SRMC-ESH-2026-00003, Rev. 0

Status of F/H Area Radioactive Liquid Waste Tanks Being Removed from Service

CY2025 Annual Report



March 2026

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Executive Summary

Per Section IX.B.2 of the Federal Facility Agreement (FFA) for the Savannah River Site (SRS), the United States Department of Energy (DOE) is required to submit a report to the United States Environmental Protection Agency (EPA) – Region 4 and the South Carolina Department of Environmental Services[1] (SCDES) containing new or replacement waste tank system component assessments annually on or before March 9th of each year. Further, Section IX.E.3 of the SRS FFA requires that DOE submit to EPA and SCDES the status of the radioactive liquid waste tanks being removed from service. To fulfill these requirements, Calendar Year (CY) 2025 individual tank status reports and a list of FFA assessment reports are included in this report in Appendix A and Appendix B, respectively. Appendix L of the SRS FFA stipulates that, with respect to the F-Area and H-Area waste tanks, in connection with the annual report, DOE shall report on the status of bulk waste and heel removal activities, Performance Assessments (PA), General Closure Plans, operational closure of tanks, and implementation of Section 3116(a) of the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005* (NDAA). The information required by Appendix L is provided in Section 2 of this report.

As of the end of CY2025, eight of the 24 old-style tanks have been operationally closed, or removed from service: Tanks 5F, 6F, 17F, 18F, 19F, and 20F in F-Area Tank Farm (FTF) and Tanks 12H and 16H in H-Area Tank Farm (HTF). Waste Removal (WR) activities were completed in Tank 3F, 8F, 11H, and 15H, and all these tanks were declared Preliminary Cease Waste Removal (PCWR) complete in CY2025. Primary tank waste removal and tank annulus cleaning activities were performed in Tank 14H in CY2025 and will continue in CY2026. In addition, several other old-style tanks (e.g., Tank 1F and 2F) had ongoing field activities in preparation for waste removal.

Salt Waste Processing Facility (SWPF) operations continued in CY2025. Through CY2025 fifteen approximately one-million-gallon salt batches have been qualified for SWPF waste feed, and two additional batches are being compiled in tanks 41H and 42H. Tank 27H modifications are in progress for placing the tank into SWPF feed blend tank service. SWPF treated over 2,706,000 gallons of salt solution during CY2025.

The Nuclear Regulatory Commission performed one on-site monitoring visit related to FTF and HTF in CY2024 and issued one document related to FTF and HTF in CY2025:

1. *U.S. Nuclear Regulatory Commission Report for the December 4, 2024, Onsite Observation Visit to the Savannah River Site Tank Farms (ML25042A595, March 6, 2025).*

Footnote 1
South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024.

Table of Contents

Approvals 2

Executive Summary 3

Table of Contents 4

List of Figures 5

Abbreviations……...…6

1.0 Introduction 7

2.0 Overview of CY2025 Activities and Accomplishments 8

2.1 Highlights of Waste Removal Efforts, Operational Closure, and Post Closure Activities for the F- and H-Area Tanks 8

2.2 F- and H-Area Tank Farm Consolidated General Closure Plan Activities..... 27

2.3 Tank Farm Performance Assessments and Section 3116 Waste Determinations Activities 27

APPENDIX A: CY2025 Individual Tank Status Reports for the F- and H-Area Radioactive Liquid Waste Tank Farms 28

APPENDIX B: CY2025 Federal Facility Agreement System / Component Assessment Reports..... 34

List of Figures

Figure 1 - Tank 1F H&V Stack Ventilation 9
Figure 2 - Tank 2F Riser 6 CSMP 10
Figure 3 - Tank 2F Transfer Jet Relocation 10
Figure 4 - Tank 3F Residual Waste at the Completion of Campaign 3 11
Figure 5 - Tank 8F Interior Post Dewatering 12
Figure 6 - Tank 9H Valve House Modifications 13
Figure 7 - Tank 9H Drone Sampling (T9-M1-3) 13
Figure 8 - Tank 9H Floor Sample T9-F-7 and Centrifugal Sampler 14
Figure 9 - Tank 9H Annulus Sample 14
Figure 10 - Tank 10H Riser 4 Mound 2 Sample (T10-M2-2 viewed from Riser 5) 15
Figure 11 - Tank 10H Primary Tank Residuals Composited Sample 16
Figure 12 - Tank 10H Annulus Sample 17
Figure 13 - Tank 11H Primary Tank Interior Post Waste Removal 17
Figure 14 - Tank 14H Primary Tank Interior Post Waste Removal 19
Figure 15 - Tank 15H Residual Waste Post Campaign 7 20
Figure 16 - Tank 15H Southwest Residual Waste Mound 20
Figure 17 - Tank 15H Northeast Residual Waste Mound 20
Figure 18 - Tank 28F GRM Skid 21
Figure 19 - Tank 33F Contactor Skid Cable Routing 22
Figure 20 - Tank 33F Riser E1 CSMP Cable Management 22
Figure 21 - Tank 33F Riser C1 STP 23
Figure 22 - Tank 34F Riser C1 Transfer Jet D&R 24
Figure 23 - Tank 34F Above Ground Transfer Line 24
Figure 24 - Tank 46F Chemical Riser E1 Addition Downcomer 25
Figure 25 - Tank 47F Riser B1 Rotek (Turntable) 25
Figure 26 - Tank 47F GRM Skid and Hydrogen Monitor 26

Abbreviations

A-P	Annulus to Primary
CCW	Chromate Cooling Water
CSMP	Commercial Submersible Mixer Pump
CY	Calendar Year
D&R	Disassembly and Removal
DOE	United States Department of Energy
DWPF	Defense Waste Processing Facility
ECR	Electrical Control Room
ECSMP	Enhanced Commercial Submersible Mixer Pump
EOY	End of Year (2025-12-31)
EPA	United States Environmental Protection Agency
FFA	Federal Facility Agreement
FTF	F-Area Tank Farm
GRM	Gas Release Mode
H&V	Heating and Ventilation
HTF	H-Area Tank Farm
LFRG	Low-Level Waste Disposal Facilities Federal Review Group
LTAD	Low Temperature Aluminum Dissolution
NEC	National Electric Code
NRC	United States Nuclear Regulatory Commission
PA	Performance Assessment
PCWR	Preliminary Cease Waste Removal
SA	Special Analysis
SCDHEC	South Carolina Department of Health and Environmental Control
SCDES	South Carolina Department of Environmental Services
SMP	Submersible Mixer Pump
SRMC	Savannah River Mission Completion
SRS	Savannah River Site
STP	Submersible Transfer Pump
SWPF	Salt Waste Processing Facility
UWMQE	Unreviewed Waste Management Question Evaluation
WR	Waste Removal

1.0 Introduction

Section IX.B.2 of the Federal Facility Agreement (FFA) for the Savannah River Site (SRS) requires the United States Department of Energy (DOE) to annually submit a report to the United States Environmental Protection Agency (EPA) – Region 4 and the South Carolina Department of Environmental Services (SCDES):

> "…for each F and H Area high-level waste tank system or component installed after the effective date of this Agreement, the DOE shall prepare a written assessment, certified by a registered professional engineer, that the waste tank system or component has sufficient structural integrity and is acceptable for the storing or treating of hazardous and/or radioactive substances."

Section IX.B.3 further states:

> "The assessment(s) shall demonstrate that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the waste tank system(s) have sufficient structural strength, compatibility with the hazardous/ radioactive substances to be stored or treated, and corrosion protection to ensure that the waste tank system(s) or component(s) will not collapse, rupture, or fail. At a minimum, the assessment(s) shall include the information contained in Subsection B of Appendix B herein, entitled, *Design/Installation Standards for New and Replacement Tank System(s) and Components*."

These waste tank system component assessments are to be "submitted annually on or before March 9th of each year for all components installed during the previous year."

In addition, Section IX.E.3 of the SRS FFA states:

> "The DOE will submit to EPA and SCDHEC an annual report on the status of tanks being removed from service under Subsection E.1 herein. This report will include any requests, subject to review and approval, for changes to the existing plan(s) and schedule(s) approved under Subsection E.1. This annual report shall be submitted in conjunction with the assessments submitted under Subsection B.3 herein."

With respect to the waste tanks in F-Area Tank Farm (FTF) and H-Area Tank Farm (HTF), Appendix L, Item 18, of the SRS FFA states:

> "In connection with the annual report on the status of tanks being removed from service due by March 9th of each year in accordance with Section IX.E.3 of the FFA, DOE shall report on the status of bulk waste and heel removal activities for F Area and H Area tanks, F Area and H Area Tank Farm Performance Assessments, F Area and H Area Tank Farm General Closure Plans, operational closure of groups of tanks in F and H Areas, and implementation of Section 3116(a) of the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005* with respect to F Area and H Area tanks."

The required assessments under Section IX.B are found in Appendix B of this report. The status of the old-style tanks being removed from service, as required in Section IX.E, is found in Appendix A of this report. Section 2 of this report contains the additional information required by Appendix L of the SRS FFA.

2.0 Overview of CY2025 Activities and Accomplishments

As of the end of Calendar Year (CY) 2025, eight of the 24 old-style tanks have been operationally closed, or removed from service: Tanks 5F, 6F, 17F, 18F, 19F, and 20F in FTF and Tanks 12H and 16H in HTF. Waste Removal (WR) activities were completed in CY2025 for Tank 3F, 8F, 11H, and 15H, and all these tanks were declared Preliminary Cease Waste Removal (PCWR) complete. Primary tank waste removal and tank annulus cleaning activities were performed in Tank 14H in CY2025 and will continue in CY2026. In addition, several other old-style tanks (e.g., Tank 1F and 2F) had ongoing field activities in preparation for waste removal. Salt Waste Processing Facility (SWPF) operations continued in CY2025. Through CY2025 15 approximately one-million-gallon salt batches have been qualified for SWPF waste feed, and two additional batches are being compiled in Tanks 41H and 42H. Tank 27H modifications are in progress for placing the tank into SWPF feed blend tank service. SWPF treated over 2,706,000 gallons of salt solution during CY2025.

2.1 Highlights of Waste Removal Efforts, Operational Closure, and Post Closure Activities for the F- and H-Area Tanks

Four FFA milestones were completed in CY2025. DOE received concurrence from SCDES and EPA to suspend waste removal activities in Tank 11H and move to the Residuals Sampling and Analysis step of the closure process. Since PCWR for Tanks 9H and 4F were previously finished in CY2024, completion of PCWR for Tank 11H led to the achievement of the FFA milestone to complete PCWR in three tanks by December 31, 2025. DOE also received concurrence from SCDES and EPA to suspend waste removal activities in Tanks 15H and 8F, which fulfilled the two FFA milestones for CY2026 and in Tank 3F, which completed one of the FFA milestones for CY2027.

In CY2025, the Tank 1F Project Team completed the disassembly and removal (D&R) of the Riser 1, 4, and 6 spray chambers; the Riser 5 reel tape; and the Riser 7 spare ports. A chemical addition downcomer was installed in Riser 7, and a radar level indicator was installed in the Center riser. An inspection port was also installed in Riser 5. Additionally, the Project Team initiated modifications to the Heating and Ventilation (H&V) system.

Figure 1 - Tank 1F H&V Stack



The Tank 2F Project Team completed the installation of the Riser 1 and 6 Commercial Submersible Mixer Pumps (CSMPs). Figure 2 shows the installation of the Riser 6 CSMP. Riser 8 existing thermocouple tree D&R was completed, and new thermocouples were installed in the riser. The Riser 4 spray chamber D&R was also completed, and a CSMP was installed. Additionally, the Team extended the H&V stack to 45 feet and tied-in the Continuous Air Monitor to the stack. A flow indicator was installed to allow the tank to be operated as a Rapid Generation Tank during salt dissolution activities. The Project Team also routed a supply hose from the Well Water System to the Tank 2F Riser 7 downcomer. Furthermore, the Riser 3 transfer jet was dismantled, removed, and relocated to Riser 2 after removal of the Annulus to Primary (A-P) transfer line (refer to Figure 3). The Riser 3 Submersible Transfer Pump (STP) was also installed in CY2025.

Figure 2 - Tank 2F Riser 6 CSMP



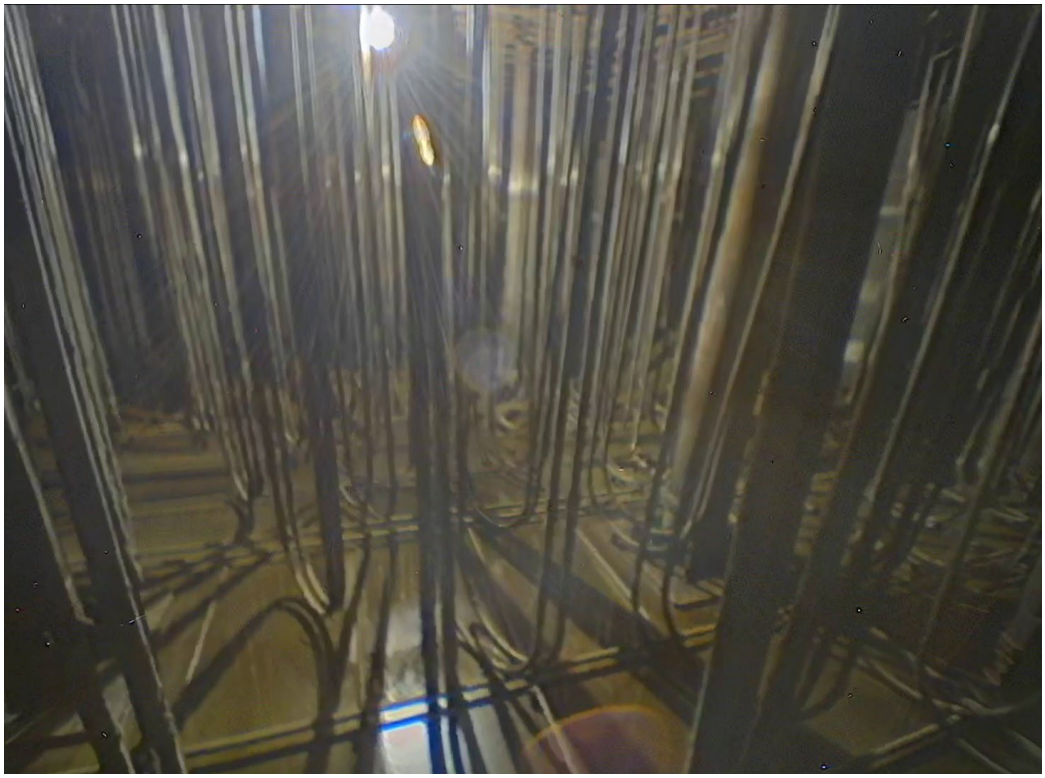
Figure 3 – Tank 2F Transfer Jet Relocation



Salt dissolution activities in Tank 3F utilizing the Risers 1 and 6 CSMPs were initiated in December 2024 and continued through June 2025 utilizing the Riser 1 and 6 CSMPs. Dissolved salt solution was transferred from Tank 3F to Tank 7F. The Campaign 1 transfer from Tank 3F to Tank 7F was executed in February 2025. The Campaign 2 transfer from Tank 3F to Tank 7F was completed in March 2025. Salt dissolution Campaign 3 consisted of six mixing campaigns where the CSMPs and STP were lowered as needed to allow dissolution activities. Campaigns 3A-3C were completed by April 2025.

