Decommissioning Project Final Report
Building 454-D, D-Area Diesel Fuel Tank

Prepared by: BRIANNA ZAWACKI (Affiliate) Digitally signed by BRIANNA ZAWACKI (Affiliate) Date: 2022.07.14 10:28:23 -04'00' Date: 7/14/2022

Brianna Zawacki
EC&ACP Engineering
Environmental Compliance & Area Completion Projects

Reviewed by: i4415 Digitally signed by i4415 Date: 2022.07.14 12:17:25 -04'00' Date: 7/14/22

Ira A. Davis
EC&ACP Engineering
Environmental Compliance & Area Completion Projects

Reviewed by: Steven Conner Digitally signed by Steven Conner Date: 2022.07.14 11:52:07 -04'00' Date: 7/14/22

Steven Conner
Acting Project Team Lead
Environmental Compliance & Area Completion Projects

Reviewed by: Shannan Lucero Digitally signed by Shannan Lucero Date: 2022.07.14 12:47:54 -04'00' Date: 7/14/22

Shannan Lucero
Manager, ACP Projects
Environmental Compliance & Area Completion Projects

Approved: CLARENCE WARD (Affiliate) Digitally signed by CLARENCE WARD (Affiliate) Date: 2022.07.14 14:26:53 -04'00' Date: 7/14/22

C. J. Ward
EC&ACP Environmental Compliance Authority Manager
Environmental Compliance & Area Completion Projects

Approved: THELESIA OLIVER (Affiliate) Digitally signed by THELESIA OLIVER (Affiliate) Date: 2022.07.14 20:32:34 -04'00' Date: 7/14/22

T. O. Oliver
EC&ACP Chief Engineer
Environmental Compliance & Area Completion Projects

Approved: CHRISTOPHER BERGREN (Affiliate) Digitally signed by CHRISTOPHER BERGREN (Affiliate) Date: 2022.07.15 06:41:00 -04'00' Date: 7/15/22

C. L. Bergren
Director, EC&ACP
Environmental Compliance & Area Completion Projects

Savannah River Site
Aiken, South Carolina 29808

Savannah River Nuclear Solutions, LLC
A Fluor Daniel Partnership

DISCLAIMER

Printed in the United States of America

Prepared for
U.S. Department of Energy
and
Savannah River Nuclear Solutions LLC
Aiken, South Carolina

History of Revisions

Revision	Date	Revised Section	Change
0	7/14/2022	N/A	Initial Issue

LIST OF ABBREVIATIONS AND ACRONYMS

~	approximately
COVID	Coronavirus Disease
CRO	Community Reuse Organization
D&R	dismantlement and removal, dismantled and removed
DOE-SR	Department of Energy Savannah River Operations Office
EPA	(U.S.) Environmental Protection Agency
EC&ACP	Environmental Compliance & Area Completion Projects
FAI	Final Acceptance Inspection
FDE	Facility Decommissioning Evaluation
ft	foot, feet
gal	gallon
in.	inch, inches
lb	pounds
S&M	Surveillance and Maintenance
SCDHEC	South Carolina Department of Health and Environmental Control
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site
yd^3	cubic yard(s)

TABLE OF CONTENTS

1.0 SUMMARY

Building 454-D, D-Area Diesel Fuel Tank, was erected on site circa 1990 in the southeast section of 400-D Area of the Savannah River Site (SRS). The fuel oil tank was a 15,000-gallon (gal), carbon steel tank mounted inside a containment dike. There was a mezzanine above the fuel oil tank. Ancillary to 454-D was Building 454-1D, Diesel Fuel Unloading Facility, and the cable trays and conduit/piping supports up to the tie-in at the southwest corner of the 484-D Powerhouse. Ancillary structure 454-1D provided a concrete pad for truck off-loading of diesel fuel oil to supply the storage tank for transfer of fuel to the 484-D Powerhouse. It was erected circa 1990 immediately south of 454-D. Buildings 454-D and 454-1D were only used for their designed purpose. The end-state condition after decommissioning of 454-D and its ancillaries was removal of the tank, dismantlement and removal (D&R) of the mezzanine structure down to, but not including the concrete slab, and removal of all appurtenances, leaving only the concrete slabs, concrete tank bases, concrete pump bases, and surrounding concrete dikes/curbs. The 454-D diesel fuel tank and mezzanine structure were removed by the Community Reuse Organization (CRO) to be reused/sold. The remaining decommissioning activities for Building 454-D and its ancillaries were completed by CTI and Associates, Inc (Savannah River Nuclear Solutions, LLC's [SRNS] mentor protégé subcontractor). All appurtenances and the cable trays and conduit/piping supports were D&R to grade or concrete slab, as applicable. The concrete slabs were verified to be free of equipment, structure, rubble, waste, and debris. All interfacing utilities were isolated, disconnected, and plugged. Resulting holes were plugged and grouted. The 454-D and 454-1D sumps were filled with gravel. The 454-D containment dike walls were breached in the northwest corner to prevent rainwater accumulation. Any surrounding soil that was disturbed during decommissioning was raked and cleared of debris.

