



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 23, 2018

Ms. Elizabeth Connell, Director
Regulatory, Intergovernmental,
and Stakeholder Engagement
Office of Environmental Mgmt.
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

SUBJECT: JOINT PLAN FOR THE SAVANNAH RIVER SITE SALTSTONE DISPOSAL
FACILITY

Dear Ms. Connell:

The purpose of this letter is to transmit the enclosed Joint Plan, developed by the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE), which identifies the information needed to support an NRC finding of reasonable assurance that the DOE demonstrated meeting the Title 10, *Code of Federal Regulations* Part 61 Subpart C Performance Objectives at the DOE Savannah River Site Saltstone Disposal Facility. Such an NRC finding would resolve the concerns in the NRC letter to the DOE dated April 30, 2012 (Agencywide Documents Access and Management System Accession No. ML120650576).

If you have any questions or need additional information, then please contact Harry Felsher of my staff at Harry.Felsher@nrc.gov or at (301) 415-6559.

Sincerely,

/RA/

John R. Tappert, Director
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No. PROJ0734

Enclosure:
Joint Plan for the Savannah River
Site Saltstone Disposal Facility

cc: J. Folk, DOE
S. Wilson, SCDHEC
WIR Service List
WIR ListServ

SUBJECT: JOINT PLAN FOR THE SAVANNAH RIVER SITE SALTSTONE DISPOSAL FACILITY **DATE: October 23, 2018**

DISTRIBUTION: KPinston GAlexander HArtt
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ADAMS ACCESSION NO. ML18235A068

***via email**

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JOINT PLAN FOR THE SAVANNAH RIVER SITE SALTSTONE DISPOSAL FACILITY

The purpose of this Joint Plan is to identify what information is needed from the U.S. Department of Energy (DOE) to support an U.S. Nuclear Regulatory Commission (NRC) finding of reasonable assurance that the DOE demonstrated meeting the Title 10, *Code of Federal Regulations* Part 61 (10 CFR) Subpart C Performance Objectives (POs) at the DOE Savannah River Site (SRS) Saltstone Disposal Facility (SDF).

The NRC determined that resolving the current High-Priority monitoring factors (MFs) from the 2013 NRC SDF Monitoring Plan (NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML13100A113), as supplemented by the NRC letters listed below to the DOE, would support an NRC staff finding of reasonable assurance that the DOE had demonstrated meeting the 10 CFR Part 61 POs. The NRC requested schedule input from the DOE on when information related to those High-Priority monitoring factors would be provided to the NRC. The DOE provided the current anticipated schedule of providing that information to the NRC. However, if any of the following occurs, then the NRC expects that either the risk-significance and prioritization of the SDF monitoring factors may be affected or new SDF monitoring factors may be created, which would need to be addressed by the DOE in order for the NRC to reach a finding of reasonable assurance and issue an NRC Type-V Letter of Resolution: (1) significant future changes in either the DOE model or the DOE model assumptions; or (2) future research or future field observations that significantly increase uncertainty or demonstrate significantly worse than expected performance at the SDF.

The information in this publicly available NRC/DOE Joint Plan mostly exists in publicly available NRC and DOE documents. It is important for all stakeholders to understand that: (1) the DOE may decide at any time to change their schedule for providing information to the NRC; (2) the Joint Plan is expected to change over time; and (3) the Joint Plan relies on future NRC and DOE research results.

Currently, the 2013 NRC SDF Monitoring Plan (Rev. 1, September 2013) (ADAMS Accession No. ML13100A113), as supplemented by NRC letters to the DOE listed below, is the primary source for the NRC information used to develop the Joint Plan:

- In the letter dated June 5, 2017, (ADAMS Accession No. ML17097A351), the NRC closed MF 3.01, MF 3.02, and MF 3.04 under both the POs §40.41 and §40.42.
- In the letter dated March 1, 2018, (ADAMS Accession No. ML18033A071), the NRC clarified the number of monitoring factors in the SRS SDF and Tank Farms Monitoring Plans, such that the total number of monitoring factors when the SDF Monitoring Plan, Rev. 1 was created was 40.
- In the letter dated June 29, 2018, (ADAMS Accession No. ML18107A161), the NRC opened the new MF 10.14 (Scenario Development and Defensibility) under both the POs §40.41 and §40.42.

