluation Approach of the AOCs (DOE and NASA) and for Risk Assessment-Based Approach (Boeing) at the Santa Susana Field Laboratory, Ventura County, CA." May 9, 2013. https://www.dtsc-ssfl.com/files/lib_look-uptables/chemical/66069_Statistical_Methods_for_Application_in_the_Chemical_Soil_background_Study.pdf.

violates the California Appeals Court decision and order in PSR-LA, et. al. vs. DTSC, CDPH and Boeing, in which the Court concluded that once a former radiological/nuclear facility has been decommissioned, surveyed, and released for unrestricted use, by the appropriate regulatory authority, the structural material ceases to be "regulated radioactive material" and cannot be arbitrarily declared to be "low-level radioactive waste." [20,21]

4. Final EIS Building Demolition Alternative

Page seven of the NOI includes the statement, "On September 27, 2019, DOE announced its decision to implement the preferred alternative for building demolition identified in the 2018 SSFL Area IV EIS to demolish the 18 buildings it owned in Area IV of SSFL and dispose of or recycle the materials off site (84 FR 51150)." [22]

The Building Record of Decision (ROD) included the statement, *"... with offsite disposal of debris at permitted or authorized facilities in accordance with its waste classification."* There was no mention of classifying all building debris as LLRW and disposing at licensed LLRW disposal facilities. And disposal *"offsite"* does not mean disposal *"out-of-state."* The ROD included an option to recycle decommissioned and clean material when appropriate. How much ETEC building debris has DOE recycled?

Buildings 4019 and 4029 had been decommissioned and released by DOE for unrestricted use. [23,24] Building 4133 had been surveyed by ORISE and CDPH/RHB and confirmed to meet

[20] California Appeals Court. PSR-LA et. al. vs. DTSC et. al. "Appeals Court Decision." Section IIC. DPH. Pages 8-9. May 2, 2023.
https://www.dtsc-ssfl.com/files/lib_physocrespvsdtsc/courtdocuments/69837_PSR_v_DTSC_Appeal_Decision.pdf#page=8

[21] Rutherford. "Nuclear Decommissioning at the Santa Susana Field Laboratory." Section 19.4. "Appeal" Page 72. July 21, 2024.
https://philrutherford.com/SSFL/Nuclear_Decommissioning_at_SSFL.pdf#page=72

[22] DOE. Federal Register 84 FR 51150. "Record of Decision for Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory, California." September 27, 2019.
https://www.ssflareaiveis.com/fr-rod-eis-0402-ssfl-area-iv-buildings-2019-09-27.pdf

[23] DOE. "Release of Building 4019." January 31, 2005.
https://www.energy.gov/sites/default/files/2023-10/4019-doerel.pdf

[24] DOE. "Release of Facilities for Non-Radiologic Use." April 21, 1997.
https://www.energy.gov/sites/default/files/2023-10/4029-doerel.pdf

federal and state cleanup standards for structures.[25] Buildings 4038, 4057, 4462 and 4463 had no history of radiological use and had been surveyed by a DOE contractor to be *"indistinguishable from background."* [26,27] Both the Draft EIS and the Final EIS [28] stated in Section 2.5.2, "Building Removal Alternative" that, *"As shown in Table 2–6/7, approximately 65 percent of the debris from buildings with a radiological history does not exhibit radiological characteristics above background levels."* Nevertheless, *"in an abundance of caution"* DOE agreed to the DTSC demand that all demolition debris from all these "clean" buildings be disposed of out-of-state at a licensed LLRW disposal facility.

The 2010 AOC focused on demonstrating cleanup to background in soil using soil lookup table values (LUTV) as the decision level (DL). However, the AOC also strangely defined soil to include *"debris, structures, and other anthropogenic materials,"* yet was silent on how to demonstrate background for such building structural debris. In 2021, DTSC challenged/demanded DOE to show that its demolition debris (concrete, steel, wood, drywall, asphalt, miscellaneous construction materials, etc.) from four non-radiological buildings (4038, 4057, 4462 and 4463) met the AOC soil LUTV requirements,[29] an impossible and scientifically meaningless objective. To quote DTSC,

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[25] CDHS/RHB. "Building 4133, Area IV, Santa Susana Field Laboratory." March 13, 2007.
https://philrutherford.com/SSFL/DandD/4133/4133-dhsrel.pdf

[26] North Wind Portage Inc. "ETEC Radiological Survey Report for Buildings 4038 and 4057." RPP-010784-012. February 25, 2021.
https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F8871499180%2FETEC%20Rad%20Survey%20Report%20for%20Buildings%204038%20and%204057%20Rev%200%20202102 25.pdf

