



**UNITED STATES
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June 6, 2018

MEMORANDUM TO: Michele Sampson, Acting Deputy Director
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

THRU: Maria Arribas-Colon, Acting Chief
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SUBJECT: GUIDANCE FOR THE JULY 9-11, 2018, MONITORING ONSITE
OBSERVATION VISIT TO THE SAVANNAH RIVER SITE, SALTSTONE
DISPOSAL FACILITY

The U.S. Nuclear Regulatory Commission (NRC) staff is planning an onsite observation visit on July 9-11, 2018, to the U.S. Department of Energy, Savannah River Site, Saltstone Disposal Facility to monitor activities related to the disposal of non-high-level waste, per the NRC responsibilities under the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005.

The enclosed guidance describes the areas of focus for the onsite observation visit. The detailed agenda and summary will be included in the onsite observation visit report.

Enclosure:
Guidance for Onsite Observation Visit

cc: (w/ Enclosure)
WIR Service List
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SUBJECT: GUIDANCE FOR THE JULY 9-11, 2018, MONITORING ONSITE OBSERVATION VISIT TO THE SAVANNAH RIVER SITE, SALTSTONE DISPOSAL FACILITY **DATE June 6, 2018**

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GUIDANCE FOR THE JULY 9-11, 2018, MONITORING ONSITE OBSERVATION VISIT TO THE SAVANNAH RIVER SITE SALTSTONE DISPOSAL FACILITY

PURPOSE:

The purpose of this document is to provide guidance for a planned monitoring onsite observation visit (OOV) on July 9-11, 2018, to the U.S. Department of Energy (DOE) Savannah River Site (SRS) Saltstone Disposal Facility (SDF) to monitor activities related to the disposal of non-high-level waste, per the U.S. Nuclear Regulatory Commission (NRC) responsibilities under Section 3116(b) of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (NDAA).

OBJECTIVES:

1. Observation and technical review of activities and documentation; and
2. Follow-Up Action Items from previous OOVs, technical review reports (TRRs), or teleconference calls.

BACKGROUND:

NDAA Section 3116(a) authorizes the DOE, in consultation with the NRC, to determine whether certain radioactive waste related to the reprocessing of spent nuclear fuel is not high-level waste provided certain criteria are met. NDAA Section 3116(b) requires the NRC to monitor the DOE disposal actions to assess compliance with Title 10, *Code of Federal Regulations* (10 CFR), Part 61, Subpart C performance objectives for low-level waste. Per NDAA Section 3116(a), by letter dated March 31, 2005, the DOE submitted the "Draft Section 3116 Determination, Salt Waste Disposal, Savannah River Site" (draft WD) to the NRC for review. The purpose of the DOE draft WD was to demonstrate compliance with the criteria in NDAA Section 3116(a), including compliance with the performance objectives (POs) in 10 CFR Part 61, Subpart C. Per the NRC NDAA consultation role, the NRC staff reviewed the DOE draft WD. In December 2005, the NRC staff documented the results of its review in a Technical Evaluation Report (TER), where the NRC concluded that there was reasonable assurance that the applicable NDAA criteria could be met, provided that certain assumptions made in the DOE analysis were verified during monitoring. The DOE issued a final Waste Determination in January 2006, which took into consideration the assumptions, conclusions, and recommendations documented in the NRC TER.

Per the NRC NDAA Section 3116(b) monitoring role, the NRC issued Revision 0 of the SDF Monitoring Plan in May 2007. In November 2009, the DOE issued an updated performance assessment (PA), "2009 Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site." Following extensive discussions with the DOE, the NRC staff completed its review and documented the NRC conclusions in a TER dated April 30, 2012 (ADAMS Accession No. ML121020140). In the 2012 SDF TER, the NRC concluded that it did not have reasonable assurance that the PO in §61.41 would be met. However, the NRC concluded that the §61.42, §61.43, and §61.44 POs were met. Per the NRC NDAA Section 3116(b) monitoring role, the NRC issued Revision 1 of the SDF Monitoring Plan in September 2013. This guidance

ENCLOSURE

for the SRS SDF OOV was developed in accordance with the NRC 2013 SDF Monitoring Plan to ensure consistency in the NRC staff NDAA Section 3116(b) monitoring activities. The NRC 2013 SDF Monitoring Plan is available in ADAMS at Accession No. ML13100A113.