Enclosure

- In the letter dated October 16, 2018, (ADAMS Accession No. ML18219B035), the NRC: (1) opened the new MF 8.03 (Identification and Monitoring of Groundwater Plumes in the Z-Area) under the three POs §61.41, §61.42, and §61.43; (2) lowered the priority of MF 5.02 (Chemical Reduction of Technetium by Saltstone) from high to medium under both POs §61.41 and §61.42; (3) closed MF 5.05 (Potential for Short-Term Rinse-Release from Saltstone) under both POs §61.41 and §61.42; and (4) closed MF 6.02 (Technetium Sorption in Disposal Structure Concrete) under both POs §61.41 and §61.42.

Currently, the *DOE SRS Liquid Waste Performance Assessment Maintenance Program Fiscal Year 2017 Implementation Plan* (SRR-CWDA-2016-00119, Rev. 0, January 2017) (ADAMS Accession No. ML17047A418), which is updated annually by the DOE, is the primary source for the DOE information used to develop the Joint Plan.

WASTE INCIDENTAL TO REPROCESSING BACKGROUND:

As required by Section 3116(b) of the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005* (NDAA), the NRC, in coordination with the NDAA-Covered State, monitors the DOE disposal actions at the DOE NDAA Waste Incidental to Reprocessing (WIR) locations to determine DOE compliance with the five POs in Subpart C of 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

For each of the specific DOE NDAA-WIR locations, the NRC issued a monitoring plan that includes such activities as: technical reviews, data reviews, and onsite observation visits (OOVs). When the NRC performs those activities, the NRC issues publicly available Technical Review Reports (TRRs), Data Review Reports, and OOV Reports.

The current programmatic DOE documents for all the DOE WIR locations (both NDAA and not NDAA) are DOE Order 435.1, *Radioactive Waste Management*, associated DOE Manual 435.1-1, *Radioactive Waste Management Manual*, and other associated DOE guidance. In those DOE documents, the DOE requires the ongoing maintenance of all performance assessments (PAs), which is done by an annual site-specific implementation plan that includes: (1) annual maintenance program activities; (2) PA development/revisions (i.e., both in-progress and future), and (3) testing and research activities.

Note that it is a routine NRC/DOE WIR process that the DOE provides research plans to the NRC for review during NDAA monitoring. Many times during previous NDAA monitoring activities, the DOE provided the NRC with the DOE research plans or path forward plans. In response, the NRC provided recommendations on those DOE research plans or path forward plans back to the DOE. Both the NRC and the DOE consider that NRC/DOE coordination on research plans or path forward plans to be successful. Accordingly, the NRC and the DOE plan to continue NRC/DOE coordination on future research plans or path forward plans.

MONITORING AT THE SAVANNAH RIVER SITE SALTSTONE DISPOSAL FACILITY:

In 2009, the DOE submitted a new SDF PA (October 2009, Rev. 0, ADAMS Accession No. ML101590008) to the NRC for review. In 2012, the NRC issued the second SDF Technical Evaluation Report (TER) (April 30, 2012, Rev. 1, ADAMS Accession No. ML121170309). The 2012 NRC SDF TER contained the NRC review, including detailed descriptions of the NRC staff evaluation and a summary table in Appendix A that linked a concise statement of each NRC technical concern with the sections of that TER that provided more detailed descriptions of

those NRC technical concerns. Also on April 30, 2012, the NRC issued the Type-IV Letter of Concern (ADAMS Accession No. ML120650576). The NRC will issue a Type-IV Letter of Concern to the DOE and the NDAA-Covered State when the NRC staff concludes that there are concerns with the DOE demonstration of meeting the POs and the DOE cannot adequately address those NRC concerns. The Appendix A summary table of NRC technical concerns in the 2012 NRC SDF TER was revised to identify the monitoring factors in the 2013 NRC SDF Monitoring Plan.

In the 2013 NRC SDF Monitoring Plan, the NRC staff included tables that provided the NRC staff prioritization of the monitoring factors based on the 2012 NRC SDF TER. The current versions of the NRC staff prioritization of the SDF monitoring factors are included below. The current NRC review of the DOE disposal actions at the SDF is based on the DOE documents that supplemented the 2009 SDF PA. After the NRC issues a new SDF TER, the NRC expects to issue a revised SDF monitoring plan, which may have updates to monitoring areas, monitoring factors, and the NRC staff prioritization of those monitoring factors.