The Tank 3F Project Team completed the installation of a third CSMP with associated turntable in Riser 3 in May 2025. Salt dissolution mixing Campaign 3D started with the Riser 1 and 6 CSMPs in late April 2025 and was completed in June after the installation of the third CSMP in Riser 3. Mixing Campaign 3E followed immediately after Campaign 3D. The STP in Riser 5 failed in June during the final Campaign 3 transfer (Campaign 3F). The final Campaign 3 transfer from Tank 3F to Tank 7F was completed by the end of July after replacing the failed STP for a final liquid level in Tank 3F of approximately three inches (refer to Figure 4). A total of seven mixing campaigns were completed in CY2025 in Tank 3F with the aid of CSMPs. A PCWR presentation was held on September 4, 2025. The DOE, SCDES, and EPA concurred with proceeding to the Sampling and Analysis phase of the closure process for Tank 3F. The Project Team also completed the design for the isolation of the chromate cooling water (CCW) cooling coils.

Figure 4 – Tank 3F Residual Waste at the Completion of Campaign 3



In CY2025, the Tank 4F Team completed the design for the isolation and D&R of the CCW system. Isolation and draining of the CCW system header and cooling coils was completed. The Team also started preparations for the D&R of the CCW system headers and cooling coils. Additionally, the design for the Center Riser future residual sampling modifications was completed.

In CY2025, the Tank 8F dewatering pump design was completed and dewatering (removal of free supernate) was completed in April 2025. The supernate was transferred to Tank 34F. After completing the dewatering transfer, a primary tank drone inspection was performed, and a tank residual sample was taken in support of PCWR determination. Figure 5 shows the Tank 8F interior after the dewatering activities. A PCWR presentation was held on June 16, 2025. The DOE, SCDES, and EPA concurred with entering the Sampling and Analysis phase of the closure process for Tank 8F. Design of the CCW system isolation was completed, and cooling coil flushing modifications started and will continue in CY2026.

Figure 5 – Tank 8F Interior Post Dewatering



In CY2025, D&R and flushing of the Tank 9H CCW header and cooling coils was completed as shown in Figure 6. Dewatering of the CCW flush water into Tank 11H, which supports the Tank 9H residual sampling activities, was also completed. Additionally, the annulus residual liquid waste was sampled in January, and analysis of the sample by the Savannah River National Laboratory (SRNL) was completed. Tank 9H was placed in CLOSURE Mode in July 2025. D&R and modifications of Risers 2 and 8 were completed to support residual sampling of the tank.

Figure 6 – Tank 9H Valve House Modifications



On September 30, 2025, the Project successfully obtained three residual solids samples utilizing a drone. The Project Team also deployed a robotic crawler to collect samples utilizing the sample cup method and a newly designed centrifuge sampler, which obtained four floor residual solids samples. Figures 7 and 8 show the drone and centrifuge sampler techniques deployed in the tank during sampling, and Figure 9 shows the retrieved Tank 9H annulus sample. Analysis of the Tank 9H annulus liquid sample was completed in CY2025. A total of 19 residual solid samples from the primary tank were obtained by November 2025. A liquid sample was also retrieved from the primary tank due to the presence of liquid residual material at the time of sampling. The primary tank liquid and solid samples were transported to SRNL for compositing. Furthermore, residual sampling and analysis will continue in CY2026.

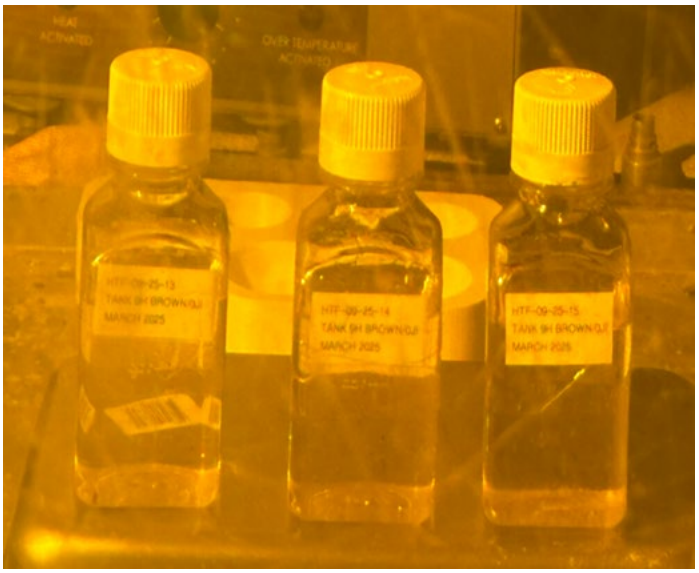
Figure 7 – Tank 9H Drone Sampling (T9-M1-3)



Figure 8 – Tank 9H Floor Sample T9-F-7 and Centrifuge Sampler



Figure 9– Tank 9H Annulus Sample



Tank 10H was placed in CLOSURE Mode in January 2025 after dewatering activities were completed in November 2024. D&R and modifications of the Center Riser were completed in CY2025 to support primary tank residual sampling. Residual sampling started in March 2025 and was completed in May 2025. Fifteen residual solids samples were obtained via a sampling crawler and were sent to SRNL for compositing. Figure 10 shows sampling of the residual solids utilizing a crawler, and Figure 11 shows the three Tank 10H composited samples prepared by SRNL. Compositing of the samples was completed in October 2025. Analysis of the composited samples is in progress.

Annulus liquid samples were obtained in June and August 2025. Furthermore, a special scraper sampling tool was fabricated and deployed, and an annulus solid sample was obtained in September 2025. Both the liquid and solid scrape annulus samples were transported to SRNL for analysis preparation. Figure 12 shows the Tank 10H annulus samples obtained (scrape and liquid).

Figure 10 – Tank 10H Riser 4 Mound 2 Sample (T10-M2-2 Viewed from Riser 5)



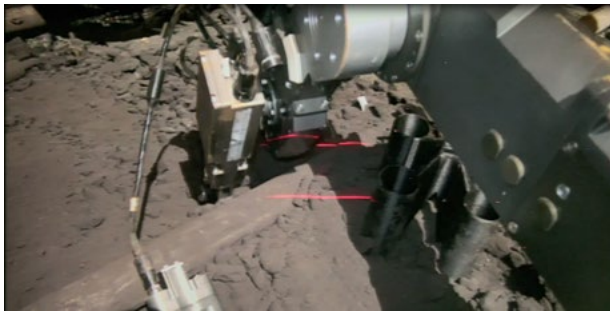




Figure 11 – Tank 10H Primary Tank Residuals Composited Samples

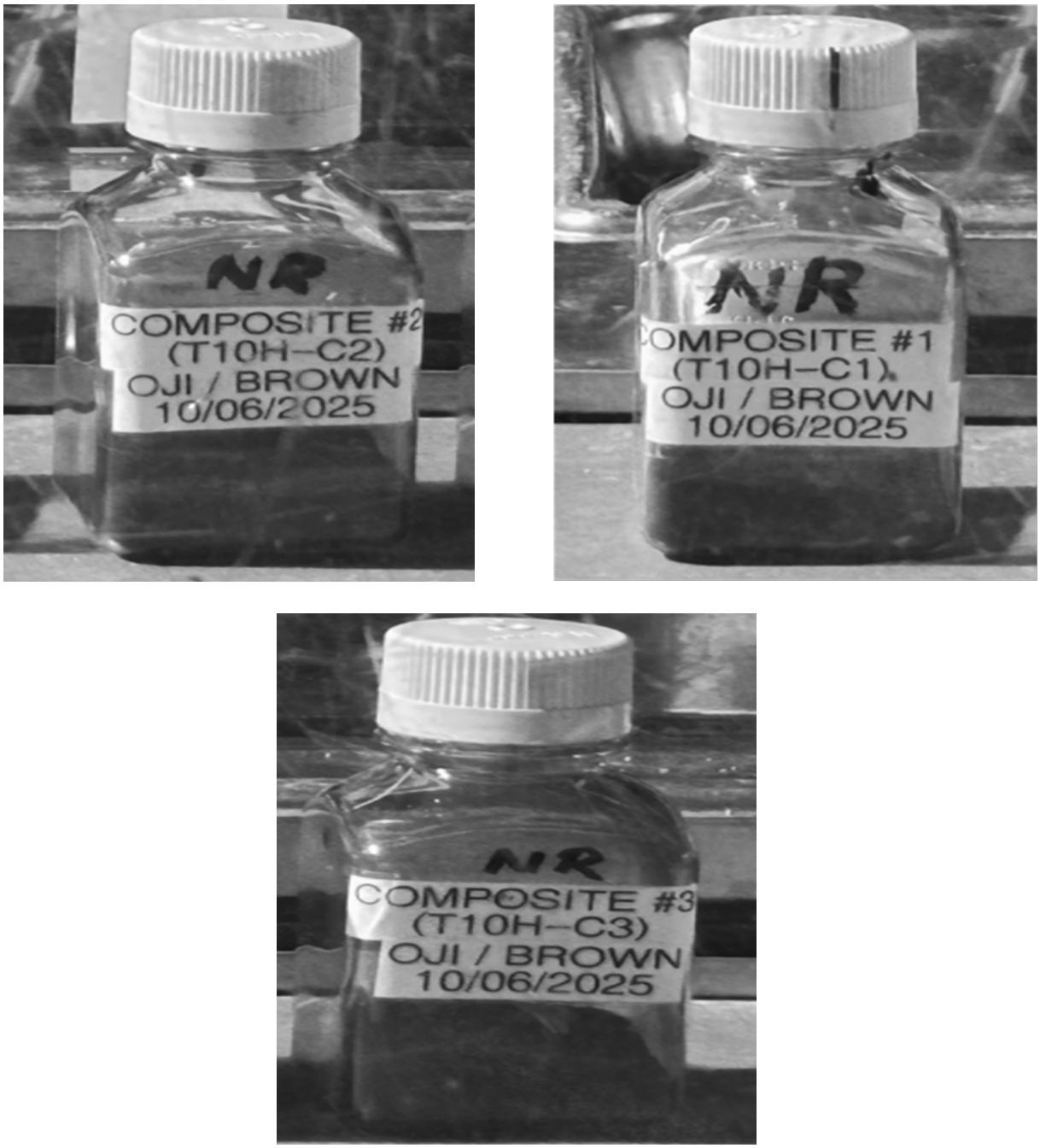


Figure 12 – Tank 10H Annulus Sample



Waste removal activities in Tank 11H continued in CY2025. The Low Temperature Aluminum Dissolution (LTAD) process initiated in CY2024 with the addition of sodium hydroxide continued in CY2025 and was concluded in March 2025. The LTAD process successfully reduced the waste in the tank from approximately 30,000 to 8,000 gallons of residual waste (see Figure 13). A PCWR presentation was held on May 19, 2025. DOE, SCDES, and EPA concurred with proceeding with the Sample and Analysis phase of the closure process for Tank 11H.

The Project Team completed the D&R of Riser 2 to support future residual sampling. Isolation, flushing, and draining of the CCW system and cooling coils were also completed in CY2025. D&R of the Tank 11H Valve House CCW system headers was also completed. Dewatering of the tank was completed in December 2025 for a final liquid level of approximately two inches. Residual sampling activities will continue in CY2026.

Figure 13 - Tank 11H Primary Tank Post Waste Removal Campaign 3



Tank 13H WR Campaign 1 utilizing the installed CSMPs in Risers 2A, 3, 4, and 8 was initiated in January 2025 and concluded in February 2025. The STP failed when preparing to transfer Tank 13H material into Tank 35H. The STP was removed and replaced in February, and the Tank 13H WR Campaign 1 transfer into Tank 35H was completed immediately after STP replacement. The transferred Tank 13H sludge will be incorporated into the future Defense Waste Processing Facility (DWPF) Sludge Feed Batch 12. The transfer provided free operating space in Tank 13H to support Tank 15H waste removal activities. To limit the amount of liquid introduced into the Liquid Waste System, simultaneous transfers (Feed and Bleed) between Tank 13H (supernate transfers) and Tank 15H (sludge slurry) were executed from March 2025 through May 2025. In May 2025, a new Recirculation Transfer Pump (RTP) was installed in Tank 13H to support waste removal activities in Tank 14H. Tank 13H operations were switched to support Tank 14H waste removal activities after Tank 15H PCWR determination was completed in May. Tank 13H waste removal activities will continue in CY2026 after waste removal activities are completed in Tank 14H.

In support of Tank 14H waste removal activities, the Project Team completed the installation of the transfer line, jacket, and lead blankets on the Tank 13H to Tank 14H above ground transfer line. A supernate transfer was made in August into Tank 14H from Tank 13H to promote salt dissolution in Tank 14H. The Tank 13H STP was replaced again in December due to failure. A Tank 13H to Tank 35H transfer was started in December to provide waste storage space for the Tank 14H heel washing campaign.

