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Decommissioning Project Final Report
Building 683-D, Chlorine Unloading and Storage

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History of Revisions

Revision	Date	Revised Section	Change
0	8/11/2022	N/A	Initial Issue

Abbreviations and Acronyms List

~	approximately
ACM	Asbestos Containing Material
COVID	Coronavirus Disease
CRO	Community Reuse Organization
D&R	dismantlement and removal, dismantled and removed
DOE	U.S. Department of Energy
DOE-SR	DOE 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
$ft.^2$	square feet
PACM	Presumed ACM
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 yards

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1.0 SUMMARY

Building 683-D, Chlorine Unloading and Storage was a steel and masonry building constructed on a concrete slab foundation located on the west side of 400-D Area on the Savannah River Site (SRS) in South Carolina. The original facility was comprised of the masonry building and the concrete storage pad and was constructed in 1952. The metal building was constructed circa 1986 as an addition. The building was used for storage of chemicals, construction materials, and for minor maintenance activities. The following structures were ancillary to 683-D and used for miscellaneous storage in support of Building 683-D:

- Three sea-land containers: SRS-PB-01214, SRS-PB-01212, and SRS-PB-01216
- Handi-House: SRS-PB-EX0046
- Metal tracks

The end-state condition after decommissioning of 683-D was demolition down to, but not including the concrete slab and surrounding concrete curbs. The end state after decommissioning of the three sea-land containers and the Handi-House was dismantlement and removal (D&R) down to, but not including the concrete slab, or to grade, as applicable. The end state after decommissioning of the metal tracks was D&R down to, but not including the concrete pedestals. The 683-D steel building was removed by the Community Reuse Organization (CRO) to be reused/sold. The remaining decommissioning activities were completed by CTI and Associates, Inc., which is Savannah River Nuclear Solutions, LLC's (SRNS) mentor protégé subcontractor. 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.

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 683-D met the criteria of a Clean Building, Simple Model as described in Facility Disposition Manual 1C, Procedure 501. This decision was supported by the information reported in the Facility Decommissioning Evaluation (FDE) (Reference 8.01). No hazardous, chemical, or radioactive materials were associated with this structure. CRO was responsible for the D&R of the metal building. CTI and Associates, Inc. was responsible for the D&R of the remaining masonry building, ancillary structures, and appurtenances. There was evidence of a small spill, likely oil, that was contained within the facility on the concrete slab reported in the FDE. The spill was cleaned with a surfactant during decommissioning. No final verification survey was required. The Final Acceptance Inspection (FAI) (Reference 8.09) was performed on 06/15/2022 and no additional 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 Project Final Reports" (Reference 8.11).

2.01 Facility Description

Building 683-D was located on the west side of 400-D Area on the SRS in South Carolina. Building 683-D was a steel and masonry constructed building on a concrete slab foundation. The original facility comprised the gaseous chlorination room and a storage pad to the west and was constructed in 1952. The building occupied approximately (~) 4400 square feet (ft^2) as constructed via addition circa 1986. The building was ~110 feet (ft) by 40 ft and the roof of the building was 21 ft high on the sides and about 28 ft high at the apex. The sides of the building were made of expanded metal mesh to allow for appropriate ventilation of the structure. The remainder of the outer shell of the structure consisted of sheet metal, concrete block, and mortar. In the southeast corner of the structure was the chlorination room. The walls of the chlorination room were concrete block and mortar. The chlorination room was ~13 ft by 36 ft, 10 ft tall, and was located inside the larger 4400 ft^2 structure. There was an overhead bridge crane in the central storage room and a smaller bridge crane in the chlorination room. The overall building was free of hazardous materials/components including exit signs, fluorescent tubes, polychlorinated biphenyl ballasts, batteries, etc. The electricity and water to the building were disconnected in 2014 (Reference 8.10). A small portion of the building housed the sodium hypochlorite injection system. The sodium hypochlorite injection system used metering pumps to inject required amounts of sodium hypochlorite into the Flash Mixer of 483-1D and into the basin of the 485-D cooling tower. The building was also used for storage of chemicals and construction materials and for minor maintenance activities. All gaseous-chlorination equipment, including storage racks, had been removed from the interior of the building.

Ancillary to 683-D were three sea-land containers (SRS-PB-01214, SRS-PB-01212, and SRS-PB-01216), a Handi-House (SRS-PB-EX0046), and metal tracks located northwest of the 683-D concrete slab.