[27] North Wind Portage Inc. "ETEC Radiological Survey Report for Buildings 4462 and 4463." RPP-010784-11.1. February 25, 2021.
https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F8325884759%2FETEC%20Rad%20Survey%20Report%20for%20Buildings%204462%20and%204463%20Rev%200%202019 1118.pdf

[28] DOE. "Final SSFL Area IV EIS." Section 2.5.2.
https://www.energy.gov/sites/default/files/2018/12/f58/final-eis-0402-etec-2018-12-volume-1.pdf

[29] Letter from Steven Becker (DTSC) to John Jones (DOE). "Revisions to Standard Operating Procedures and Associated Documents for Demolition of the Four Remaining Buildings at the Energy Technology Engineering Center, Santa Susana Field Laboratory. Simi Valley, California." February 11, 2021.
https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F6300267100%2FLetter%20to%20DOE%20Dated%2020210211%20Regarding%20SOP%20Revision%20for%20ETEC%20Buildings%204038%204057%204462%204463.pdf.
Highlighted version.

> *"The proposed characterization shall demonstrate if the building materials have detectable radiological contamination above local background (based on comparison with the Draft Provisional Radiological Look-Up Table Values and following measurement quality objectives and data quality objectives consistent with those cited in Section 2.12 of the AOC)."* [Underline added for emphasis]

The EPA's Radiological Background Study and Area IV Radiological Study focused on surface soil, sub-surface soil and sediment. EPA did not sample, analyze or establish LUTVs for any *"debris, structures, and other anthropogenic materials."*

DOE declined this impossible directive and consequently, DTSC forced DOE to send all clean building debris to a low-level radioactive waste disposal site. In doing so,

- DOE brought down buildings 4462 and 4463 by explosive demolition, that DTSC and DOE had declared to be radioactive waste [30]
- DOE contractor certified invalid data in NRC radioactive waste manifests [31]
- DOE failed to respond to a complaint submitted to the DOE Office of Inspector General (OIG) [32] and
- DOE failed to respond to a FOIA request for records of the OIG and Environmental Management (EM) investigations. [33, 34]

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https://philrutherford.com/SSFL/doe_building_demolition/Letter_to_DOE_Dated_20210211_Regarding_SOP_Revision_for_ETEC_Buildings_4038_4057_4462_4463_highlighted.pdf

[30] YouTube. "Energy Technology Engineering Center Sodium Pump Test Facility Demolition." https://www.youtube.com/watch?v=Pu9x64QPLZ4&t=1s

[31] Rutherford. Letter to DOE Management. "FOIA EMCBC-2022-00149-F Data Package." January 10, 2023. https://philrutherford.com/SSFL/doe_building_demolition/FOIA/Response_to_FOIA_Data_Package_Revised.pdf

[32] Rutherford. Letter to DOE Office of Inspector General. "Shipments of Waste from the former Energy Technology Engineering Center." February 10, 2023. https://philrutherford.com/SSFL/doe_building_demolition/FOIA/DOE_IG_Letter_2023-02-10.pdf

[33] Rutherford. Letter to the House Committee on Oversight and Accountability. "Whistleblower Complaint - Falsification of Waste Shipping Records from the Department of Energy's Energy Technology Engineering Center (ETEC)." September 23, 2024. https://philrutherford.com/SSFL/doe_building_demolition/FOIA/2024-09-23_Letter_to_Committee_on_Oversight_and_Accountability.pdf

[34] Rutherford. "Falsification of DOE Waste Shipping Records at the Energy Technology Engineering Center." November 17, 2021, through December 23, 2024. https://philrutherford.com/ssfl.html#wastefoia

5. Soil LUTVs

Page 10 of the NOI states, *"In December 2012, EPA provided to DTSC its cleanup value recommendations to be included in the Look-Up Table (LUT) for radionuclides, and DTSC released provisional radionuclide Look-Up Table values in January 2013. In June 2013, DTSC provided Look-Up Table values for 125 of the most frequently observed chemicals at the site."*

Comments/questions on the LUTV implementability issues raised by the Soil Smarts Workshops and other related issues were provided to DTSC via its STREAM platform and provided to DOE via email on December 19, 2024. [35,36] These comments are incorporated by reference, but are not repeated here.

In the event that DOE publishes updated LUTVs during the initial 60-day SEIS comment period, then these preliminary SEIS comments and LUTV related comments will doubtless be updated.

[35] Rutherford, "Radionuclide Questions for Soil Smarts Workshops (Revision A)." December 3, 2024. https://philrutherford.com/SSFL/DTSC/STREAM/Radionuclide_Questions_for_Soil_Smarts_Workshops_Rev_A.pdf

[36] Rutherford, "Chemical Questions and Observations on Data Presented in Soil Smarts Workshops." December 7, 2024. https://philrutherford.com/SSFL/DTSC/STREAM/Chemical_Questions_on_Soil_Smarts_Workshops.pdf