In CY2025, the Tank 14H Project Team completed the D&R of Riser 1 and installed a CSMP with its associated turntable and cable management. Integrated testing of the installed CSMPs was also completed in CY2025. An annulus downcomer was installed to support water additions for annulus cleaning. The Project Team also installed the A-P transfer line and transfer pump. A new STP was also installed in Tank 14H.

Tank 14H WR activities (i.e., salt dissolution) started in August 2025 with a supernate transfer from Tank 13H into Tank 14H. A water addition was started after the supernate addition and salt dissolution activities utilizing the installed CSMPs in Risers 1, 3, 4A, and 8 were initiated. WR Campaign 1 was completed in September 2025. Two samples were obtained to support PCWR determination. The STP was lowered to three inches from the tank bottom in preparation for the Tank 14H to Tank 13H transfer. The installed CSMPs were operated at the start of the transfer to maximize solids removal from Tank 14H. The transfer was terminated on September 24, 2025. Drone inspections of the primary tank to support PCWR determination were also completed after the transfer. The sample results and drone inspection indicated additional waste removal would be required, which will be performed in CY2026. Refer to Figure 14.

Tank 14H was entered into Annulus Cleaning Mode in October 2025. As of December 2025, fourteen annulus cleaning campaigns were completed. Each campaign consisted of the addition of approximately 5,000 gallons of well water, followed by a waste soak period, and then an A-P transfer. Campaign 15 was initiated in December and completed in early January 2026. An annulus sample was obtained and analyzed to support PCWR determination.

Figure 14 – Tank 14H Primary Tank Interior Post Waste Removal



Based on Tank 15H camera and drone inspections performed in late CY2024, along with sample results from process samples, it was determined that additional waste removal was needed in Tank 15H. A Feed and Bleed Campaign (Heel Removal Campaign 7) consisting of water addition into Tank 15H, mixing and transfer into Tank 13H, and transfer back into Tank 15H was performed from January through April in CY2025. The heel removal campaign comprised of the addition of approximately 440,000 gallons of well water and indexed operation of the Tank 15H Submersible Mixing Pumps (SMPs) for approximately 10 days. At the completion of the indexed mixing operations, the SMPs were operated on oscillation to maintain the solids in suspension. Simultaneous transfers between Tank 15H and Tank 13H were made to minimize the space impacts to the Liquid Waste System operating volume. At the completion of Campaign 7, less than 6,000 gallons of residual solids were estimated to remain in Tank 15H (see Figures 15 - 17). Based on this preliminary residual waste volume, more than 99% of the waste was removed from Tank 15H by the end of Heel Removal Campaign 7. A PCWR presentation was held on May 19, 2025. DOE, SCDES, and EPA concurred to proceed to the Sampling and Analysis phase of the closure process for Tank 15H. Activities for sampling of the residual solids were initiated in September 2025 and will continue in CY2026.

Figure 15 – Tank 15H Residual Waste Post Campaign 7

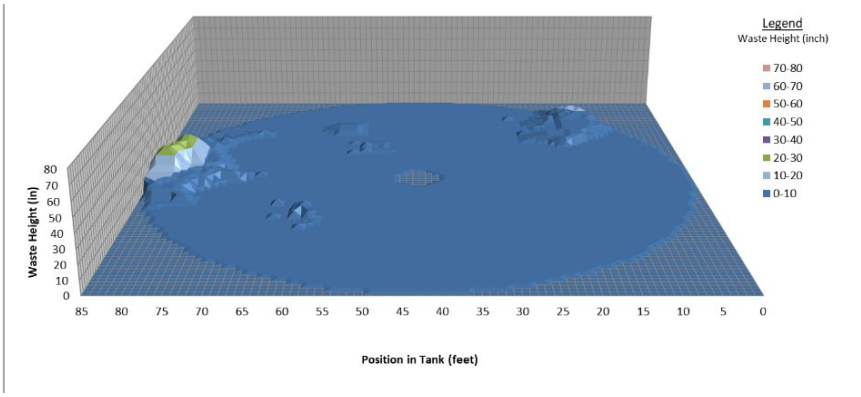


Figure 16 – Tank 15H Southwest Residual Waste Mound



Figure 17 – Tank 15H Northeast Residual Waste Mound



In February 2025, the Tank 25F Project Team issued the Scope of Work for the Tank 25F waste and heel removal modifications. Waste and heel removal modification designs were initiated in CY2025 and will continue in CY2026.

In CY2025, the Tank 28F Project Team initiated the Gas Release Mode (GRM) Skid design changes for compliance with the National Electric Code (NEC). The Project Team wired the Hydrogen monitor to the GRM Skid (see Figure 18). In February of CY2025, Building 241-18F Electrical Control Room (ECR) renovations were turned over to Facility Operations. The design for the repair of the 241-18F cable and cable tray was started and completed.

Figure 18 – Tank 28F GRM Skid



In CY2025, the Tank 31H Project Team was on hold pending alignment with the Liquid Waste System Plan needs for the tank. The Project Team continued to work on addressing design concerns related to compliance of the GRM Skid with the NEC.

In CY2025, the Tank 33F Project Team completed the installation of the Riser E1 and E2 CSMPs cable management supports. The Team also completed the installation of cables from the GRM Skid to the flow indicator transmitters, the cable trays, and the supports for the CSMPs power cables. After this, power was available to the CSMPs and the Riser B5 Enhanced CSMP (ECSMP), which is a larger diameter than a standard CSMP. The Riser C1 STP was also installed in CY2025. Refer to Figures 19 to 21 for Tank 33F CY2025 activities.

Figure 19 – Tank 33F Contactor Skid Cable Routing



Figure 20 – Tank 33F Riser E1 CSMP Cable Management



Figure 21 – Tank 33F Riser C1 STP



In CY2025, the Tank 34F Project Team installed a new riser cover in Riser E2. The Team also installed a High Liquid Level Conductivity Probe in Riser D4, and the reel tape was relocated from Riser E2 to Riser D1. Additionally, fabrication of the H&V design modifications was started, and a 50-foot stanchion for the H&V was installed. A CSMP and associated turntable were installed in Riser E2 and Riser E1. The Project Team also continued the modifications for the above ground transfer line (see Figure 23). Moreover, D&R of the Riser C1 transfer jet (see Figure 22) was completed and routing of conduits for the Riser C1 power cables was started.

Figure 22 – Tank 34F Riser C1 Transfer Jet D&R



Figure 23 – Tank 34F Above Ground Transfer Line



Waste removal designs started in CY2024 for Tank 45F continued in CY2025 and are in progress.

In CY2025, the Tank 46F Project Team started the fabrication of the H&V modifications and the GRM skid. The Tank 46F Project Team completed the D&R of old chromate water piping and installed the instrument air manifold on the Tank Top. A chemical addition downcomer was installed in Riser E1 (see Figure 24), and a manual Hydrogen sampling

port was installed in Riser D2. D&R of Riser B5, which supports the future installation of a Low Volume Mixing Jet, was also completed in CY2025.

Figure 24 – Tank 46F Chemical Riser E1 Addition Downcomer



In CY2025, the Tank 47F Team completed the D&R of the riser plugs for Risers B1, B4, B2, B5, and C1, which supports the installation of CSMPs (see Figure 25). A liquid addition downcomer was also installed in Riser E1. Additionally, the Project Team completed the installation of the Riser V2 hydrogen monitor and Contactor Skids A and B (see Figure 26). Fabrication of the GRM skid initiated in CY2024 was also completed in CY2025, and the skid was subsequently installed on the tank top (see Figure 26).

Figure 25 – Tank 47F Riser B1 Rotek (Turntable)

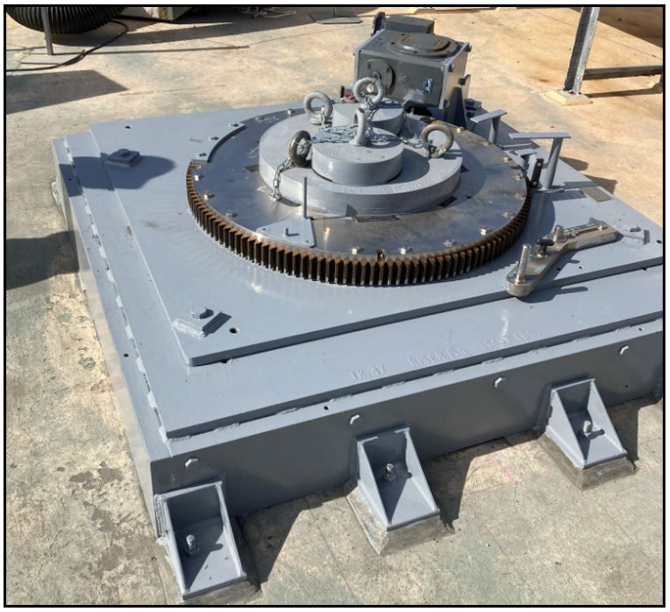
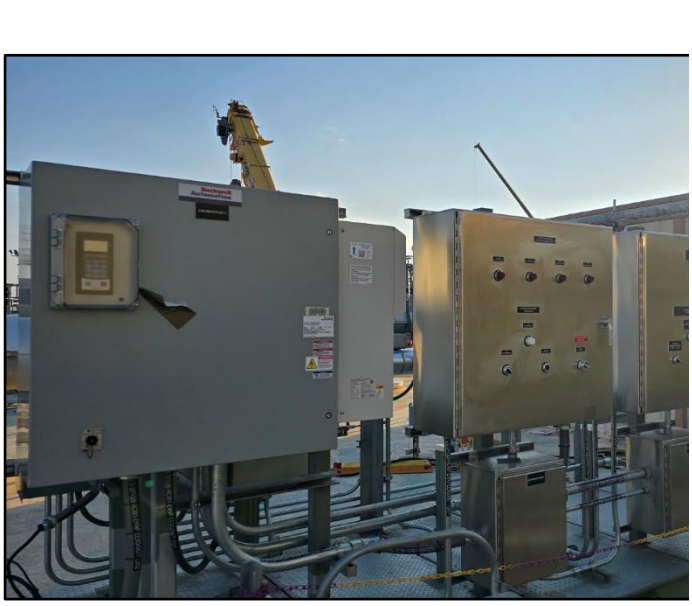


Figure 26 – Tank 47F GRM Skid and Hydrogen Monitor





2.2 F- and H-Area Tank Farm Consolidated General Closure Plan Activities

No revisions or updates to the Consolidated General Closure Plan occurred during CY2025.

2.3 Tank Farm Performance Assessments and Section 3116 Waste Determination Activities

As part of the ongoing performance assessment (PA) maintenance program consistent with DOE Manual 435.1-1, DOE has prepared an update to the current HTF PA. Draft A of SRMC-CWDA-2023-00073, *Performance Assessment for the H-Area Tank Farm at the Savannah River Site* was issued in November 2023 for DOE initial review. Initial DOE review was completed, and Draft B was transmitted to the DOE Low-Level Waste Disposal Facilities Federal Review Group (LFRG) for review in CY2024. The LFRG review was completed in CY2025, and LFRG secondary issues were addressed (no key issues were identified) by letter WDPD-26-09 (Subject: Performance Assessment for the H-Area Tank Farm at the Savannah River Site, SRMC-CWDA-2023-00073, dated June 2025). DOE approved the subject PA for use as the basis for the ongoing work in H-Area.

This updated HTF PA accomplished multiple tasks, including: 1) Updates the HTF PA to current regulatory standards and guidance. 2) Incorporates current HTF Special Analyses (SAs) and Unreviewed Waste Management Question Evaluations (UWMQEs) into a single document. 3) Addresses ongoing U.S. Nuclear Regulatory Commission (NRC) monitoring factors and recommendations and incorporates results of the associated research and development activities. 4) Updates the HTF radiological and chemical inventories and explicitly addresses secondary containments as locations of inventory at closure to aid in future SA preparation. 5) Improves the PA waste tank models and sub-models to provide greater defensibility and dose margin for reduced programmatic risk, delivering greater flexibility to support tank closure operations.

DOE is also in the process of preparing Draft A of SRMC-CWDA-2026-00006, *Performance Assessment for the F-Area Tank Farm at the Savannah River Site*. SRMC-CWDA-2026-00006 is an update to the current FTF PA similar to (and based on) the approved HTF PA and is scheduled to be issued for DOE review in CY2026.

The NRC performed one on-site monitoring visit related to FTF and HTF in CY2024 and issued one document related to FTF and HTF in CY2025:

1. *U.S. Nuclear Regulatory Commission Report for the December 4, 2024, Onsite Observation Visit to the Savannah River Site Tank Farms (ML25042A595, March 6, 2025)*.

DOE continued to provide documentation/information as requested by the NRC to support NRC and SCDES monitoring responsibilities under Section 3116(b) of the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005*.

APPENDIX A: CY2025 Individual Tank Status Report for the F- and H-Area Radioactive Liquid Waste Tank Farms

Individual Tank Status Report

Introduction:

Appendix A provides information on 24 Waste Storage Tanks in the F-Area and H-Area Tank Farms, which are being removed from service. Information in this appendix, including volumes of material in the tanks, is reported as of the end of CY2025.

Several of the tanks experienced leakage in the past. A dark green background in the tank diagram indicates a tank that has a leakage history; tank storage liquid levels are currently maintained below the lowest known leak site.

