



DEPARTMENT OF ENERGY

Draft Environmental Assessment for the Commercial Disposal of Savannah River Site Contaminated Process Equipment

AGENCY: Office of Environmental Management, U.S. Department of Energy.

ACTION: Notice.

SUMMARY: The U.S. Department of Energy (DOE) announces its intent to prepare a draft environmental assessment (EA) pursuant to the National Environmental Policy Act of 1969 (NEPA) to dispose of contaminated process equipment from the Savannah River Site (SRS) at a commercial low-level radioactive waste (LLW) disposal facility located outside of South Carolina licensed by either the Nuclear Regulatory Commission (NRC) or an Agreement State. This effort will analyze capabilities for alternative disposal options through the use of existing, licensed, off-site commercial disposal facilities. The SRS contaminated process equipment would be characterized, stabilized as appropriate, and packaged, and if the waste acceptance criteria and performance objectives of a specific disposal facility are met, DOE could consider whether to dispose of the waste as LLW under the Department's interpretation of the statutory term "high-level radioactive waste" (HLW) as defined in the Atomic Energy Act of 1954, as amended (AEA), and Nuclear Waste Policy Act of 1982, as amended (NWPA). As a result of this NEPA process, DOE may consider what actions, if any, are needed and appropriate to implement any decision to dispose of the SRS contaminated process equipment as LLW.

ADDRESSES: This *Federal Register* Notice is available on <https://www.energy.gov/em/high-level-radioactive-waste-hlw-interpretation>. The Draft Environmental Assessment for the Commercial Disposal of Savannah River Site Contaminated Process Equipment (Draft EA) will also be made available at this website.

FOR FURTHER INFORMATION CONTACT: Theresa Kliczewski and/or James Joyce, U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM-4.2), 1000 Independence Avenue SW, Washington, DC 20585. Emails: Theresa.Kliczewski@em.doe.gov and James.Joyce@em.doe.gov. Phone number: (202) 586-5000.

SUPPLEMENTARY INFORMATION:

Background

SRS occupies approximately 300 square miles primarily in Aiken and Barnwell Counties, South Carolina. Until the early 1990s, the primary SRS mission was the production of special radioactive isotopes to support national defense programs. More recently, the SRS mission has emphasized waste management, environmental restoration, and the decontamination and decommissioning of facilities that are no longer needed for SRS's traditional defense activities.

The SRS contaminated process equipment is generated during the on-site treatment of the reprocessing waste. The Draft EA will analyze commercial disposal options for three specific types of process equipment contaminated with reprocessing waste: Tank 28F salt sampling drill string, glass bubblers, and glass pumps. These waste streams do not meet the criteria for disposal at existing SRS disposal facilities given the waste form, radionuclide inventory, dose rates, and internal lead shielding.

The Tank 28F salt sampling drill string was used to collect reprocessing waste samples from the waste storage tank. The drill string consists of steel piping measuring 2.25 inches outer diameter by 41 feet long, contaminated with reprocessing waste (supernatant) from Tank 28F. Contaminants include a mixture of beta, gamma, and alpha emitting radionuclides (e.g., cesium

137 and plutonium 238). The drill string is currently stored in a large container on-site until a disposal path can be established.

The glass bubblers are used to increase efficiency of Defense Waste Processing Facility (DWPF) melter operations, where high-activity tank waste is vitrified into glass under high-temperature. Each bubbler is comprised of a ¾ inch Schedule 160 Inconel pipe, which is inserted into the DWPF melter and through which an inert gas is introduced to increase melter efficiency. Approximately three feet of the lower portion of the bubbler was in the melt pool and contains contaminated glass, including transuranic radionuclides (e.g., plutonium 238) and short-lived radionuclides (e.g., cesium 137). SRS currently has approximately 60 contaminated bubblers in storage and will generate four contaminated glass bubblers every six months until DWPF operations are completed in the 2034 timeframe.

The glass pumps were used to support melter efficiency and are no longer in use at SRS having been replaced by the glass bubblers. Each pump is comprised of an Inconel pipe, measuring approximately 3 5/8 inches in outer diameter. The lower two feet was in the melt pool and contains contaminated glass similar to the glass bubblers. There are approximately 10 glass pumps in storage at SRS requiring final disposal.

In August 2020, DOE completed its first NEPA analysis and waste determination for a waste stream (SRS DWPF recycle wastewater) under the HLW interpretation.¹ This was implemented in accordance with the June 10, 2019 *Supplemental Notice Concerning U.S. Department of Energy Interpretation of High-Level Radioactive Waste*² (Supplemental Notice) in which DOE provided its interpretation of the statutory term HLW as defined in the AEA³ and NWPA⁴.