Asbestos inspection surveys of Building 683-D and its ancillary structures were conducted on 11/6/2019, 1/19/2020, and 8/25/2020. The results of those surveys are as follows:

- 683-D: No Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) was found in the building or its components (Reference 8.04)
- SRS-PB-01212: Non-friable ACM was found in the building (Reference 8.05)
- SRS-PB-01214: No ACM or PACM was found in the building or its components (Reference 8.06)
- SRS-PB-01216: No ACM or PACM was found in the building or its components (Reference 8.08)

- SRS-PB-EX0046: No ACM or PACM was found in the building or its components (Reference 8.07)

See Appendix A, Figures A-1 through A-7 for photos of the facilities/structures before and after the 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 information reported in the FDE (Reference 8.01). Numerous walkdowns were performed by U.S. Department of Energy (DOE) representatives and all involved SRNS Environmental Compliance & Area Completion Projects (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 DOE 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 8.02 and 8.03, respectively).

4.0 DECOMMISSIONING ACTIVITIES COMPLETED

Building 683-D was partially decommissioned by CRO in accordance with their agreement with the DOE Savannah River Site Operations (DOE-SR). The 683-D steel building was D&R by CRO. The remaining decommissioning activities were completed by CTI and Associates, Inc. All appurtenances and ancillaries were D&R to grade, concrete slab, or concrete pedestals, as applicable. The concrete slab and concrete pedestals 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. Any surrounding soil that was disturbed during decommissioning was raked and cleared of debris. The decommissioning was confirmed complete in the FAI walkdown performed on 06/15/2022 (Ref. 8.09).

5.0 WASTE MANAGEMENT

5.01 Salvage and Reuse

The 683-D steel building was removed intact by CRO for reuse or resale.

5.02 Waste Disposal

Thirty (30) cubic yards of clean structural rubble were transferred to the SRS C&D landfill by CRO. Three hundred sixty (360) cubic yards of clean structural rubble from the 683-D decommissioning by CTI and Associates, Inc. were transferred to Three Rivers

Landfill. Fifteen (15) cubic yards of non-friable ACM were transferred to Three Rivers Landfill. See Table 1 for a list of all wastes generated during decommissioning.

Table 1: Waste Generation

Waste Classification	Waste Source	Disposed to	Total Volume
LLW	N/A	N/A	N/A
ACM	Non-Friable Asbestos	Three Rivers Landfill	15 yd^3
PCB	N/A	N/A	N/A
CSR	Miscellaneous sanitary waste/debris	Three Rivers Landfill	360 yd^3
CSR	Miscellaneous sanitary waste/debris	SRS C&D Landfill by CRO	30 yd^3
Recycle Metals	N/A	N/A	N/A

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 683-D steel building was D&R down to the concrete slab by CRO. The remaining decommissioning activities were completed by CTI and Associates, Inc. The masonry chlorination room located on the southeast corner of the slab was demolished down to the slab. All appurtenances, the ancillary sea-lands, Handi-House, and metal tracks were D&R to grade, concrete slab, or concrete pedestals, as applicable. The concrete slab and pedestals 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. Building 683-D and its ancillaries were D&R and the remaining concrete slab and concrete pedestals have been left in place and remain left in place.

6.02 Risk Assessment Summary

A review of the existing characterization data, process/building history, sample data and walk downs of the facility prior to decommissioning supported the determination that Building 683-D and its ancillaries met the criteria of a Clean Building, Simple Model as described in Manual 1C, Procedure 501.

This decision was supported by the information reported 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. There was evidence of a small spill, likely oil, that was contained within the facility on the concrete slab reported in the FDE. The spill was cleaned with a surfactant during decommissioning. No final verification survey was required.

6.03 Post Decommissioning Requirements

The remaining structures (concrete slab, concrete pedestals, and concrete 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 683-D and its ancillaries were D&R and the remaining concrete slab and concrete pedestals have been left in place and remain 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, Building 683-D and its ancillaries 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-00040, Revision 0, dated November 13, 2019, "Facility Decommissioning Evaluation Building 683-D, Chlorine Unloading and Storage"