Eight of the tanks are operationally closed:

- Tank 5 closed December 2013
- Tank 6 closed December 2013
- Tank 12 closed April 2017
- Tank 16 closed September 2015
- Tank 17 closed December 1997
- Tank 18 closed September 2012
- Tank 19 closed September 2012
- Tank 20 closed July 1997

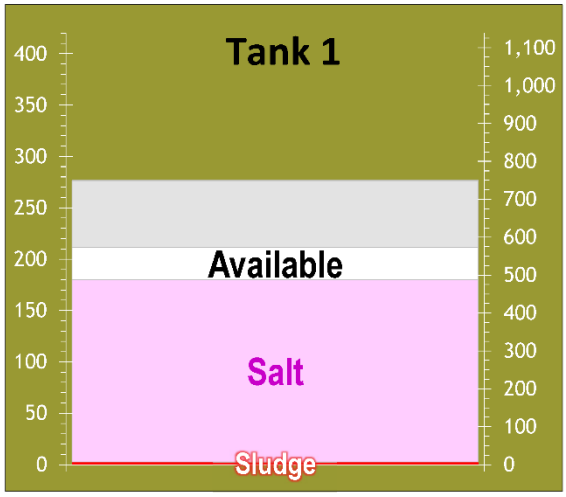
Seven of the tanks received PCWR concurrence:

- Tank 10 PCWR concurrence in May 2024
- Tank 9 PCWR concurrence in October 2024
- Tank 4 PCWR concurrence in December 2024
- Tank 11 PCWR concurrence in May 2025
- Tank 15 PCWR concurrence in May 2025
- Tank 8 PCWR concurrence in June 2025
- Tank 3 PCWR concurrence in September 2025

Tank 1:

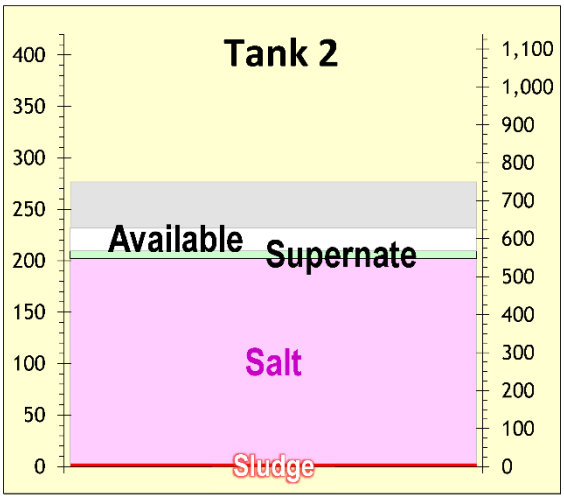
Area: F-Area
Service: Waste Storage Tank
Under Active Surveillance
Type: I
End of Year (EOY) Volume: 486,990 gallons

Status: There were no transfers in or out during 2025.



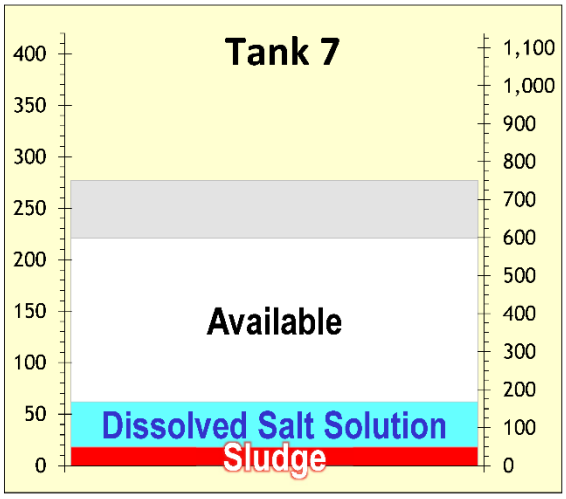
Tank 2:

Area: F-Area
Service: Waste Storage Tank
Under Active Surveillance
Type: I
EOY Volume: 568,020 gallons
Status: There were no transfers in or out during 2025.



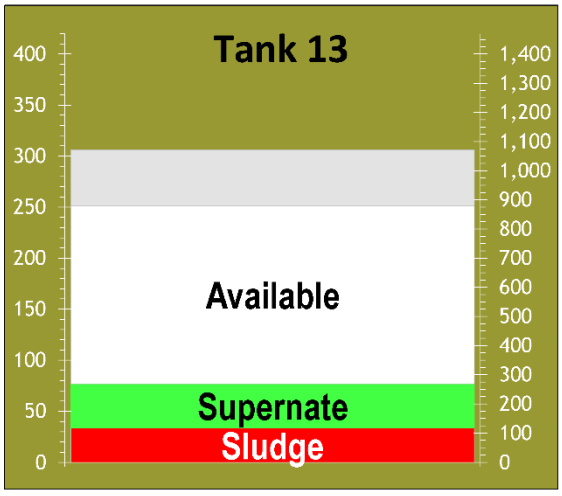
Tank 7:

Area: F-Area
Service: Approved by SCDES and EPA in 2018 for use as hub tank to receive Tank 3 dissolved salt solution.
Tank Type: I
EOY Volume: 167,750 gallons
Status: To support Tank 3 waste removal, approximately 804,900 gallons were received from Tank 3. Tank 7 transferred about 728,900 gallons to Tank 35 for Salt Batch makeup and about 484,800 gallons for waste removal to Tank 26.



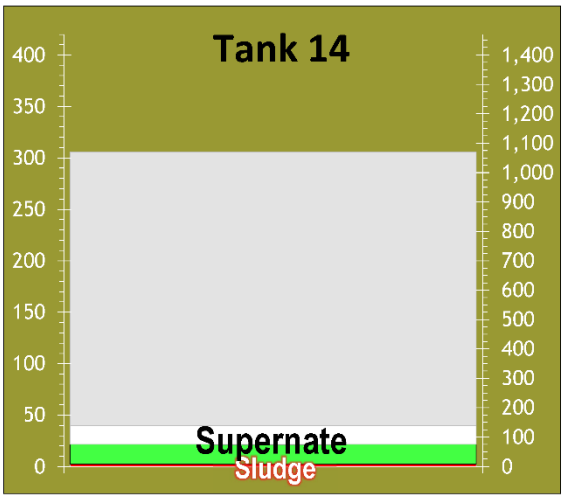
Tank 13:

Area: H-Area
Service: Active Waste Tank used as a Hub Tank in support of cleaning activities for Tanks 14 and 15.
Type: II
EOY Volume: 268,800 gallons
Status: To support Tank 14 and Tank 15 heel removal, approximately 752,600 gallons were transferred to Tank 35 from Tank 13. For Tank 14 waste removal, Tank 13 transferred 304,500 gallons to Tank 14 and received 552,000 gallons from Tank 14. For Tank 15 waste removal, Tank 13 transferred about 169,000 gallons to Tank 15 and received about 448,000 gallons from Tank 15.



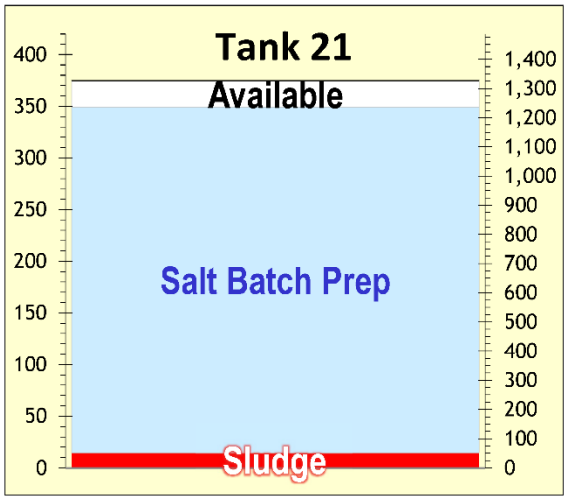
Tank 14:

Area: H-Area
Service: Heel Removal in preparation for grouting and removal from service.
Type: II
EOY Volume: 75,600 gallons
Status: For Tank 14 waste removal, Tank 14 received 249,200 gallons from Tank 13 and transferred 551,700 gallons to Tank 13.



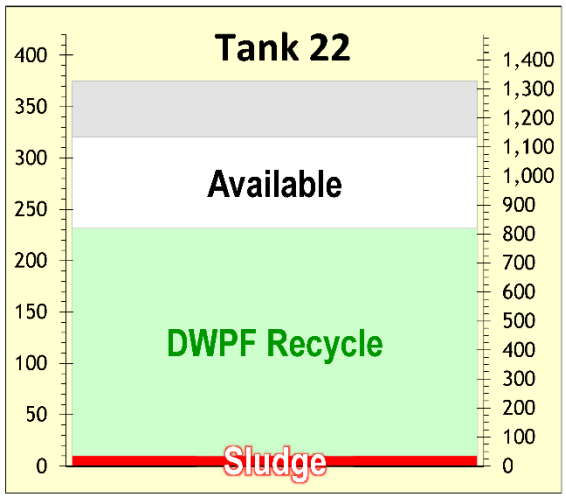
Tank 21:

Area: H-Area
Service: Salt Batch Blend Tank
Type: IV
EOY Volume: 1,236,900 gallons
Status: There were no transfers in or out of Tank 21 during 2025.



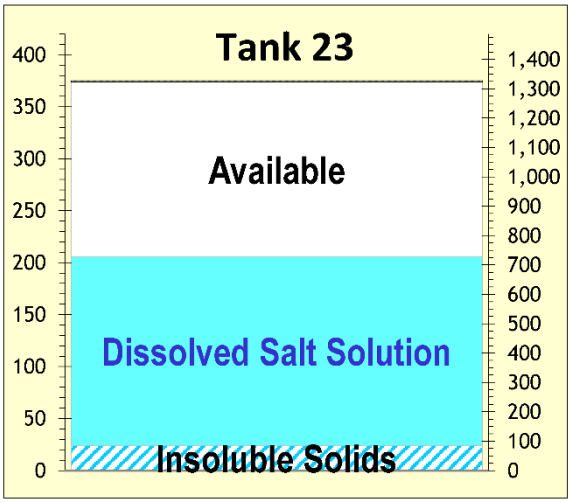
Tank 22:

Area: H-Area
Service: Storage Tank for DWPF Recycle
Type: IV
EOY Volume: 819,510 gallons
Status: In 2025, Tank 22 continued receiving DWPF Recycle and stored approximately 805,000 gallons of DWPF Recycle waste. Tank 22 transferred approximately 139,100 gallons to Tank 41 for Salt Batch formation.



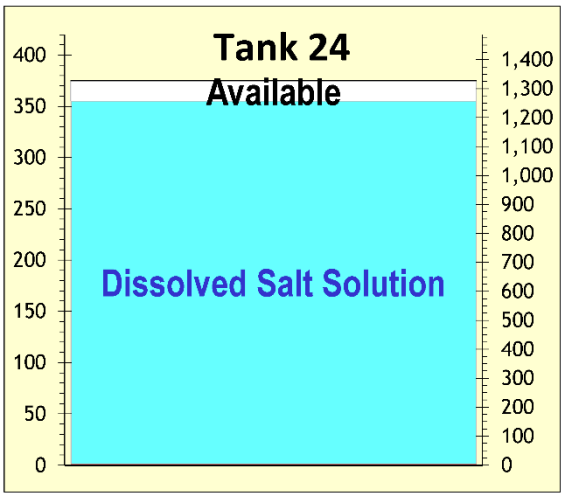
Tank 23:

Area: H-Area
Service: Salt Solution Hold Tank
Type: IV
EOY Volume: 728,890 gallons
Status: Tank 23 transferred approximately 717,800 gallons to Tank 41 and 389,700 gallons to Tank 42 for SWPF Batch formation. Tank 23 received approximately 515,600 gallons from Tank 30 to deliquor the 25H Evaporator. An additional 376,000 gallons was received from Tank 34 for Tank 8 waste removal support.



Tank 24:

Area: H-Area
Service: Waste Storage Tank
Type: IV
EOY Volume: 1,257,100 gallons
Status: There were no transfers in or out of Tank 24 during 2025.



APPENDIX B:
CY2025 Federal Facility Agreement
System / Component Assessment Reports

Report Number	Title
M-ESR-F-00358 Revision 0	Federal Facility Agreement Assessment Report for D&R Tank 2 Waste Transfer Line WTE-L-209
M-ESR-H-00610 Revision 0	Federal Facility Agreement Assessment Report for Tank 14H Annulus-To-Primary Transfer Line D&R
M-ESR-H-00612 Revision 0	Federal Facility Agreement Assessment Report for Tank 14H Transfer Line WTS-L-104
M-ESR-H-00628 Revision 0	Federal Facility Agreement Assessment Report for Tank 14H D&R Annulus to Primary Transfer Line WTE-L-18
M-ESR-H-00669 Revision 0	Federal Facility Agreement Assessment Report for Removal of Hose In Hose Transfer Lines Between Tank 15H Riser 7 and Tank 13H Riser 6

Savannah River Site

FEDERAL FACILITY AGREEMENT
ASSESSMENT REPORT

FOR

D&R TANK 2 WASTE TRANSFER LINE WTE-L-209

M-ESR-F-00358
REVISION 0

DISCLAIMER

This report was prepared by Savannah River Mission Completion (SRMC) for the United States Department of Energy under Contract No. 89303322DEM000068 and is an account of work performed under that contract. Neither the United States Department of Energy, nor SRMC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, or product or process disclosed herein or represents that its use will not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trademark, name, and manufacturer or otherwise does not necessarily constitute or imply endorsement, recommendations, or favoring of same by SRMC or by the United States Government or any agency thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

APPROVAL SIGNATURES / SUMMARY OF CHANGES

APPROVALS

PREPARER Thy Truong Digitally signed by Thy Truong Date: 2023.05.24 09:22:39 -04'00' Thy Truong, Design Services Mechanical Engineer Project Management, Design and Construction Services	DATE
REVIEWER David Lindberg Digitally signed by David Lindberg Date: 2023.05.24 09:56:02 -04'00' David Lindberg, Design Services Mechanical/Process Engineer Project Management, Design and Construction Services	
APPROVAL Steven Pfaunmiller Digitally signed by Steven Pfaunmiller Date: 2023.05.24 14:44:56 -04'00' Steven Pfaunmiller, Design Authority Tank Farm Engineering	
APPROVAL CRAIG CAUGHMAN (Affiliate) Digitally signed by CRAIG CAUGHMAN (Affiliate) Date: 2023.05.24 16:17:42 -04'00' Craig Caughman, Project Engineering Manager, Project Management, Design and Construction Services	

SUMMARY OF CHANGES

Rev. No	Reason for Change	Pages Affected	Issue Date
0	Initial Issue	All	

Table of Contents

1.0 EXECUTIVE SUMMARY 5
2.0 DESIGN INFORMATION 5
3.0 WASTE COMPATIBILITY 6
4.0 FOUNDATION SUPPORT 6
5.0 LEAK DETECTION AND PAST LEAKS 6
6.0 INSPECTIONS 6
7.0 DETERMINATION OF SECONDARY CONTAINMENT 7
8.0 PROFESSIONAL ENGINEER CERTIFICATIONS (DESIGN AND CONSTRUCTION) 8
9.0 ATTACHMENTS 9

1.0 Executive Summary

This Assessment Report is being submitted to satisfy requirements of Section IX and Appendix B of the Savannah River Site (SRS) Federal Facility Agreement (FFA, Ref. 2.4.1).