CURRENT TABLE FOR CLOSING HIGH PRIORITY DOE SRS SDF MONITORING FACTORS

The Table below provides the status of progress of the DOE activities, as described in the 2013 NRC SDF Monitoring Plan and as supplemented by the NRC letters to the DOE listed above in the Joint Plan, for the NRC to close the High Priority monitoring factors for the DOE SRS SDF. The following bullets provides the sources of information for the Table below:

- The 2013 NRC SDF Monitoring Plan dated September 2013 (ADAMS Accession No. ML13100A113) includes tables that link each 10 CFR Part 61 PO to one or more monitoring areas and links each monitoring area to one or more monitoring factor.
- The 2012 NRC SDF TER dated April 30, 2012, (ADAMS Accession No. ML121170309) contained the NRC technical concerns, which were summarized in a concise form in the summary table in Appendix A. The NRC technical concerns led to the 2012 NRC Type-IV Letter of Concern, dated April 30, 2012, (ADAMS Accession No. ML120650576). The High Priority monitoring factors are in the column entitled, "High Priority MF # and Title" in the Table. Note that the current NRC staff prioritization tables for all the SDF monitoring factors are also included below.
- In each monitoring factor in the 2013 NRC SDF Monitoring Plan and as supplemented by the NRC letters to the DOE listed above in the Joint Plan, there is a description for how the NRC expects to close that monitoring factor.
- For each fiscal year, the DOE updates the *SRS PA Maintenance Program Implementation Plan*, which includes the DOE plans to address the SDF monitoring factors. The most recently issued version of that DOE document is SRR-CWDA-2016-00119, Rev. 0, dated January 2017 (ADAMS Accession No. ML17047A418).
- For consistency in the Table below, the NRC used standard formatting and changed the DOE terminology to the NRC terminology.

CURRENT TABLE FOR CLOSING HIGH PRIORITY DOE SRS SDF MONITORING FACTORS

POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
Monitoring Area (MA) 1 – Inventory – No Current High Priority Monitoring Factors						
MA 2 – Infiltration and Erosion Control – No Current High Priority Monitoring Factors						
MA 3 – Waste Form Hydraulic Performance						
§61.41 and §61.42	3.03 – Applicability of Laboratory Data to Field-Emplaced Saltstone	<p>The NRC expects to close MF 3.03 under both POs §61.41 and §61.42 after the NRC determines that representing the hydraulic properties of field-emplaced saltstone with the hydraulic properties of laboratory-produced samples is adequate. That assessment should account for the range of expected disposal conditions of field-emplaced saltstone as well as effects of scale.</p> <p>Alternately, MF 3.03 may be closed if the NRC determines that the DOE bases the hydraulic properties of saltstone on the properties of an appropriate range of samples of field-emplaced saltstone, rather than on measurements of</p>	<p>Section 2.3.3.1 – Measure Physical Properties of Laboratory Prepared Saltstone Simulant Samples, Actual Tank 50 Salt Solution Samples, Saltstone In-Line Process Sample, and [SDS] 2A Emplaced Core Sample</p> <p>Laboratory prepared and processed room samples will have physical properties testing performed to determine the hydraulic conductivity, K_d, bulk cured density, porosity, and micro structure/phase analysis. Future testing will compare these properties to those measured from field-emplaced core sampling.</p>	<p>The saltstone sampling and analysis plan established a strategy for studies to reduce Performance Assessment uncertainty in the area of saltstone hydraulic conductivity and for correlating grout properties between laboratory-prepared samples and core-drilled samples from actual emplaced grout. A variety of laboratory testing has been completed, including one in which samples were cured under conditions similar to those expected for field-emplaced saltstone. The results were incorporated into the FY 2014 SDF Special Analysis Document.</p> <p>Multiple cores were extracted via a wet core drilling process in FY 2015 approximately 20 months after the saltstone of interest was processed in the Saltstone Processing Facility and subsequently emplaced in SDS 2A. The physical property</p>	<p>On 03/23/2017, the NRC issued the TRR entitled, <i>Saltstone Waste Form Hydraulic Performance</i> (ADAMS Accession No. ML17018A137) related to MF 3.01, MF 3.02, MF 3.03, MF 3.04, and MF 10.05, recommended to close MF 3.01, MF 3.02, and MF 3.04; recommended to narrow the focus of MF 3.03, and included information needed from the DOE to close MF 3.03 and MF 10.05.</p> <p>On 06/05/17, the NRC sent a letter to the DOE (ADAMS Accession No. ML17097A351) that closed MF 3.01 under both POs §61.41 and §61.42; MF 3.02 under both POs §61.41 and §61.42; and MF 3.04 under both POs §61.41 and §61.42.</p>	February 2020