8.02 SRNS-OS-2020-00160, dated April 5, 2020, SCDHEC approval of the FDE use of the Simple Model for 683-D

8.03 SRNS-OS-2020-00216, dated May 18, 2020, USEPA approval of the FDE use of the Simple Model for 683-D

8.04 Q-APG-D-00015, Revision 1, dated August 25, 2020, "Baseline Asbestos Inspection Report of Building 683-D"

8.05 Q-APG-D-00048, Revision 1, dated March 7, 2022, "Baseline Asbestos Inspection Report of SRS-PB-01212"

8.06 Q-APG-D-00049, Revision 1, dated March 7, 2022, "Baseline Asbestos Inspection Report of SRS-PB-01214"

8.07 Q-APG-D-00050, Revision 1, dated March 7, 2022, "Baseline Asbestos Inspection Report of SRS-PB-EX0046"

8.08 Q-APG-D-00051, Revision 1, dated March 10, 2022, "Baseline Asbestos Inspection Report of SRS-PB-01216"

8.09 G-SDD-D-00018, dated June 15, 2022, "FAI-51, "Final Acceptance Inspection of Building 683-D"

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

8.11 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"

9.0 APPENDICES

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

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

Figure A-1. Building 683-D (Looking East) Before

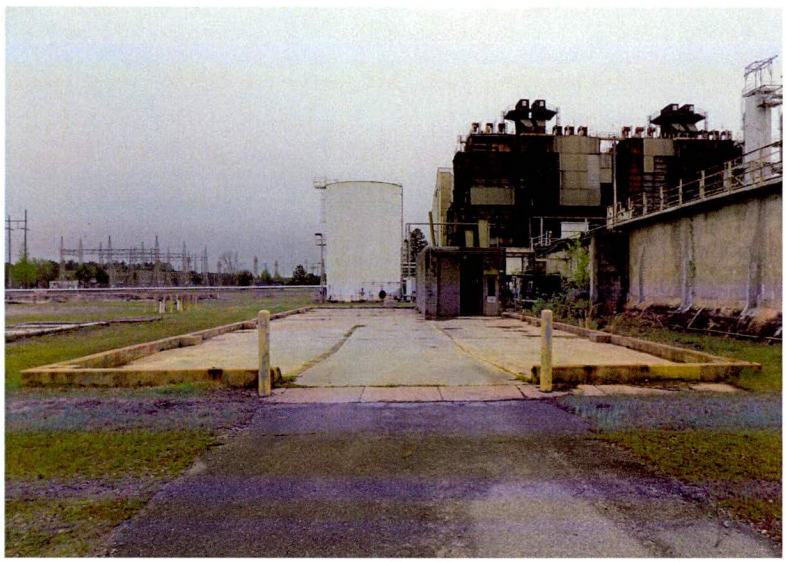

Figure A-2. Building 683-D (Looking East) After Partial Decommissioning by CRO

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

Figure A-3. Building 683-D (Looking East) After Final Decommissioning

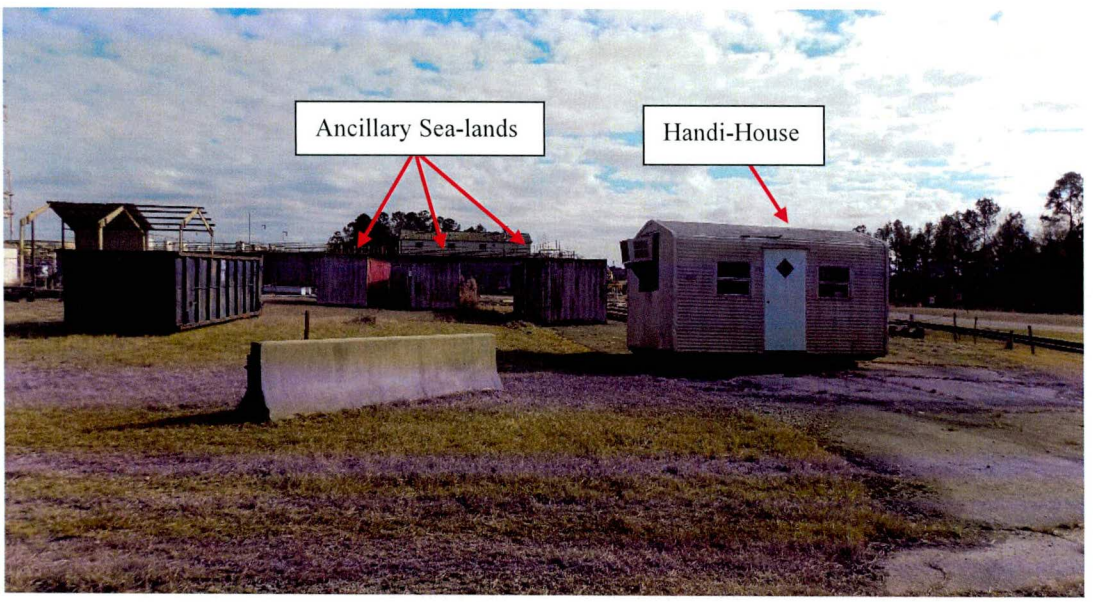

Figure A-4. Ancillary Sea-lands and Handi-House (Looking South) Before

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

Figure A-5. Ancillary Sea-lands and Handi-House (Looking South) After

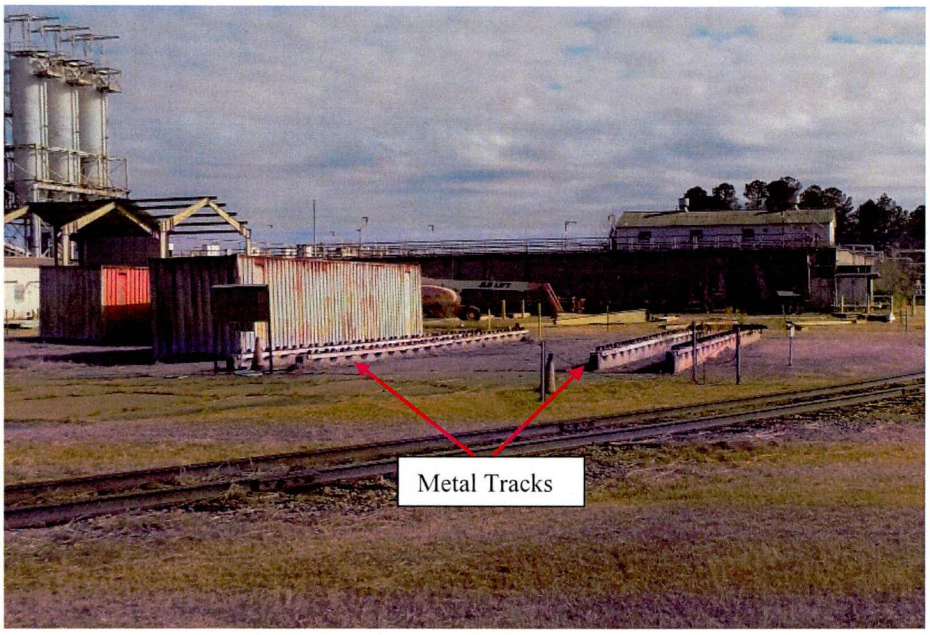

Figure A-6. Ancillary Metal Tracks (Looking Southeast) Before

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

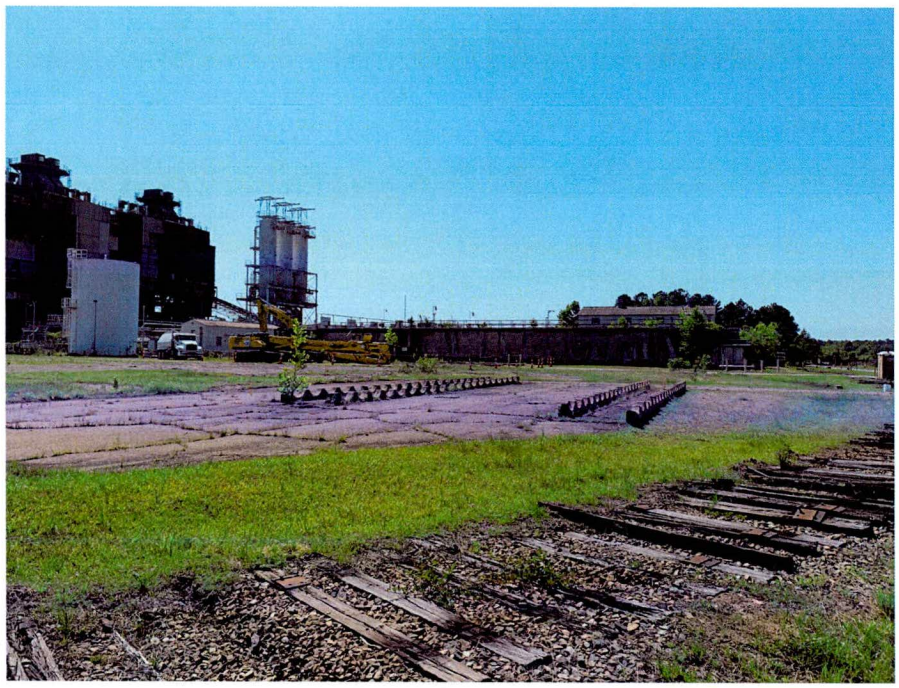

Figure A-7. Ancillary Metal Tracks (Looking Southeast) After