Tank 2 is located in the F-Area Tank Farm (FTF). Commercial Submersible Mixer Pumps (CSMPs) will be installed in Tank 2 to dissolve saltcake, and a submersible transfer pump will be installed in Tank 2 to transfer the dissolved salt solution to Tank 7. As part of the Tank 2 modifications at Tank 2 Riser 2, the annulus to primary (A-P) transfer line WTE-L-209 will be capped at the North Riser, and the remaining pipe leading to Riser 2 will be dismantled and removed (D&R).

The A-P transfer line modification will be conducted per Design Change Package (DCP) P-DCP-F-18006 (Ref. 2.4.4).
This task is not divided into two or more FFA reports.

2.0 Design Information

2.1 This modification will D&R the A-P transfer line from the North Riser to Riser 2.

2.2 Applicable National Codes & Standards:
- 2.2.1 ASME B31.3-2020 Edition Process Piping

2.3 Applicable SRS Engineering Standards and Engineering Guides
- 2.3.1 SRS Engineering Standard 15060, Rev. 21, Additional Requirements for SRS Piping Systems
- 2.3.2 SRS Engineering Guide 15060-G, Rev. 8, Application of ASME B31.3
- 2.3.3 SRS Engineering Standard 05057, Rev. 7, SRS Welding Requirements

2.4 Reference Documents
- 2.4.1 WSRC-OS-94-42, Administrative Document Number 89-05-FF, Federal Facility Agreement for the Savannah River Site, August 16, 1993
- 2.4.2 Assessment Report, Phase II for the F and H Area High Level Radioactive Waste Tank Farms, Rev. 0, 1991
- 2.4.3 M-TC-F-00054, Rev. 2, Task Requirements and Criteria, Tank 2 Salt Dissolution
- 2.4.4 P-DCP-F-18006, Rev. 1, Dismantle and Remove Tank 2 Riser 3 and Inhibited Water Piping
- 2.4.5 M-ML-F-02844, Rev. 0, Tank 2 Waste Tank Equipment Modification Piping Datasheet Package

2.4.6 M-QIP-F-00111, Rev. 3, Tank 2F Modification Quality Inspection Plan

3.0 Waste Compatibility

Waste characterization remains unchanged. The materials of construction used in this modification are compatible with the waste streams, and this modification will not introduce any materials that will invalidate the existing waste characterization. Therefore, the modification in the scope of this assessment will not change the existing waste characterization.

4.0 Foundation Support

This integrity of waste transfer line WTE-L-209 and associated pipe supports was evaluated and found to be satisfactory (see Structural Mechanical Evaluation in Ref. 2.4.4).

5.0 Leak Detection and Past Leaks

WTE-L-209, a Type II transfer line, is sloped toward the Tank 2 annulus and will continue to follow the design requirements of Section 3.7.2 of the Phase II Assessment Report.

As stated in the Phase II Assessment Report, there are no known past or present leaks from the WTE-L-209 core to the jacket piping, or from the WTE-L-209 jacket piping to the environment.

6.0 Inspections

Piping material, fabrication, erection, inspection, examination and testing shall be in accordance with the following:

- ASME Process Piping Code B31.3 – 2020 (Ref. 2.2.1)
- SRS Engineering Standards 15060 (Ref. 2.3.1)
- SRS Engineering Guide 15060-G (Ref. 2.3.2)
- SRS Engineering Standard 05057 SRS Welding Requirements (Ref. 2.3.3)

Fabrication and installation of core and jacket piping are inspected per Quality Inspection Plan M-QIP-F-00111, Rev. 3 (Ref. 2.4.6). The final tie-in weld joints will be vacuum box leak tested due to As Low As Reasonably Achievable (ALARA) concerns, limiting personnel exposure and minimizing contaminated waste water production.

7.0 Determination of Secondary Containment

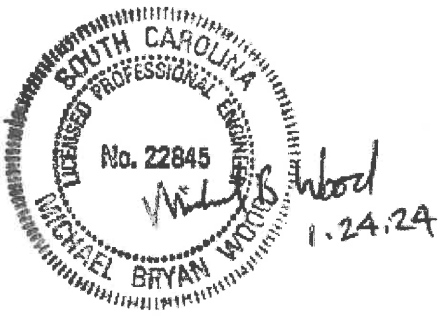
This modification will breach the primary (core) and secondary (jacket) containment of WTE-L-209. Upon implementation of P-DCP-H-18006 the primary and secondary containment associated with WTE-L-209 will meet all FFA requirements and the requirements stated in Section 2.1 of the Phase II Assessment Report (Ref. 2.4.2), as previously evaluated in Section 3.7.2 for Type II transfer lines of the same report. Therefore, no further assessment of the primary and secondary containment of this modification is required.

8.0 Professional Engineer Certifications (Design and Construction)

Design

This assessment report was prepared under my supervision and direction. I certify that D&R of the Tank 2 annulus-to-primary transfer line WTE-L-209, detailed in Design Change Package P-DCP-F-18006 and associated design documents complies with applicable engineering standards and the Standards of Appendix B of the Federal Facility Agreement. These standards have been generally accepted as adequate in demonstrating leak tightness.

Stamp



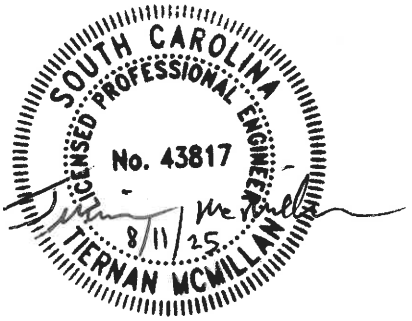


Name:
License Number:

Construction and Installation

I have conducted an inspection, to the extent possible, of the disassembly and removal of Tank 2 annulus-to-primary transfer line WTE-L-209 between the North Riser and Riser 2. I certify that, to the best of my knowledge, information, and belief, the modification was completed as specified in Design Change Package P-DCP-F-18006. I further certify that the modification was tested in accordance with the references noted in section 6.0 of this report. Tests were conducted to demonstrate leak tightness, and the results were acceptable.

Stamp

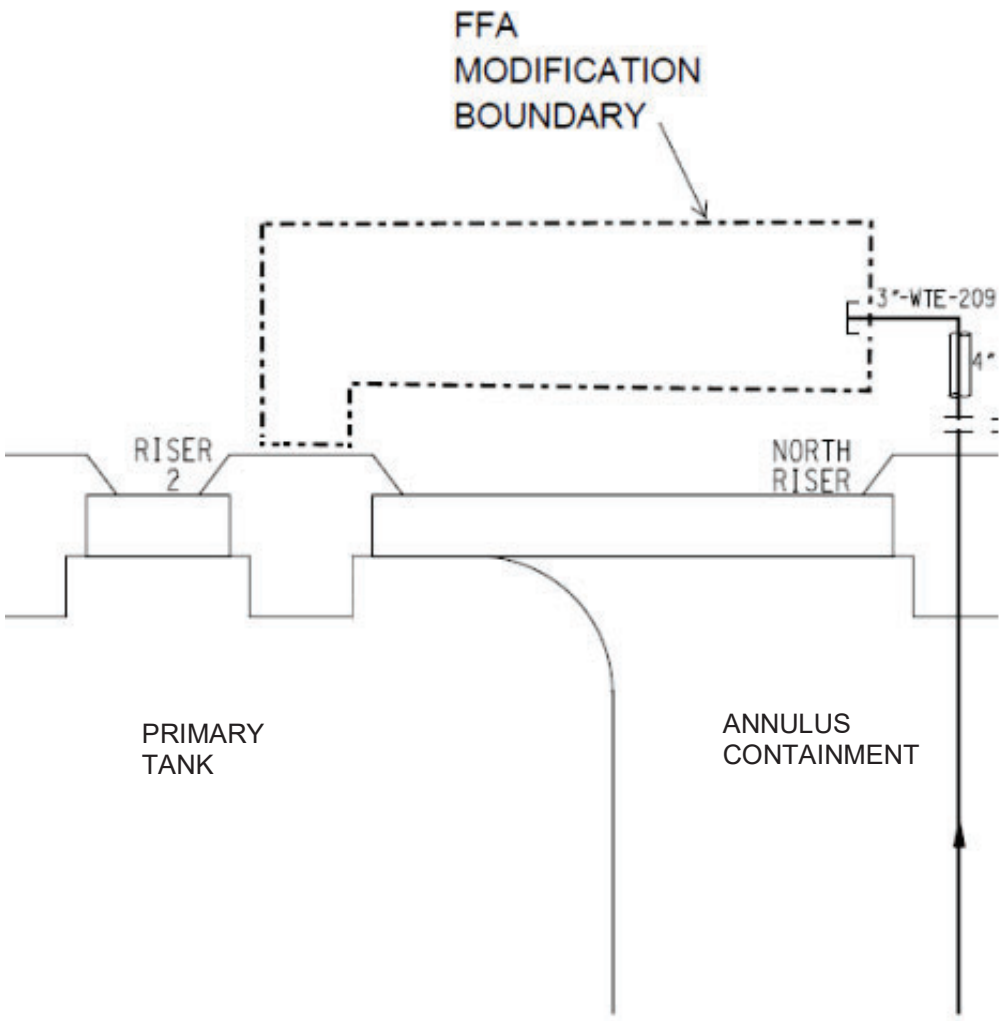




Name:
License Number:

9.0 Attachments

Attachment 9.1 FFA Modification Boundary



TANK 2

Savannah River Site

FEDERAL FACILITY AGREEMENT
ASSESSMENT REPORT

FOR

TANK 14H ANNULUS-TO-PRIMARY
TRANSFER LINE D&R

M-ESR-H-00610
REVISION 0

DISCLAIMER

This report was prepared by Savannah River Mission Completion (SRMC) for the United States Department of Energy under Contract No. 89303322DEM000068 and is an account of work performed under that contract. Neither the United States Department of Energy, nor SRMC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, or product or process disclosed herein or represents that its use will not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trademark, name, and manufacturer or otherwise does not necessarily constitute or imply endorsement, recommendations, or favoring of same by SRMC or by the United States Government or any agency thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

APPROVAL SIGNATURES / SUMMARY OF CHANGES

APPROVALS

PREPARER	DATE
Jaron Walker. Digitally signed by Jaron Walker. Date: 2023.04.26 08:34:58 -04'00' Jaron Walker, Design Services Mechanical/Process Engineer Project Management, Design Engineering	
REVIEWER Thy Truong Digitally signed by Thy Truong Date: 2023.04.27 10:25:20 -04'00' Thy Truong, Design Services Mechanical/Process Engineer Project Management, Design Engineering	
APPROVAL Brian Turi Digitally signed by Brian Turi Date: 2023.04.28 07:26:45 -04'00' Brian Turi, Design Authority Tank Farm Engineering	
APPROVAL Chris Schilling Date: 2023.05.01 08:34:03 -04'00' Chris Schilling, Design Services Project Engineer, Project Management, Design Engineering	

SUMMARY OF CHANGES

Rev. No	Reason for Change	Pages Affected	Issue Date
0	Initial Issue	All	

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 5
2.0 DESIGN INFORMATION 5
2.1 THIS MODIFICATION INCLUDES THE FOLLOWING ACTIVITIES: 5
2.2 APPLICABLE NATIONAL CODES & STANDARDS: 5
2.3 APPLICABLE SRS ENGINEERING STANDARDS AND ENGINEERING GUIDES 5
2.4 REFERENCE DOCUMENTS 5
3.0 WASTE COMPATIBILITY 6
4.0 FOUNDATION SUPPORT 6
5.0 LEAK DETECTION AND PAST LEAKS 6
6.0 INSPECTIONS 6
7.0 DETERMINATION OF SECONDARY CONTAINMENT 6
8.0 PROFESSIONAL ENGINEER CERTIFICATIONS (DESIGN AND CONSTRUCTION) 8
9.0 ATTACHMENTS 9

1.0 Executive Summary

This Assessment Report is being submitted to satisfy requirements of Section IX and Appendix B of the Savannah River Site (SRS) Federal Facility Agreement (FFA, Ref. 2.4.1). Tank 14H, a tank located in the H-Area Tank Farm (HTF), will undergo bulk waste removal (BWR) in preparation for planned operational closure in accordance with the SRMC Schedule.

The existing aboveground transfer line (WTE-L-82) between the South Riser and Riser 7 will be cut and capped at the South Riser and a temporary plug will be install in Riser 7 (Ref. 2.4.4).

The overall task is not divided into multiple FFA Reports.

2.0 Design Information

2.1 This modification includes the following activities:
- 2.1.1 D&R existing annulus-to-primary transfer pipe WTE-L-82 between Riser 7 and the South Riser.
- 2.1.2 Cap WTS-L-82 core and jacket pipe at the South Riser.
- 2.1.3 Install a temporary riser plug (Ref. 2.4.4) at Riser 7.

2.2 Applicable National Codes & Standards:
- 2.2.1 ASME B31.3-2020 Edition Process Piping

2.3 Applicable SRS Engineering Standards and Engineering Guides
- 2.3.1 SRS Engineering Standard 15060, Rev. 21, Additional Requirements for SRS Piping Systems
- 2.3.2 SRS Engineering Guide 15060-G, Rev. 8, Application of ASME B31.3
- 2.3.3 SRS Engineering Standard 05057 SRS Welding Requirements

2.4 Reference Documents
- 2.4.1 WSRC-OS-94-42, Administrative Document Number 89-05-FF, Federal Facility Agreement for the Savannah River Site, August 16, 1993
- 2.4.2 Assessment Report, Phase II for the F and H Area High Level Radioactive Waste Tank Farms, Rev. 0, 1991
- 2.4.3 M-TC-H-00077, Rev. 3, Task Requirements and Criteria, Closure Activities for Tank 241-914 (Tank 14)
- 2.4.4 M-DCF-H-14184, Rev. 0, Tank 14 A-P Transfer Line D&R

2.4.5 M-ML-H-07292, Rev. 5, Piping Data Sheet Package Closure Activities for 241-914H (Tank 14H)

2.4.6 M-QIP-G-00063, Rev. 0, Waste Tanks Riser Cover/Port Plugs Installation Quality Inspection Plan

2.4.7 P-PM-H-08582, Rev. A, Tank 14 Riser 7 and Riser 8 H&V Mods Plans, Sections and Details

3.0 Waste Compatibility

Waste characterization remains unchanged. The materials of construction used in this modification are compatible with the waste streams, and this modification will not introduce any materials that will invalidate the existing waste characterization. Therefore, the modification in the scope of this assessment will not change the existing waste characterization.