Purpose and Need for Action

¹ NEPA documents and technical documents for the commercial disposal of DWPF recycle wastewater from SRS under the HLW interpretation can be found at: <https://www.energy.gov/em/program-scope/high-level-radioactive-waste-hlw-interpretation>.

² 84 FR 26835.

³ 42 U.S. C. 2011 et seq.

⁴ 42 U.S.C. 10101 et seq.

Currently there is no disposal pathway for the SRS process equipment contaminated with reprocessing waste (Tank 28F salt sampling drill string, glass bubblers, and glass pumps). DOE's purpose and need for this action is to dispose of SRS contaminated process equipment at a commercial LLW facility outside of South Carolina and licensed by either the NRC or an Agreement State under 10 CFR part 61. Therefore, no NEPA analyses on disposal at Federal facilities will be conducted. Any proposal to dispose of additional SRS process equipment contaminated with reprocessing waste, other than those identified and analyzed in the Draft EA, would be evaluated in separate NEPA documentation. Disposal of the SRS contaminated process equipment at a licensed off-site commercial LLW facility would help to mitigate on-site storage constraints, improve worker safety, and support accelerated completion of the environmental cleanup mission at SRS.

Proposed Action and Alternatives

Under the proposed action, DOE would dispose of the SRS contaminated process equipment (Tank 28F salt sampling drill string, glass bubblers, and glass pumps) at a commercial LLW facility outside of South Carolina and licensed by either the NRC or an Agreement State under 10 CFR part 61. The Draft EA will analyze the potential environmental impacts associated with the proposed commercial disposal of the contaminated process equipment. Prior to a disposal decision, DOE would characterize the contaminated process equipment to verify with the licensed off-site commercial LLW disposal facility whether the waste meets DOE's HLW interpretation for disposal as non-HLW, in accordance with DOE Order 435.1, *Radioactive Waste Management*, DOE Manual 435.1-1, *Radioactive Waste Management Manual*, and consistent with the Supplemental Notice. DOE would also demonstrate compliance with the waste acceptance criteria and all other requirements of the disposal facility, including any applicable regulatory requirements (e.g., Resource Conservation and Recovery Act) for treatment of the waste prior to disposal and applicable Department of Transportation

requirements for packaging and transportation from SRS to the commercial disposal facility. DOE has identified two action alternatives for the proposed action:

- *Alternative 1* – If determined to be Class A LLW,⁵ stabilize and package the waste at SRS and ship to either *EnergySolutions*⁶ in Clive, Utah or Waste Control Specialists, LLC (WCS) in Andrews County, Texas for disposal. This is dependent upon waste content and compliance with facility waste acceptance criteria.
- *Alternative 2* – If determined to be Class B or C LLW, stabilize and package the waste at SRS and ship to WCS. This is dependent upon waste content and compliance with facility waste acceptance criteria.

The EA will also analyze a no action alternative under which the contaminated process equipment would remain in storage at SRS until disposition occurs.

Potential Areas of Environmental Analysis

DOE has tentatively identified the following areas for detailed analysis in the EA: human health and safety; land use; air quality; water, cultural, and ecological resources; waste management; socioeconomics; and transportation. This list is not intended to be comprehensive or to predetermine the potential impacts to be analyzed. The level of analysis for different impacts will be in proportion to their significance.

NEPA Process and Public Participation

DOE will prepare the Draft EA in accordance with the Council on Environmental Quality regulations at 40 CFR parts 1500–1508 and DOE NEPA implementing procedures at 10 CFR part 1021. DOE plans to issue a *Federal Register* notice in 2021 on the availability of the Draft EA. Based on the EA analysis, DOE will either issue a Finding of No Significant Impact or announce its intention to prepare an environmental impact statement.

⁵ In its 10 CFR part 61 regulations, NRC has identified classes of LLW—Class A, B, or C—for which near-surface disposal is safe for public health and the environment. This waste classification regime is based on the concentration levels of a combination of specified short-lived and long-lived radionuclides in a waste stream, with Class C LLW having the highest concentration levels.

⁶ *EnergySolutions* is currently licensed to only dispose of Class A LLW and mixed LLW.

Signing Authority

This document of the Department of Energy was signed on January 12, 2021 by Mark A. Gilbertson, Associate Principal Deputy Assistant Secretary for Regulatory and Policy Affairs, Office of 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 at Washington, DC on January 13, 2021.

Treena V. Garrett,
Federal Register Liaison Officer,
U.S. Department of Energy

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