A review of the existing characterization data, process/building history, sample data and walk downs of the facility prior to demolition supported the determination that Building 454-D and its ancillary structures met the criteria of a Clean Building, Simple Model as described in Facility Disposition Manual 1C, Procedure 501. This decision was supported by the documentation found in the Facility Decommissioning Evaluation (FDE) (Reference 8.01). No chemical, hazardous, or radioactive materials were associated with this structure. CRO was responsible for the D&R of the diesel fuel tank and mezzanine structure. CTI and Associates, Inc was responsible for the D&R of remaining appurtenances and the cable trays and conduit/piping supports. Since there was no evidence of contamination on the slabs before decommissioning, no final verification survey was required. Final Acceptance Inspection (FAI)-51 (Reference 8.02) was performed on 6/15/2022 and no additional work or cleanup was required.

2.0 PURPOSE AND SCOPE

The purpose of this report is to document what was done to the facility as a part of the decommissioning project, and the condition the facility was left in at the completion of the project. The requirement for this report is found in the Facility Disposition Manual 1C, Procedure 506, "Preparing a Decommissioning Project Final Report". Interactions with regulatory agencies, South Carolina Department of Health and Environmental

Control (SCDHEC) and U.S. Environmental Protection Agency (EPA), for concurrence on this report are governed by "Core Team Protocol for Review and Concurrence on Facility Decommissioning Evaluations and Decommissioning Project Final Reports" (Reference 8.03).

2.01 Facility Description

Building 454-D was erected circa 1990. The fuel oil tank was a 15,000-gal, carbon steel tank. The tank was mounted on two cradle mounts inside a containment dike. The containment dike was cast-in-place concrete. The inner dimensions of the containment dike were approximately (~) 20 feet (ft)-6 inches (in.) by 43 ft-4 in. The walls of the containment dike were ~12 in. thick while the slab was ~8 in. thick. The sump walls and floor were 12 in. thick all around. The fuel oil tank was mounted on separate foundation supports above the slab of the containment structure. The foundation supports extended below the slab of the containment. The bottom of the containment dike slopes to the northwest corner with an approximate slope of 1/8 in. per ft. The sump in the northwest corner of the containment dike was ~3 ft wide on each side and 3 ft deep. The sump pump was off-center to the northwest in the sump. Within the confines of the containment dike were three transfer pumps (removed during deactivation in 2014) for the fuel oil, three discharge filters and associated piping, fittings, and conduit (Reference 8.04). Controls and indications were outside the containment dike. There was a mezzanine above the fuel oil tank for access to the flanges at the top of the tank. The tank also had a 24-in. manhole at the south end of the mezzanine. Access to the mezzanine, as well as the confinement area itself, was via steps and stairs in appropriate locations. There were two sets of steps over the containment dike to allow access within the containment area. The whole of the structure had a pole supported roof that provided some protection from the elements. Lighting was installed in the roof of the structure. The major materials of construction for the mezzanine and roof, as well as supports for each, were galvanized and painted carbon steel.

The 454-1D Diesel Fuel Unloading Facility was also erected circa 1990. The concrete pad for the unloading station was ~63 ft long by 13 ft wide. Included in the width were 6 in. wide curbs that ran the length of the pad on either side. The curbs were 6 in. high at the ends of the pad and maintained a constant elevation the length of the pad. The unloading facility equipment was ~26 ft-6 in. south of the north end of the pad, on the west side. This included the tanker connection, a spill box for catching small amounts of fuel oil spilled during connecting and disconnecting the tank truck, and a sump for catching spills of fuel oil from the pad. The entire pad at the unloading station slopes to the location of the sump. The opening in the curb that passes to the sump was 6 in. below the elevation at the north and south ends of the unloading station slab as well as the east side. The unloading facility sump was 4 ft on each of the sides and 4 ft deep. The sump pump was centered in the sump. Other than reinforced concrete, the major materials of construction were painted and galvanized steel. Controls and indications were located at the station. Power to the facility was disconnected during deactivation (Reference 8.04).