4.0 Foundation Support

This integrity of waste transfer line WTE-L-82 and associated pipe supports was evaluated in M-DCF-H-14184 and found to be satisfactory.

5.0 Leak Detection and Past Leaks

The affected transfer lines will meet Section IX and Appendix B of the FFA. These lines will still follow the design presented in Section 3.7.2 of the Phase II Assessment Report (Ref. 2.4.2) for Type II transfer lines.

6.0 Inspections

Piping material, fabrication, erection, inspection, examination and testing shall be in accordance with the following:

- ASME Process Piping Code B31.3 – 2020 (Ref. 2.2.1)
- SRS Engineering Standards 15060 (Ref. 2.3.1)
- SRS Engineering Guide 15060-G (Ref. 2.3.2)
- SRS Engineering Standard 05057 SRS Welding Requirements. (Ref 2.3.3)
- Piping Data Sheet Package M-ML-H-07292 (Ref. 2.4.5).

7.0 Determination of Secondary Containment

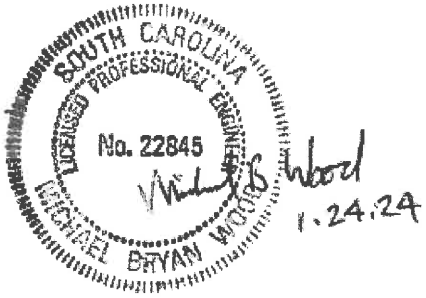
This modification will breach the primary containment (core piping) and secondary containment (jacket piping) of the existing annulus-to-primary transfer line (WTE-L-82). Upon implementation of M-DCF-H-14184 the primary and secondary containment associated with the transfer lines will meet all FFA requirements and the requirements stated in Section 2.1 of the Phase II Assessment Report (Ref. 2.4.2), as previously evaluated in Section 3.7.2 for Type II transfer lines of the same report. Therefore, no further assessment of the primary and secondary containment of this modification is required.

8.0 Professional Engineer Certifications (Design and Construction)

Design

This assessment report was prepared under my supervision and direction. I certify that design of the modifications detailed in Design Change Form M-DCF-H-14184 and associated design documents complies with applicable engineering standards and the Standards of Appendix B of the Federal Facility Agreement. These standards have been generally accepted as adequate in demonstrating leak tightness.

Stamp



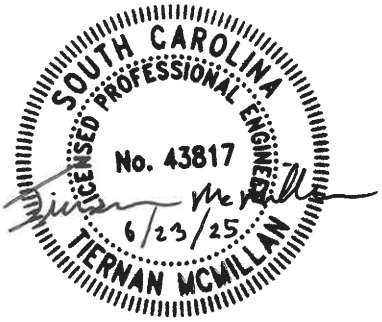


Name:
License Number:

Construction and Installation

I have conducted an inspection, to the extent possible, of the disassembly and removal of waste transfer line WTE-L-82 between the South Riser and Riser 7. I certify that, to the best of my knowledge, information, and belief, the waste transfer line modification was completed as specified in Design Change Form M-DCF-H-14184. I further certify that the modification was tested in accordance with the references noted in section 6.0 of this report. Tests were conducted to demonstrate leak tightness, and the results were acceptable.

Stamp

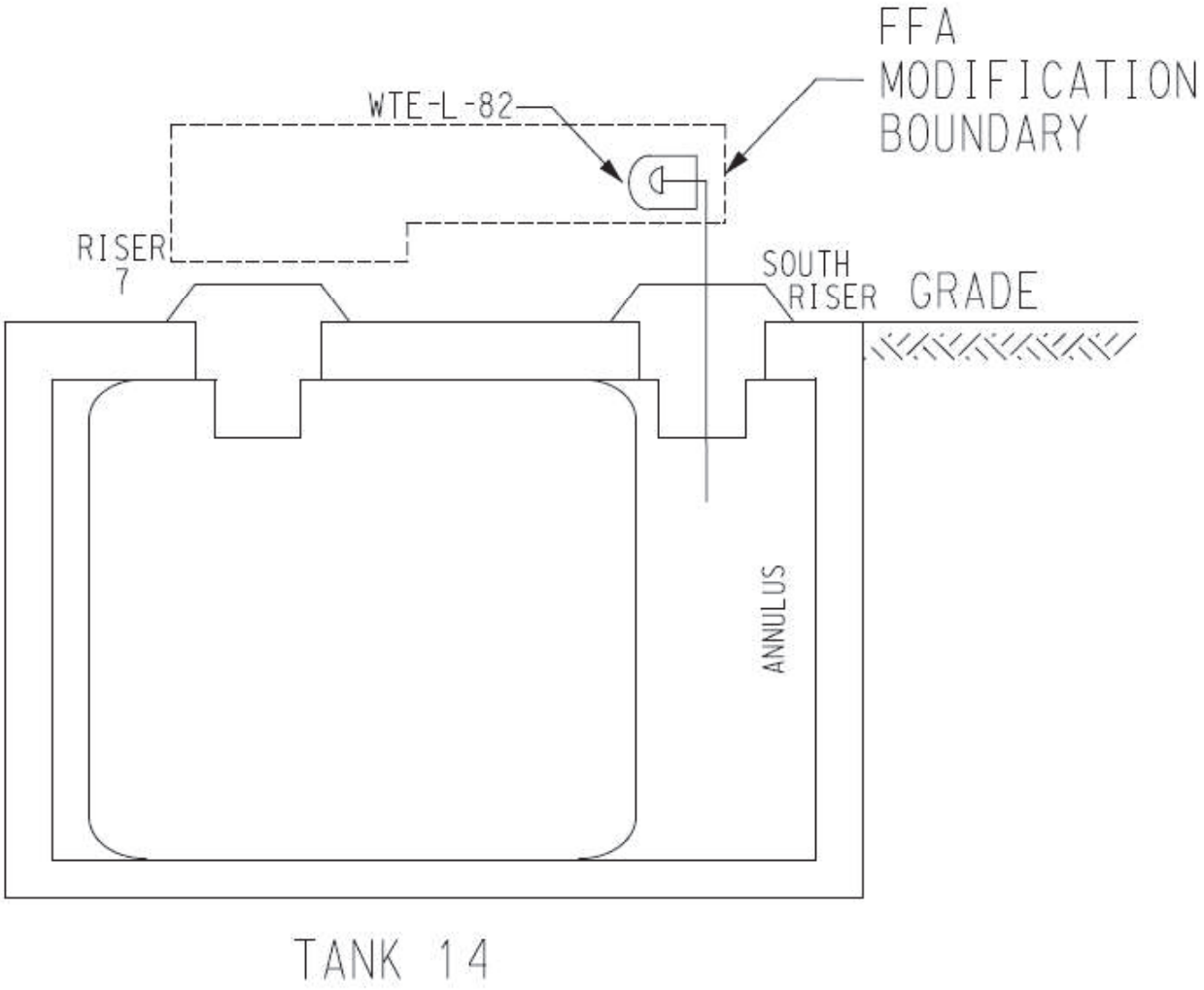




Name:
License Number:

9.0 Attachments

Attachment 9.1 FFA Modification Boundary



Savannah River Site

FEDERAL FACILITY AGREEMENT
ASSESSMENT REPORT

FOR

TANK 14H WASTE TRANSFER LINE
WTS-L-104

M-ESR-H-00612

DISCLAIMER

This report was prepared by Savannah River Mission Completion (SRMC) for the United States Department of Energy under Contract No. 89303322DEM000068 and is an account of work performed under that contract. Neither the United States Department of Energy, nor SRMC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, or product or process disclosed herein or represents that its use will not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trademark, name, and manufacturer or otherwise does not necessarily constitute or imply endorsement, recommendations, or favoring of same by SRMC or by the United States Government or any agency thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

APPROVAL SIGNATURES / SUMMARY OF CHANGES

APPROVALS

PREPARER	DATE
WILLIAM PARSONS (Affiliate) Digitally signed by WILLIAM PARSONS (Affiliate) Date: 2025.05.12 10:10:09 -04'00' William Parsons, Design Services Mechanical/Process Engineer Programs, Design & Project Engineering	5/12/25
REVIEWER David Lindberg Digitally signed by David Lindberg Date: 2025.05.12 11:29:53 -04'00' David Lindberg, Design Services Mechanical/Process Engineer Programs, Design & Project Engineering	5/12/25
APPROVAL KAYLA ELDRIDGE (Affiliate) Digitally signed by KAYLA ELDRIDGE (Affiliate) Date: 2025.05.22 15:21:20 -04'00' Kayla Eldridge, Design Authority Tank Farm Engineering	5/22/25
APPROVAL Samuel Rollings Digitally signed by Samuel Rollings Date: 2025.05.22 13:40:16 -04'00' Sam Rollings, Design Services Project Engineer Project Management, Design and Construction Services	5/22/25

SUMMARY OF CHANGES

Rev. No	Reason for Change	Pages Affected	Issue Date
0	Initial Issue	All	

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 5
2.0 DESIGN INFORMATION 5
3.0 WASTE COMPATIBILITY 6
4.0 FOUNDATION SUPPORT 6
5.0 LEAK DETECTION AND PAST LEAKS 6
6.0 INSPECTIONS 7
7.0 DETERMINATION OF SECONDARY CONTAINMENT 7
8.0 PROFESSIONAL ENGINEER CERTIFICATIONS (DESIGN AND CONSTRUCTION) 8
9.0 ATTACHMENTS 9

1.0 Executive Summary

This Assessment Report is being submitted to satisfy requirements of Section IX and Appendix B of the Savannah River Site (SRS) Federal Facility Agreement (FFA, Ref. 2.4.1). Tank 14H, a tank located in the H-Area Tank Farm (HTF), will undergo bulk waste removal (BWR) in preparation for planned operational closure in accordance with the SRMC Schedule. BWR will include installation of waste transfer capability between Tanks 14H and 13H.

Installation of waste transfer line WTS-L-104 between Tank 14 Riser 6 and Tank 13 Riser 6 will be conducted under M-DCP-H-21011 (Rev. 2.4.3) and M-DCP-H-21014 (Ref. 2.4.4). The former DCP, as amended by M-DCF-H-14131 (Ref. 2.4.8), M-DCF-H-14552 (Ref. 2.4.11), M-DCF-H-14245 (Ref. 2.4.12), and M-DCF-H-14678 (Ref. 2.4.13) will extend WTS-L-104 above each riser. The later DCP, as amended by C-DCF-H-04751 (ref. 2.4.9), will extend WTS-L-104 aboveground between the terminations, completing closure welds in this line above each riser.

The overall task is not divided into multiple FFA Assessment Reports.

2.0 Design Information

2.1 This modification includes the following activities:
- 2.1.1 Install a new stainless-steel primary containment (core) transfer pipe WTS-L-104 and carbon steel secondary containment (jacket) pipe between Tank 13 Riser 6 and Tank 14 Riser 6.
- 2.1.2 Install a new STP in Tank 14 Riser 6.
- 2.1.3 Replace Tank 13 Riser 6 RTP, including a new manifold and transfer line tie in.

2.2 Applicable National Codes & Standards:
- 2.2.1 ASME B31.3-2020 Edition Process Piping

2.3 Applicable SRS Engineering Standards and Engineering Guides
- 2.3.1 SRS Engineering Standard 15060, Rev. 21, Additional Requirements for SRS Piping Systems
- 2.3.2 SRS Engineering Guide 15060-G, Rev. 8 Addendum 2, Application of ASME B31.3

2.4 Reference Documents
- 2.4.1 WSRC-OS-94-42, Administrative Document Number 89-05-FF, Federal Facility Agreement for the Savannah River Site, August 16, 1993

2.4.2 Assessment Report, Phase II for the F and H Area High Level Radioactive Waste Tank Farms, Rev. 0, 1991

2.4.3 M-DCP-H-21011, Rev. 0, Tank 13 Riser 6 RTP and Tank 14 Riser 6 STP Installations

2.4.4 M-DCP-H-21014, Rev. 0, Install Waste Transfer Line Between Tanks 13 and 14

2.4.5 M-ML-H-07292, Rev. 7, Piping Data Sheet Package Closure Activities for 241-914H

2.4.6 M-QIP-H-00474, Rev. 2, Tank 14 Transfer Line Installation Quality Inspection Plan

2.4.7 T-CLC-H-01446, Rev. 3, Tank 14 Annulus and Transfer Line Stress Evaluation

2.4.8 M-DCF-H-14131, Rev. 1, Remove APTS Piping from Scope of Tank 14 STP Installation

2.4.9 C-DCF-H-04751, Rev. 5, Tank 14 Transfer Line Support Details Update

2.4.10 C-CLC-H-01708, Rev. 2, Tank 13-14H Transfer Line Support Calculation

2.4.11 M-DCF-H-14552, Rev. 1, Revise Reference Drawings to add Assembly Drawings for Tank 13 and Tank 14 Transfer Pumps

2.4.12 M-DCF-H-14245, Rev. 0, Dischg Manifold and Telescoping Assy Improvements for Tank 13 Riser 6 RTP and Tank 14 Riser 6 STP

2.4.13 M-DCF-H-14678, Rev. 0, Replace FFA Assessment Report with M-ESR-H-00612

3.0 Waste Compatibility

Waste characterization remains unchanged. The materials of construction used in this modification are compatible with the waste streams, and this modification will not introduce any materials that will invalidate the existing waste characterization. Therefore, the modification in the scope of this assessment will not change the existing waste characterization.