OBSERVATION REQUIREMENTS:

This OOV of the disposal actions taken by the DOE at the SRS SDF focuses on the POs set out in 10 CFR Part 61, Subpart C. Those POs are: (i) protection of the general population from releases of radioactivity (§61.41), (ii) protection of individuals against inadvertent intrusion (§61.42), (iii) protection of individuals during operations (§61.43), and (iv) stability of the disposal site after closure (§61.44). The NRC staff will use the following information to direct the activities during this OOV.

Observation and Technical Review of Activities and Documentation:

The NRC plans to conduct the following activities during this OOV (and next to each activity is the associated monitoring factor(s) (MFs) from the NRC 2013 SDF Monitoring Plan):

1. Discuss recent operations, including saltstone disposal volumes and inventory, the leak detection system, and worker dose. (MF 1.01, MF 1.02, MF 8.01, & MF 11.01)
2. Tour the site, including:
 - a. Construction of Saltstone Disposal Structure (SDS) 7. (MF 6.03, MF 6.04, & MF 6.05); and
 - b. Z-Area perimeter (from vehicle on perimeter road). (MF 6.04 & MF 8.02)
3. If saltstone is being poured, then observe saltstone production facility operations. (MF 1.01, MF 3.02, MF 3.03, MF 4.02, & MF 11.01)
4. Discuss the recent DOE research with samples of cores from SDS 2A. (MF 3.03, MF 5.01, MF 5.02, MF 5.03, & MF 5.04).
5. Discuss the DOE document: SRR-CWDA-2018-00006, Rev. 0, "Conceptual Model Development for the Saltstone Disposal Facility Performance Assessment," May 2018. (ML18143B265) (MF 10.02)
6. Provide opportunity for the DOE to ask questions about the NRC TRRs issued since April 2016:
 - a. TRR: "Quality Assurance Documentation for the Cementitious Barriers Partnership Toolbox," August 2016. (ML16196A179) (MF 4.01, MF 4.02, & MF 6.04);
 - b. TRR: "Dose Calculation Methodology for Liquid Waste Performance Assessments at the Savannah River Site," December 2016. (ML16277A060) (MF 10.07 & MF 10.08);

- c. TRR: "Iodine Sorption Coefficients for Use in Performance Assessments for the Saltstone Disposal Facility," January 2017. (ML16342C575) (MF 5.04, MF 6.01, MF 7.01, MF 10.04, MF 10.06, & MF 10.09);
- d. TRR: "Saltstone Waste Form Hydraulic Performance," March 2017. (ML17018A137) (MF 3.01, MF 3.02, MF 3.03, MF 3.04, & MF 10.05);
- e. TRR: "Performance of the High Density Polyethylene Layer, High Density Polyethylene/Geosynthetic Clay Liner Composite Layer, and the Lower Lateral Drainage Layer," April 2017. (ML17081A187) (MF 6.03 & MF 10.02);
- f. TRR: "Hydraulic Performance and Erosion Control of the Planned Saltstone Disposal Facility Closure Cap and Adjacent Area," January 2018. (ML18002A545) (MF 2.01, MF 2.02, & MF 10.02);
- g. TRR: "Groundwater Monitoring at and Near the Planned Saltstone Disposal Facility," May 2018. (ML18117A494) (MF 8.02 & MF 10.02); and
- h. TRR: "Update on Projected Technetium Release from Saltstone," May 2018. (ML18095A122) (MF 5.01, MF 5.02, MF 5.03, MF 5.05, MF 6.02, & MF 10.02).

Follow-Up Action Items from previous OOVs, TRRs, or teleconference calls:

- 1 SDF-CY16-01-013:
The DOE to provide the NRC with velocity field and cross-section through the Z-Area.
- 2 SDF-CY17-01-002:
The DOE to provide the NRC with a map identifying locations for pictures from tours from the 2017 OOV.

Completion of any observation or technical review of activities and documentation, including Follow-Up Action Items, is dependent on either the DOE performing the activity and/or the availability of the documentation during this OOV.