		laboratory-produced samples.		data for field-emplaced and laboratory-prepared samples is summarized in the SDS 2A Core Sampling Report (SRR-CWDA-2016-00051) with values for SDF model inputs provided in the report where applicable. No further specific work regarding field-emplaced saltstone is planned for this monitoring factor.	Even though the DOE Comments indicate that “No further specific work...” will be done by the DOE, the DOE is currently performing dynamic leaching experiments on SDS 2A cores that are expected to address the issues remaining in the narrowed scope of MF 3.03.	
POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
MA 4 – Waste Form Physical Degradation						
§61.41 and §61.42	4.01 – Waste Form Matrix Degradation	The NRC expects to close MF 4.01 under both POs §61.41 and §61.42 after the NRC determines that support for modeled changes in the saltstone hydraulic conductivity and diffusivity during the performance period is sufficient.	<p>Section 2.3.2.2 – Studies Related to Cementitious Materials Degradation Due to Radiation Damage</p> <p>A literature search will be conducted to gain a better understanding of the potential degradation of cementitious materials exposed to radiation.</p> <p>Section 2.2.1 – Prepare Out-Year Saltstone Disposal Facility Performance Assessment Revisions</p> <p>This section describes future revisions to the Performance Assessment that will incorporate improvements to conceptual modeling.</p>	The degradation models for concrete and saltstone grout were revised for the FY 2014 SDF Special Analysis Document to incorporate greater conservatisms and to modify inputs to implicitly model fractures in the matrix.	In the NRC Request for Additional Information (RAI) Comments on the DOE FY 2013 SDF Special Analysis Document (ADAMS Accession No. ML14148A153) and the RAI Questions on the FY 2014 SDF Special Analysis Document (ADAMS Accession No. ML15161A541), the NRC raised concerns related to the DOE waste form degradation assumptions, including justification for the assumed controlling degradation mechanism and the adequacy of the linear degradation rate to compensate for additional degradation mechanisms.	February 2020

					<p>The NRC staff is currently reviewing the DOE revised modeling of waste form physical degradation from the DOE FY 2014 SDF Special Analysis Document and that NRC staff review will be documented in a forthcoming TRR.</p> <p>In addition, when the DOE submits the next SDF performance assessment in February 2020, the NRC will evaluate whether the model support for the amount of credit taken for long-term performance of the waste form is sufficient.</p>	
POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
§61.41 and §61.42	4.02 – Waste Form Macroscopic Fracturing	The NRC expects to close MF 4.02 under both POs §61.41 and §61.42 after the NRC determines that model support for the assumed formation of macroscopic fractures during the performance period is sufficient.	<p>Section 2.3.2 – Degradation Studies</p> <p>Previous testing and research activities were carried out to provide a better understanding of degradation mechanisms and fracturing. See the DOE document SRNL-STI-2013-00522.</p>	The degradation models for concrete and saltstone grout were revised based on FY 2013 test data for the FY 2014 SDF Special Analysis Document to incorporate greater conservatisms and to modify inputs to implicitly model fractures in the matrix.	In the NRC Request for Information (RAI) Comments on the DOE FY 2013 SDF Special Analysis Document (ADAMS Accession No. ML14148A153) and the RAI Questions on the FY 2014 SDF Special Analysis Document (ADAMS Accession No. ML15161A541), the NRC raised concerns related to the DOE waste form degradation assumptions, including justification for the assumed controlling degradation mechanism	February 2020