4.0 Foundation Support

The integrity of WTS-L-104 and associated pipe supports was evaluated in T-CLC-H-01446 (Ref. 2.4.7) and found to be satisfactory. Changes to support structures covered in C-DCF-H-04751 (Ref. 2.4.9) are enveloped by analysis found in both (Ref. 2.4.7) and C-CLC-H-01708 (Ref. 2.4.10).

5.0 Leak Detection and Past Leaks

The affected transfer lines will meet Section IX and Appendix B of the FFA. WTS-L-104 will follow the design presented in Section 3.7.2 of the Phase II Assessment Report (Ref. 2.4.2) for Type II transfer lines.

6.0 Inspections

Piping material, fabrication, erection, inspection, examination, and testing shall be in accordance with the following:

- ASME Process Piping Code B31.3 – 2020 (Ref. 2.2.1)
- SRS Engineering Standards 15060 (Ref. 2.3.1)
- SRS Engineering Guide 15060-G (Ref. 2.3.2)
- Piping Data Sheet Package M-ML-H-07292 (Ref. 2.4.5).

Requirements for quality inspection of the transfer piping above each riser are specified in M-QIP-H-00474 (Ref. 2.4.6).

7.0 Determination of Secondary Containment

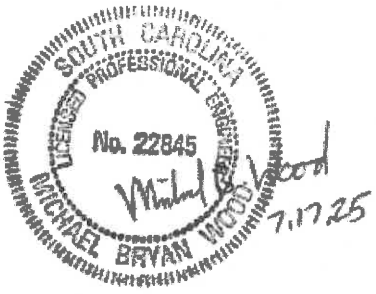
This modification will breach the primary containment (core piping) and secondary containment (jacket piping) of transfer pipe WTS-L-104. Upon field installation of M-DCP-H-21011 and M-DCP-H-21014, primary and secondary containment associated with the transfer line will meet all FFA requirements and the requirements stated in Section 2.1 of the Phase II Assessment Report (Ref. 2.4.2), as previously evaluated in Section 3.7.2 for Type II transfer lines of the same report. Therefore, no further assessment of the primary and secondary containment of this modification is required.

8.0 Professional Engineer Certifications (Design and Construction)

Design

This assessment report was prepared under my supervision and direction. I certify that design of the modifications detailed in Design Change Packages M-DCP-H-21011 and M-DCP-H-21014 and associated design documents complies with applicable engineering standards and the Standards of Appendix B of the Federal Facility Agreement. These standards have been generally accepted as adequate in demonstrating leak tightness.

Stamp





Name:
License Number:

Construction and Installation

I have conducted an inspection, to the extent possible, of the completion of new waste transfer line WTS-L-104 while the piping is still under construction. Based upon the inspection, I certify that, to the best of my knowledge, information, and belief, the waste transfer piping is constructed in accordance with M-DCP-H-21011 and M-DCP-H-21014. I further certify that the modification was tested in accordance with requirements summarized in Section 6.0 of this Report. The tests were conducted to demonstrate leak tightness, and the results were found acceptable.

Stamp

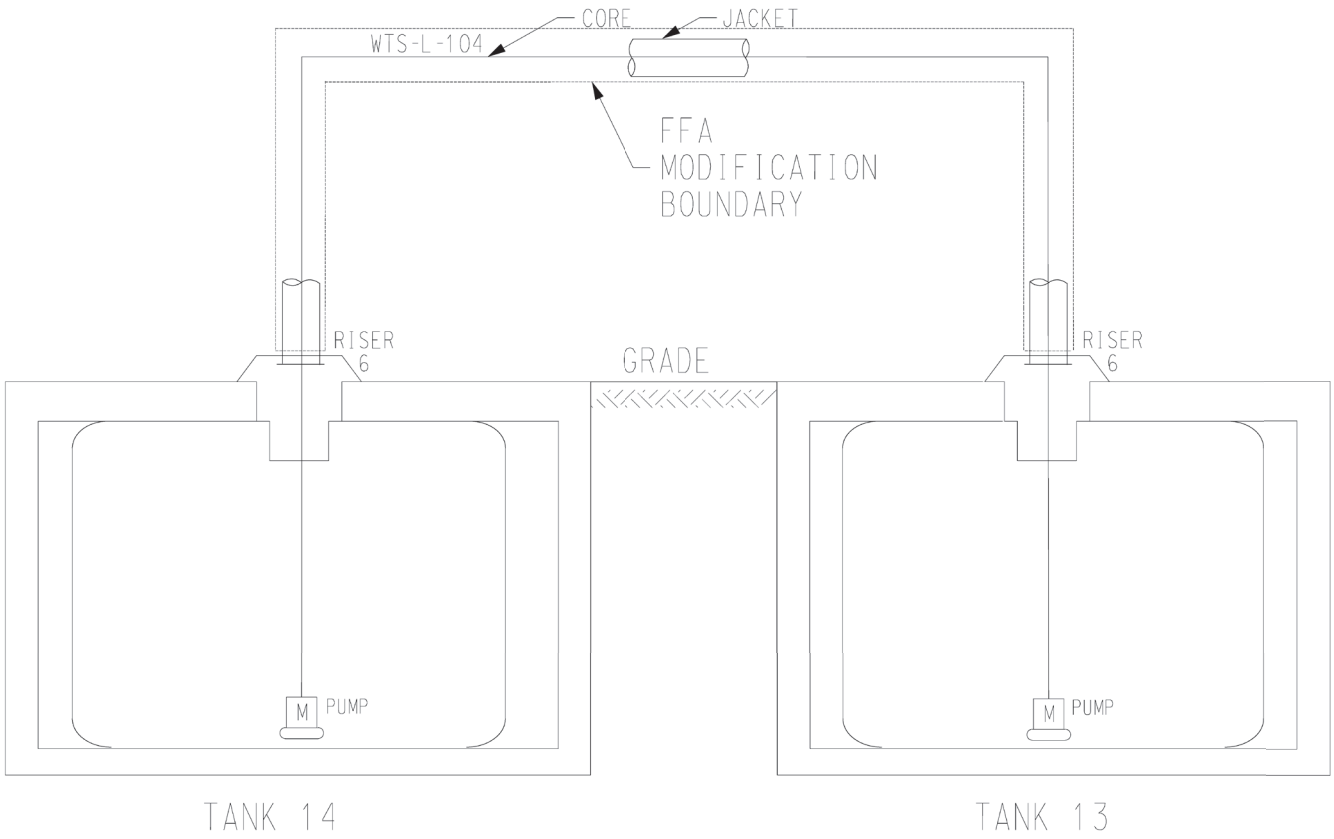




Name:
License Number:

9.0 Attachments

Attachment 9.1 FFA Modification Boundary



Savannah River Site

FEDERAL FACILITY AGREEMENT
ASSESSMENT REPORT

FOR

TANK 14H D&R ANNULUS TO PRIMARY TRANSFER LINE WTE-L-18

M-ESR-H-00628
REVISION 0

DISCLAIMER

This report was prepared by Savannah River Mission Completion (SRMC) for the United States Department of Energy under Contract No. 89303322DEM000068 and is an account of work performed under that contract. Neither the United States Department of Energy, nor SRMC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, or product or process disclosed herein or represents that its use will not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trademark, name, and manufacturer or otherwise does not necessarily constitute or imply endorsement, recommendations, or favoring of same by SRMC or by the United States Government or any agency thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

APPROVAL SIGNATURES / SUMMARY OF CHANGES

APPROVALS

PREPARER	DATE
Jaron Walker. Digitally signed by Jaron Walker. Date: 2023.09.26 12:37:54 -04'00' Jaron Walker, Design Services Mechanical/Process Engineer Project Management, Design Engineering	
REVIEWER	
David Lindberg Digitally signed by David Lindberg Date: 2023.09.26 14:50:16 -04'00' David Lindberg, Design Services Mechanical/Process Engineer Project Management, Design Engineering	
APPROVAL	
Kayla R. Eldridge Digitally signed by Kayla R. Eldridge Date: 2023.10.16 16:26:00 -04'00' Kayla Eldridge, Design Authority Tank Farm Engineering	
APPROVAL	
Christopher Schilling Digitally signed by Christopher Schilling Date: 2023.10.24 14:43:49 -04'00' Chris Schilling, Design Services Project Engineer, Project Management, Design Engineering	

SUMMARY OF CHANGES

Rev. No	Reason for Change	Pages Affected	Issue Date
0	Initial Issue	All	

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 5
2.0 DESIGN INFORMATION 5
2.1 THIS MODIFICATION INCLUDES THE FOLLOWING ACTIVITIES: 5
2.2 APPLICABLE NATIONAL CODES & STANDARDS: 5
2.3 APPLICABLE SRS ENGINEERING STANDARDS AND ENGINEERING GUIDES 5
2.4 REFERENCE DOCUMENTS 5
3.0 WASTE COMPATIBILITY 6
4.0 FOUNDATION SUPPORT 6
5.0 LEAK DETECTION AND PAST LEAKS 6
6.0 INSPECTIONS 7
7.0 DETERMINATION OF SECONDARY CONTAINMENT 7
8.0 PROFESSIONAL ENGINEER CERTIFICATIONS (DESIGN AND CONSTRUCTION) 8
9.0 ATTACHMENTS 9

1.0 Executive Summary

This Assessment Report is being submitted to satisfy requirements of Section IX and Appendix B of the Savannah River Site (SRS) Federal Facility Agreement (FFA, Ref. 2.4.1). Tank 14H, a tank located in the H-Area Tank Farm (HTF), will undergo bulk waste removal (BWR) in preparation for planned operational closure in accordance with the SRMC Schedule.

The existing annulus to primary transfer line (WTE-L-18) between Inspection Port IP-96.5 and Riser 3 must be removed to allow for installation of a new commercial submersible mixing pump (CSMP) in Riser 3, in accordance with Design Change Package M-DCP-H-21015 (Ref. 2.4.4) and Design Change Form P-DCF-H-02465 (Ref. 2.4.5). The transfer line jacket pipe, WTE-L-18J, and motive steam supply line, WTE-L-79, will be capped above Inspection Port IP 96.5 and a new CSMP riser cover will be installed over Riser 3.

The overall task is not divided into multiple FFA Reports.

2.0 Design Information

2.1 This modification includes the following activities:

- 2.1.1 Cut and cap existing annulus to primary transfer line WTE-L-18 above the Tank 14 inspection port IP96.5.
- 2.1.2 D&R remaining transfer line WTE-L-18 going back to Riser 3 and add a new CSMP Riser Cover to Riser 3.
- 2.1.3 Cut and cap existing steam supply line WTE-L-79 to Transfer Jet Pump WTE-P-5 above the Tank 14 inspection port IP96.5.

2.2 Applicable National Codes & Standards:

- 2.2.1 ASME B31.3-2020 Edition Process Piping

2.3 Applicable SRS Engineering Standards and Engineering Guides

- 2.3.1 SRS Engineering Standard 15060, Rev. 21-ADD-1, Additional Requirements for SRS Piping Systems
- 2.3.2 SRS Engineering Guide 15060-G, Rev. 8-ADD-3, Application of ASME B31.3
- 2.3.3 SRS Engineering Standard 05057 SRS Welding Requirements

2.4 Reference Documents

2.4.1 WSRC-OS-94-42, Administrative Document Number 89-05-FF, Federal Facility Agreement for the Savannah River Site, August 16, 1993

2.4.2 WSRC-RP-93-549, Assessment Report, Phase II for the F and H Area High Level Radioactive Waste Tank Farms, Rev. 0, 1991

2.4.3 M-TC-H-00077, Rev. 3, Task Requirements and Criteria, Closure Activities for Tank 241-914 (Tank 14)

2.4.4 M-DCP-H-21015, Rev. 0, Tank 14 CSMP Installations

2.4.5 P-DCF-H-02465, Rev. 0, Annulus Jet Pump Isolation

2.4.6 M-ML-H-07292, Rev. 5, Piping Data Sheet Package Closure Activities for 241-914H (Tank 14H)

2.4.7 M-QIP-H-00486, Rev. 0, Tank 14 Risers 1, 3, 4A and 8 Commercial Submersible Mixing Pumps (CSMPs) Installation Quality Inspection Plan

3.0 Waste Compatibility

Waste characterization remains unchanged. The materials of construction used in this modification are compatible with the waste streams, and this modification will not introduce any materials that will invalidate the existing waste characterization. Therefore, the modification in the scope of this assessment will not change the existing waste characterization.

4.0 Foundation Support

This integrity of waste transfer line WTE-L-18, transfer jet pump steam supply line WTE-L-79 and associated pipe supports was evaluated and found to be satisfactory. See M-DCP-H-21015 (Ref. 2.4.4), P-DCF-H-02465 (Ref. 2.4.5) and M-ML-H-07292, Rev. 5 (Ref. 2.4.6) for justification.

5.0 Leak Detection and Past Leaks

There are no known leaks in line WTE-L-18. Since motive steam supply to WTE-P-5 in IP-96.5 is out of service, WTE-P-5 is incapable of transferring waste outside of the tank annulus without future modifications. The transfer line jacket, WTE-L-18J, and steam supply line WTE-L-79 will be treated as part of the tank containment boundary and will meet the relevant requirements for secondary containment in Section IX and Appendix B of the FFA (Ref. 2.4.1). The cap installed at the end of WTE-

L-18J above IP 96.5 will be inspected as "Other FFA Piping" in Table 5.5-1 of Engineering Standard 15060 (Ref. 2.3.1) to ensure no leaks.

6.0 Inspections

Piping material, fabrication, erection, inspection, examination, and testing shall be in accordance with the following:

- ASME Process Piping Code B31.3 – 2020 (Ref. 2.2.1)
- SRS Engineering Standards 15060 (Ref. 2.3.1)
- SRS Engineering Guide 15060-G (Ref. 2.3.2)
- Piping Data Sheet Package M-ML-H-07292 (Ref. 2.4.5).
- SRS Engineering Standard 05057 SRS Welding Requirements (Ref. 2.3.3)
- Quality Inspection Plan, M-QIP-H-00486 (Ref. 2.4.6)

7.0 Determination of Secondary Containment

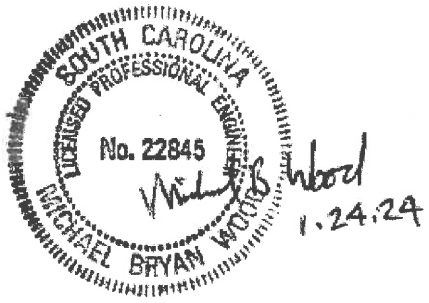
Upon implementation of M-DCP-H-21015, WTE-L-18J and WTE-L-79 will be considered part of the secondary containment for Tank 14. This modification meets the secondary containment requirements in Section IX and Appendix B of the FFA (Ref. 2.4.1) as noted in section 5. Therefore, no further assessment of the primary and secondary containment of this modification is required.