Ancillary to 454-D were the cable trays and conduit/piping supports. This included all supports up to the tie-in at the southwest corner of the 484-D Powerhouse.

Asbestos inspection surveys of the buildings were conducted on August 25, 2020, and January 26, 2022 (References 8.05 and 8.06, respectively) with the results being there was no Asbestos Containing Material or Presumed Asbestos Containing Material found in the buildings or their components. See Appendix A, Figures A-1 through A-5 for photos of the facilities/structures before and after decommissioning.

2.02 New Facility Information

SRS identified no new facility information during or resulting from the facility decommissioning.

3.0 DECOMMISSIONING MODEL APPROVAL

The facility was decommissioned using the Simple Model as described in Facility Disposition Manual 1C. The selection of the model was based on an FDE (Reference 8.01). Numerous walkdowns were performed by U.S. Department of Energy representatives and all involved SRNS EC&ACP groups (i.e., Engineering, Project Management, Safety, Industrial Hygiene, Environmental Compliance Authority, etc.). A facility walkdown, including an overview, was not pre-scheduled with the SCDHEC and EPA. However, the FDE submittal letter stated that SCDHEC and EPA could contact the U.S. Department of Energy if the regulatory agencies were interested in an overview and field visit. A walkdown of the facility with SCDHEC and EPA did not occur due to COVID-19 travel restrictions. The FDE received SCDHEC concurrence on April 5, 2020, and EPA concurrence on May 18, 2020 (References 8.07 and 8.08, respectively).

4.0 DECOMMISSIONING ACTIVITIES COMPLETED

Building 454-D was partially decommissioned by CRO in accordance with their agreement with the Department of Energy Savannah River Site Operations Office (DOE-SR). The 454-D mezzanine structure and diesel fuel tank were D&R down to the concrete slab by CRO. The remaining decommissioning activities for Building 454-D and its ancillaries were completed by CTI and Associates, Inc. All appurtenances and the cable trays and conduit/piping supports were D&R to grade or concrete slab, as applicable. The concrete slabs were verified to be free of equipment, structure, rubble, waste, and debris. The 454-D and 454-1D sumps were filled to the top of sump elevation with gravel. All interfacing utilities were isolated, disconnected, and plugged. Resulting holes were plugged and grouted. Any surrounding soil that was disturbed during decommissioning was raked and cleared of debris. The decommissioning was confirmed complete in the FAI-51 walkdown performed on 6/15/2022 (Reference 8.02).

5.0 WASTE MANAGEMENT

5.01 Salvage and Reuse

The 454-D mezzanine structure and diesel fuel tank were removed intact by CRO for reuse or resale. Thirty (30) cubic yards of scrap metal from the 454-D and 454-1D

decommissioning by CTI and Associates, Inc. were transferred to 741-N, Salvage and Reclamation Building, for recycling.

5.02 Waste Disposal

One-thousand five hundred (1500) pounds (lb) of clean structural rubble were transferred to the C&D Landfill and ~ fifteen (15) cubic yards of the building's structure materials/components, including the diesel fuel tank, were recycled by CRO. See Table 1 for a list of all wastes generated during decommissioning.

Table 1: Waste Generation

Waste Classification	Waste Source	Disposed to	Total Volume/Weight
LLW	N/A	N/A	N/A
ACM	N/A	N/A	N/A
PCB	N/A	N/A	N/A
CSR	Miscellaneous sanitary waste/debris, rigid conduit	C&D Landfill by CRO	~1500 lb
CSR	Structural steel, siding, tank	Recycled by CRO	~15 yd^3
Recycle Metals	Structural steel, steel plates, cable trays	741-1N Salvage Yard	30 yd^3

LLW – Low level radioactive waste
N/A – Not applicable
ACM – Asbestos-containing material
PCB – Polychlorinated biphenyl
CSR – Clean Structural Rubble

6.0 FINAL FACILITY CONDITION

6.01 Final Facility Condition and Remaining Hazards

The 454-D mezzanine structure and diesel fuel tank were D&R down to the concrete slab by CRO. The remaining decommissioning activities for Building 454-D and its ancillaries were completed by CTI and Associates, Inc. All appurtenances and the cable trays and conduit/piping supports were D&R to grade or concrete slab, as applicable. The concrete slabs were verified to be free of equipment, structure, rubble, waste, and debris. The 454-D and 454-1D sumps were filled to the top of sump elevation with gravel. All interfacing utilities were isolated, disconnected, and plugged. Resulting holes were plugged and grouted.