					<p>and the adequacy of the linear degradation rate to compensate for additional degradation mechanisms.</p> <p>The NRC staff is currently reviewing the DOE revised modeling of waste form physical degradation from the DOE FY 2014 SDF Special Analysis Document and that NRC staff review will be documented in a forthcoming TRR.</p> <p>In addition, when the DOE submits the next SDF performance assessment in February 2020, the NRC will evaluate whether the model support for the amount of credit taken for long-term performance of the waste form is sufficient.</p>	
POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
MA 5 – Waste Form Chemical Performance						
§61.41 and §61.42	5.01 – Radionuclide Release from Field-Emplaced Saltstone	The NRC expects to close MF 5.01 under both POs §61.41 and §61.42 after the NRC determines that measurements of radionuclide release rates from field-emplaced saltstone used in	<p>Section 2.3.2.1 – Long-Term Radiological Lysimeter Program</p> <p>This task is expected to provide K_d values in soil and cementitious materials as well as additional information about long-term geochemical and transport phenomena that will be used to support</p>	In June 2015, the NRC issued a TRR entitled, <i>Oxidation of Reducing Cementitious Waste Forms</i> (ADAMS Accession No. ML15098A031) related to MF 5.01, MF 5.02, MF 5.03, and MF 5.05.	On 06/05/2015, the NRC issued the TRR entitled, <i>Oxidation of Reducing Cementitious Waste Forms</i> (ADAMS Accession No. ML15098A031) related to MF 5.01, MF 5.02, MF 5.03, and MF 5.05 and included the information needed	February 2020

		<p>the performance assessment are reliable.</p>	<p>the waste release and transport models.</p> <p>Section 2.3.3.1 – Measure Physical Properties of Laboratory Prepared Saltstone Simulant Samples, Actual Tank 50 Salt Solution Samples, Saltstone In-Line Process Sample, and [SDS] 2A Emplaced Core Sample</p> <p>Laboratory prepared and processed room samples will have physical properties testing performed to determine the hydraulic conductivity, K_d, bulk cured density, porosity, and micro structure/phase analysis. Future testing will compare these properties to those measured from emplaced core sampling.</p>	<p>Studies to better quantify radionuclide release from field-emplaced saltstone are complete. Multiple cores were extracted via a wet core drilling process in FY 2015 approximately 20 months after the saltstone of interest was processed in the Saltstone Processing Facility and subsequently emplaced in SDS 2A. The physical property data for field-emplaced and laboratory-prepared samples is summarized in the DOE SDS 2A Core Sampling Report (SRR-CWDA-2016-00051) with values for SDF model inputs provided in the report where applicable. No further specific work regarding field- emplaced saltstone is planned for this monitoring factor.</p>	<p>from the DOE to close those four monitoring factors.</p> <p>The DOE is currently performing dynamic leaching experiments on SDS 2A cores that are expected to address MF 5.01; however, the DOE may need to revise model assumptions if preliminary results for Tc release and I release are supported by the results of ongoing experiments. In addition, the priority of MF 5.04 may be changed from Medium to High, depending on whether the DOE model assumptions are supported by the results of ongoing experiments with the SDS 2A cores.</p> <p>On 01/05/2017, the NRC issued the TRR entitled, <i>Iodine Sorption Coefficients for use in Performance Assessments for the Saltstone Disposal Facility (ADAMS Accession No. ML16342C5751)</i> related to MF 5.04, MF 6.01, MF 7.01, MF 10.04, MF 10.06, and MF 10.09 and included the information needed from DOE to close those six monitoring factors. In addition, because of the risk-significance of the</p>	
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					<p>assumed saltstone K_d values for iodine, the TRR recommended to expand MF 5.04 to include the sorption of iodine on saltstone and to expand MF 6.01 to include sorption of iodine on disposal structure concrete. Also, because the K_d values assumed by the DOE appear to be slightly higher than is justified and the low sorption of iodine in saltstone may cause the chemical performance of the disposal structure concrete to control the release of iodine from the engineered system, the TRR recommended expanding MF 6.01 to include sorption of iodine on disposal structure concrete. In addition, because the basis for the DOE assumed leachate impact factors and resulting leachate impacted subsurface K_d values is unclear, the TRR recommended expanding MF 7.01 to include the subsurface K_d values for iodine as well as the leachate impact factors and the leachate impacted subsurface K_d values for iodine.</p>	
MA 6 – Disposal Structure Performance – No Current High Priority Monitoring Factors						
MA 7 – Subsurface Transport – No Current High Priority Monitoring Factors						

POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
MA 8 – Environmental Monitoring						
§61.41 and §61.42	8.03 - Identification and Monitoring of Groundwater Plumes in the Z Area	The NRC expects to close MF 8.03 under both POs §61.41 and §61.42 when the NRC determines that the groundwater monitoring system in the Z-Area can: (1) identify saltstone contaminants in the groundwater in the SDF at no more than 150 ft [46 m] from a disposal structure; and (2) track the movements of the groundwater plume (e.g., know the horizontal and vertical extent of the plume; be able to follow the approximate path of the peak of the plume).	Not Applicable because MF 8.03 was created after SRR-CWDA-2016-00119 was issued	Not Applicable because MF 8.03 was created after SRR-CWDA-2016-00119 was issued	On 5/17/2018, the NRC issued the TRR entitled, <i>Groundwater Monitoring At and Near the Planned Saltstone Disposal Facility (ADAMS Accession No. ML18117A494)</i> . That TRR recommended that the NRC create MF 8.03, “Identification and Monitoring of Groundwater Plumes in the Z-Area” as a High Priority monitoring factor and included the information needed from the DOE to close MF 8.03 under both PO §61.41 and PO §61.42. On October 16, 2018, the NRC sent a letter to the DOE (ADAMS Accession No. ML18219B035 that created MF 8.03 under POs §61.41, §61.42, and §61.43.	February 2020
§61.43	8.03 - Identification and Monitoring of Groundwater Plumes in the Z Area	The NRC expects to close MF 8.03 under PO §61.43 when whichever of the following comes first: (1) when the institutional control period ends; or (2) when the NRC staff determines that the	Not Applicable because MF 8.03 was created after SRR-CWDA-2016-00119 was issued	Not Applicable because MF 8.03 was created after SRR-CWDA-2016-00119 was issued	On 5/17/2018, the NRC issued the TRR entitled, <i>Groundwater Monitoring At and Near the Planned Saltstone Disposal Facility (ADAMS Accession No. ML18117A494)</i> . That TRR recommended that the NRC create	February 2020

		groundwater monitoring system in the Z-Area can: (a) identify saltstone contaminants in the groundwater in the SDF at no more than 150 ft [46 m] from a disposal structure; and (b) track the movements of the groundwater plume (e.g., know the horizontal and vertical extent of the plume; be able to follow the approximate path of the peak of the plume).			MF 8.03, under both POs §61.41 and PO §61.42. After the July 2018 NRC Onsite Observation Visit, the NRC decided to also add MF 8.03 under PO §61.43 On October 16, 2018, the NRC sent a letter to the DOE (ADAMS Accession No. ML18219B035) that created MF 8.03 under POs §61.41, §61.42, and §61.43.	
MA 9 – Site Stability – No Current High Priority Monitoring Factors						
POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
MA 10 – Performance Assessment Model Revisions						
§61.41 and §61.42	10.01 – Implementation of Conceptual Model	The NRC expects to close MF 10.01 under both POs §61.41 and §61.42 after the DOE updates the SDF performance assessment and the NRC determines that intermediate model results are consistent with the conceptual models, quality assurance methods used are appropriate, and	Section 2.2.1 – Prepare Out-Year Saltstone Disposal Facility Performance Assessment Revisions This section describes future revisions to the SDF performance assessment that will incorporate improvements to conceptual modeling.	The FY 2014 SDF Special Analysis Document provides a revised model with a number of important updates. With it, the DOE also provides more intermediate results and evidence of quality assurance practices.	The NRC staff is currently reviewing the DOE implementation of the DOE document entitled “Conceptual Model Development for the Saltstone Disposal Facility Performance Assessment” (SRR-CWDA-2018-00006, Rev. 0) and will review the implementation of conceptual models in the expected future DOE SDF performance assessment.	The schedule is tied to the schedule for the revision to the DOE SDF performance assessment and supplements (i.e., special analysis documents).

POs	High Priority MF # and Title	NRC Closing MF	DOE Activity in Appendix A of SRR-CWDA-2016-00119	DOE Comments in Appendix B of SRR-CWDA-2016-00119	NRC Comments	Schedule that DOE Provided to NRC
§61.41 and §61.42	10.02 – Defensibility of Conceptual Model	parameter values and uncertainty ranges are appropriate. The NRC expects to close MF 10.02 under both POs §61.41 and §61.42 after the DOE updates the SDF performance assessment and the NRC determines that the conceptual models are appropriate.	Section 2.2.1 – Prepare Out-Year Saltstone Disposal Facility Performance Assessment Revisions This section describes future revisions to the SDF performance assessment that will incorporate improvements to conceptual modeling.	The FY 2014 SDF Special Analysis Document provides a revised model with a number of important updates. With it, the DOE also provides more intermediate results and evidence of quality assurance practices.	The NRC staff is currently reviewing the DOE implementation of the DOE document entitled “Conceptual Model Development for the Saltstone Disposal Facility Performance Assessment” (SRR-CWDA-2018-00006, Rev. 0) and will review the conceptual models used in the expected future DOE SDF performance assessment.	The schedule is tied to the schedule for revision to the DOE SDF performance assessment and any supplements (i.e., special analysis documents).
MA 11 – Radiation Protection Program – No Current High Priority Monitoring Factors						