8.0 Professional Engineer Certifications (Design and Construction)

Design

This assessment report was prepared under my supervision and direction. I certify that design of the modifications detailed in Design Change Package M-DCP-H-21015 and associated design documents complies with applicable engineering standards and the Standards of Appendix B of the Federal Facility Agreement. These standards have been generally accepted as adequate in demonstrating leak tightness.

Stamp



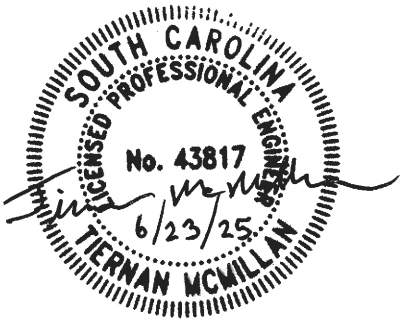


Name:
License Number:

Construction and Installation

I have conducted an inspection, to the extent possible, of the modification to Tank 14 primary transfer line WTE-L-18 between inspection port IP 96.5 and Riser 3. I certify that, to the best of my knowledge, information, and belief, the modification was completed as specified in Design Change Package M-DCF-H-21015. I further certify that the modification was tested in accordance with the references noted in section 6.0 of this report. Tests were conducted to demonstrate leak tightness, and the results were acceptable.

Stamp

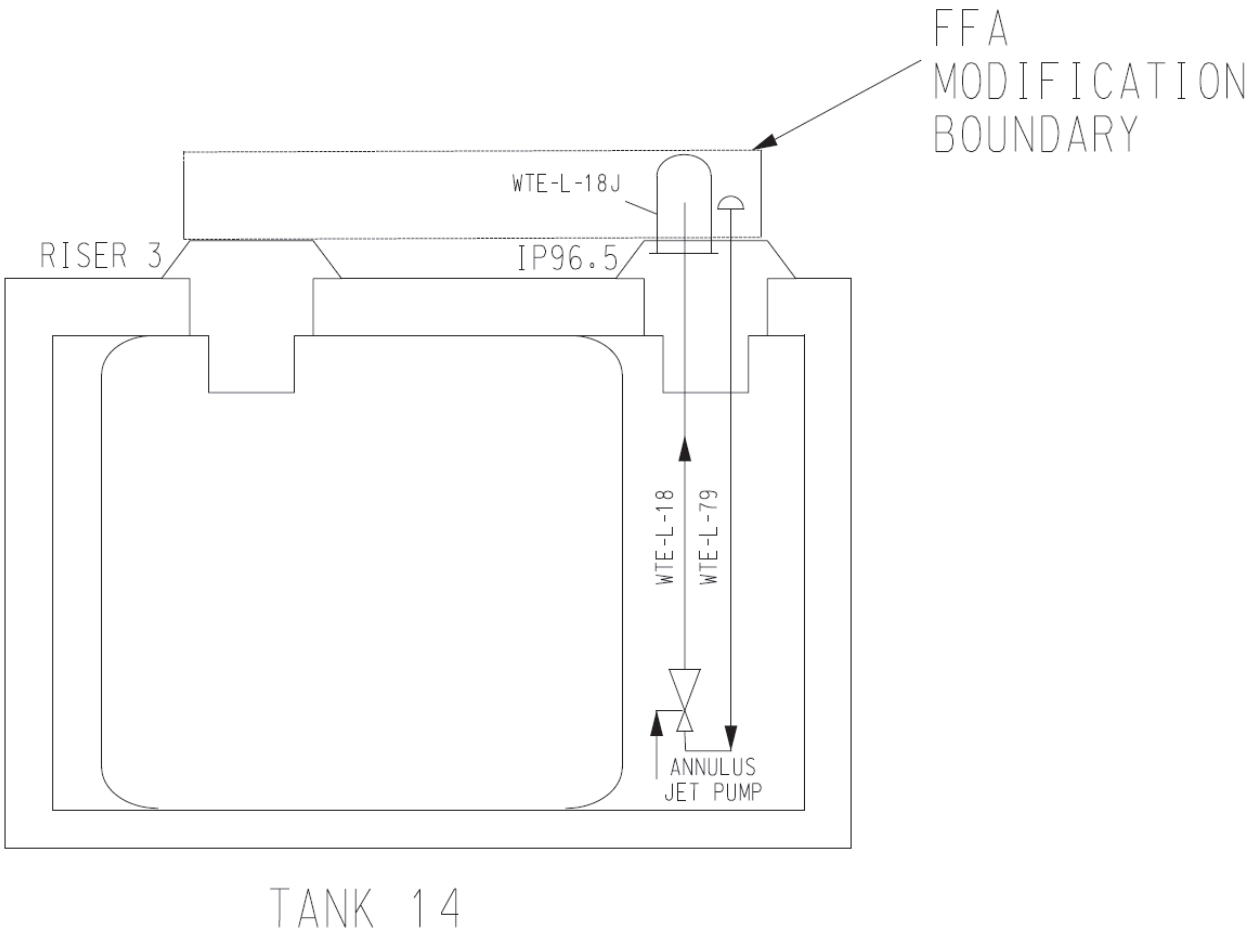




Name:
License Number:

9.0 Attachments

Attachment 9.1 FFA Modification Boundary



Savannah River Site

FEDERAL FACILITY AGREEMENT
ASSESSMENT REPORT

FOR

REMOVAL OF
WASTE REMOVAL HOSE IN HOSE TRANSFER LINES BETWEEN TANK 15H RISER 7 AND TANK 13H RISER 6

M-ESR-H-00669
REVISION 0

DISCLAIMER

This report was prepared by Savannah River Mission Completion (SRMC) for the United States Department of Energy under Contract No. 89303322DEM000068 and is an account of work performed under that contract. Neither the United States Department of Energy, nor SRMC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, or product or process disclosed herein or represents that its use will not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trademark, name, and manufacturer or otherwise does not necessarily constitute or imply endorsement, recommendations, or favoring of same by SRMC or by the United States Government or any agency thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

APPROVAL SIGNATURES / SUMMARY OF CHANGES

APPROVALS

PREPARER Thy Truong Digitally signed by Thy Truong Date: 2025.02.27 11:19:24 -05'00' Thy Truong, Design Services Mechanical Engineer Project Management, Design and Construction Services	DATE
REVIEWER JAMES CAMPBELL (Affiliate) Digitally signed by JAMES CAMPBELL (Affiliate) Date: 2025.02.27 11:29:04 -05'00' James Campbell, Design Services Mechanical/Process Engineer Project Management, Design and Construction Services	
APPROVAL SETH CAMPBELL Digitally signed by SETH CAMPBELL Date: 2025.02.27 12:51:12 -05'00' Seth Campbell, Design Authority Tank Farm Engineering	
APPROVAL Chi Leung Digitally signed by Chi Leung Date: 2025.03.03 16:14:26 -05'00' Chi Leung, Project Engineering Manager, Project Management, Design and Construction Services	

SUMMARY OF CHANGES

Rev. No	Reason for Change	Pages Affected	Issue Date
0	Initial Issue	All	

Table of Contents

1.0 EXECUTIVE SUMMARY 5
2.0 DESIGN INFORMATION 5
3.0 WASTE COMPATIBILITY 6
4.0 FOUNDATION SUPPORT 6
5.0 LEAK DETECTION AND PAST LEAKS 6
6.0 INSPECTIONS 7
7.0 DETERMINATION OF SECONDARY CONTAINMENT 7
8.0 PROFESSIONAL ENGINEER CERTIFICATIONS (DESIGN AND CONSTRUCTION) 8
9.0 ATTACHMENTS 9

1.0 Executive Summary

This Assessment Report is being submitted to satisfy requirements of Section IX and Appendix B of the Savannah River Site (SRS) Federal Facility Agreement (FFA, Ref. 2.4.1).

Hose-in-Hose Transfer Lines (HIHTLs) were installed to facilitate waste removal transfers between Tank 15H and Tank 13H, per M-TC-H-00080 (Ref. 2.4.3). In order to commence waste removal activities in Tank 14H, the Tank 15H HIHTLs must be removed. This will allow for the physical tie-in of the Tank 14H to Tank 13H transfer line. HIHTLs removal will be implemented via removal of temporary modification HTF-TMC-14-004.

The HIHTLs consists of two 1½-inch hose core lines and two 3-inch hose jackets lines. They are two separate hose-in-hose lines and accompanying shielding, which will be removed from Tank 15H Riser 7 to Tank 13H Riser 6.

2.0 Design Information

2.1 This modification will remove two HIHTLs and associated shielding.
- 2.1.1 Remove inner core hose and outer jacket hose from Tank 15 STP pump discharge piping in Riser 7 to Tank 13H Riser 6 downcomer piping.
- 2.1.2 Remove inner core hose and outer jacket hose from Tank 13H RTP pump discharge piping in Riser 6 to Tank 15H Riser 7 downcomer piping.
- 2.1.3 Remove all accompany shielding of the two HIHTLs.
- 2.1.4 The riser covers and the cover port plugs will be reinstalled and verified after the hose removal activities completed.

2.2 Applicable National Codes & Standards:
- 2.2.1 ASME B31.3-2020 Edition Process Piping

2.3 Applicable SRS Engineering Standards and Engineering Guides
- 2.3.1 SRS Engineering Standard 15060, Rev. 21, Additional Requirements for SRS Piping Systems
- 2.3.2 SRS Engineering Guide 15060-G, Rev. 8, Application of ASME B31.3

2.4 Reference Documents

2.4.1 WSRC-OS-94-42, Administrative Document Number 89-05-FF, Federal Facility Agreement for the Savannah River Site, August 16, 1993

2.4.2 WSRC-RP-93-549, Assessment Report, Phase II for the F and H Area High Level Radioactive Waste Tank Farms, Rev. 0, 1991

2.4.3 M-TC-H-00080, Rev. 8, Task Requirements and Criteria Closure Activities For 241-915h (Tank 15)

2.4.4 M-ESR-H-00404, Rev. 1, Federal Facility Agreement Assessment Report for Waste Removal Hose in Hose Transfer from Waste Tank 15h Riser 7 To Tank 13h Riser 6

2.4.5 M-QIP-G-00063, Rev. 2, Waste Tanks Riser Cover/Port Plugs/Riser Equipment Installation Quality Inspection Plan

2.4.6 HTF-TMC-14-004, Rev. 1, Tank 15 To Tank 13 Hose in Hose Transfer

2.4.7 M-M6-H-8910, Rev. 14, H Area Old Hill Manual Gang Valves, Tank 13 and Tank 14 Waste Transfer System Piping and Instrument Drawing (U)

2.4.8 M-M6-H-8911, Rev. 9, H Area Old Hill Tanks 15 And 16 Waste Transfer System Piping and Instrument Drawing (U)

3.0 Waste Compatibility

The modifications in HTF-TMC-14-004, Rev. 1 (Ref. 2.4.6) are being removed and the remaining equipment need to be consistent with the FFA documents (Ref. 2.4.1 and 2.4.2). Drawings M-M6-H-8910 (Ref. 2.4.7) and M-M6-8911 (Ref. 2.4.8) show the permanent configuration. Since those drawings show no transfer system remaining, the FFA is satisfied.

4.0 Foundation Support

The removal of the HIHTLs in the scope of this assessment will not require support calculations.

5.0 Leak Detection and Past Leaks

None.

6.0 Inspections

Piping material, fabrication, erection, inspection, examination, and testing shall be in accordance with the following:

- ASME Process Piping Code B31.3 – 2020 (Ref. 2.2.1)
- SRS Engineering Standards 15060 (Ref. 2.3.1)
- SRS Engineering Guide 15060-G (Ref. 2.3.2)

Verify the riser covers and the cover port plugs are sealed per the Quality Inspection Plan (QIP) M-QIP-G-00063 (Ref. 2.4.5).

7.0 Determination of Secondary Containment

Once the operation of Temporary Modification is complete and the HIHTLs have been removed, the primary and secondary containments will satisfy FFA requirements and the requirements stated in Section 2.1 of the Phase II Assessment Report (Ref. 2.4.2) as previously evaluated in Section 3.6.6 of this same report. Therefore, no further assessment of the primary and secondary containment of this modification is required.

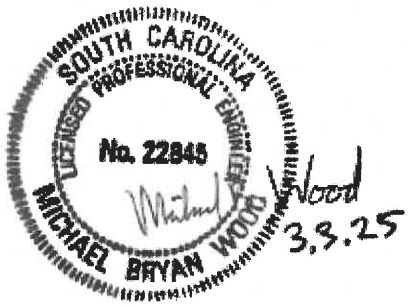
8.0 Professional Engineer Certifications (Design and Construction)

Design

This assessment report was prepared under my supervision and direction. I certify that the removal of the modification HTF-TMC-14-004 and associated design documents, kept with applicable engineering standards and the Standards of Appendix B of the Federal Facility Agreement. These standards have been generally accepted as adequate in demonstrating leak tightness.

Stamp





Name:
License Number:

Construction and Installation

I have conducted an inspection, to the extent possible, of the completion of the removal of two HIHTLs and associated shielding. Based upon the inspection, I certify that, to the best of my knowledge, information, and belief, the removal of the hose in hose transfer lines between Waste Tank 15H Riser 7 and Tank 13H Riser 6 was completed in accordance with the approved design in Temporary Modification Package HTF-TMC-14-004. I further certify that the modification was inspected in accordance with the requirements summarized in Section 6.0 of this Report.

Stamp





Name:
License Number:

9.0 Attachments

Attachment 9.1 FFA Modification Boundary