6.02 Risk Assessment Summary

A review of the existing characterization data, process/building history, sample data and walk downs of the facilities prior to decommissioning supported the determination that Building 454-D and its ancillary structures met the criteria of a Clean Building, Simple Model as described in Manual 1C, Procedure 501.

This decision was supported by the documentation found in the FDE, Reference 8.01. No chemical, hazardous, or radioactive materials were associated with these structures other than commonly used materials of construction, which were managed as waste during deactivation in accordance with established SRS practices. The amounts of such materials were described in Section 5.02 of this report. Since there was no evidence of contamination on the slabs either before or after structure demolition, no final verification survey was required.

6.03 Post Decommissioning Requirements

The remaining structures (concrete slabs, concrete tank bases, concrete pump bases, and surrounding concrete dikes/curbs) are free of physical, chemical, and radiological hazards; therefore, they need no further decommissioning action. No surveillance and maintenance (S&M) activities were identified for the remaining structures because they pose no threat to human health or the environment while awaiting area completion.

7.0 CONCLUSIONS/RECOMMENDATIONS

Building 454-D and its ancillaries were demolished and the remaining concrete slabs, concrete tank bases, concrete pump bases, and surrounding concrete dikes/curbs have been left in place. All decommissioning activities have been completed in accordance with federal and state regulations, and CRO's agreement with the DOE-SR. The remaining structures are free of physical, chemical, and radiological hazards; therefore, they need no further decommissioning action. No S&M activities were identified for the remaining structures because they pose no threat to human health or the environment while awaiting area completion.

In accordance with the "Memorandum of Agreement for Achieving an Accelerated Cleanup Vision at the Savannah River Site", this report will be maintained as a record for reference and use in the D-Area Operable Unit Completion Record of Decision. To ensure facility remnants are addressed during the completion process, Buildings 454-D and 454-1D will be added to Appendix K.2 of the Federal Facility Agreement for the SRS. However, no further evaluation during the Area Completion process will be necessary.

8.0 REFERENCES

8.01 G-FDE-D-00041, Revision 0, dated November 13, 2019, "Facility Decommissioning Evaluation Building 454-D, D-Area Diesel Fuel Tank"

8.02 G-SDD-D-00018, dated June 15, 2022, "FAI-51, "Final Acceptance Inspection of Buildings 683-D, 484-13D, 454-D, and 454-1D"

8.03 SRNS-RP-2021-00120, Revision 0, dated February 2021, "Core Team Protocol for Review and Concurrence on Facility Decommissioning Evaluations and Decommissioning Project Final Reports"

8.04 V-PCOR-D-00042, Revision 0, dated July 1, 2014, "Deactivation Project Final Report 484-D Powerhouse and Ancillary Buildings"

8.05 Q-APG-D-00021, Revision 1, dated August 25, 2020, "Baseline Asbestos Inspection Report of Above Ground Storage Tank Building 454-D and Fuel Unloading Station Building 454-1D"

8.06 Q-APG-D-00021, Revision 2, dated January 26, 2022, "Baseline Asbestos Inspection Report of Above Ground Storage Tank Building 454-D and Fuel Unloading Station Building 454-1D"

8.07 SRNS-OS-2020-00159, dated April 5, 2020, SCDHEC approval of the FDE use of the Simple Model for 454-D

8.08 SRNS-OS-2020-00216, dated May 18, 2020, USEPA approval of the FDE use of the Simple Model for 454-D

9.0 APPENDICES

Appendix A – Before and After Photos of the Facility/Structure

Appendix A – Before and After Photos of the Facility/Structure

Figure A-1. Building 454-D (Looking East) Before

Appendix A – Before and After Photos of the Facility/Structure (Continued)

Figure A-2. Building 454-D (Looking East) After Partial Decommissioning by CRO

Appendix A – Before and After Photos of the Facility/Structure (Continued)

Figure A-3. Building 454-D (Looking East) After Final Decommissioning

Appendix A – Before and After Photos of the Facility/Structure (Continued)

Figure A-4. Building 454-1D (Looking South) Before

Appendix A – Before and After Photos of the Facility/Structure (Continued/End)

Figure A-5. Building 454-1D (Looking South) After