Current Status of Monitoring Factors in Monitoring Areas 1 through 6

MA 1 Inventory	MA 2 Infiltration and Erosion Control	MA 3 Waste Form Hydraulic Performance	MA 4 Waste Form Physical Degradation	MA 5 Waste Form Chemical Degradation	MA 6 Disposal Structure Performance
- 1.01 - Inventory in Disposal Structures §	- 2.01 - Hydraulic Performance of Closure Cap ‡	- 3.01 - Hydraulic Conductivity of Field-Emplaced Saltstone ±	- 4.01 - Waste Form Matrix Degradation ±	- 5.01 - Radionuclide Release from Field-Emplaced Saltstone ±	- 6.01 - Certain Risk- Significant K_d Values in Disposal Structure Concrete ‡
- 1.02 - Methods Used to Assess Inventory ‡	- 2.02 - Erosion Control of the SDF Engineered Surface Cover and Adjacent Area. †	- 3.02 - Variability of Field-Emplaced Saltstone ±	- 4.02 - Waste Form Macroscopic Fracturing ±	- 5.02 - Chemical Reduction of Tc by Saltstone ±	- 6.02 - Tc Sorption in Disposal Structure Concrete ±
		- 3.03 - Applicability of Laboratory Data to Field-Emplaced Saltstone ±		- 5.03 - Reducing Capacity of Saltstone †	- 6.03 - Performance of Disposal Structure Roofs and HDPE/GCL Layers ‡
		- 3.04 - Effect of Curing Temperature on Saltstone Hydraulic Properties ±		- 5.04 - Certain Risk- Significant K_d Values for Saltstone ‡	- 6.04 - Disposal Structure Concrete Fracturing ‡
				- 5.05 - Potential for Short-Term Rinse Release from Saltstone ‡	- 6.05 - Integrity of Non- cementitious Materials ‡
§ Periodic Monitoring Factors (i.e., MFs related to data that NRC staff expects to review on a periodic basis)					
† Low Priority					
‡ Medium Priority					
± High Priority					
Closed					

Current Status of Monitoring Factors in Monitoring Areas 7 through 11

MA 7 Subsurface Transport	MA 8 Environmental Monitoring	MA 9 Site Stability	MA 10 Performance Assessment Model Revisions	MA 11 Radiation Protection Program
- 7.01 - Certain Risk- Significant K _d Values in Site Sand and Clay ‡	- 8.01 - Leak Detection §	- 9.01 - Settlement Due to Increased Overburden ‡	- 10.01 - Implementation of Conceptual Models ±	- 11.01 - Dose to Individuals During Operations §
	- 8.02 - Groundwater Monitoring §	- 9.02 - Settlement Due to Dissolution of Calcareous Sediment ‡	- 10.02 - Defensibility of Conceptual Models ± - 10.03 - Diffusivity in Degraded Saltstone ‡	- 11.02 - Air Monitoring §
	- 8.03 - Identification and Monitoring of Groundwater Plumes in the Z Area ±		- 10.04 - K _d Values for Saltstone † - 10.05 - Moisture Characteristic Curves †	
			- 10.06 - K _d Values for Disposal Structure Concrete †	
			- 10.07 - Calculation of Build-Up in Biosphere Soil †	
			- 10.08 - Consumption Factors and Uncertainty Distributions for Transfer Factors ‡	
			- 10.09 - K _d Values for SRS Soil †	
			- 10.10 - Far-Field Model Calibration ‡	
			- 10.11 - Far-Field Model Source Loading Approach ‡	
			- 10.12 - Far-Field Model Dispersion ‡	
			- 10.13 - Impact of Calcareous Zones on Contaminant Flow and Transport †	
			- 10.14 - Scenario Development and Defensibility ‡	
§ Periodic Monitoring Factors (i.e., MFs related to data that NRC staff expects to review on a periodic basis)				
† Low Priority				
‡ Medium Priority				
± High Priority				