Decommissioning Project Final Report
Building 483-3D, Electrical Control Building

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History of Revisions

Revision	Date	Revised Section	Change
0	02/22/2022	N/A	Initial Issue

LIST OF ABBREVIATIONS AND ACRONYMS

ACM	Asbestos Containing Material
CLSM	controlled low strength material
COVID	Coronavirus disease
EPA	(U.S.) Environmental Protection Agency
EC&ACP	Environmental Compliance & Area Completion Projects
FAI	Final Acceptance Inspection
FDE	Facility Decommissioning Evaluation
kV	kilovolts
S&M	Surveillance and Maintenance
SCDHEC	South Carolina Department of Health and Environmental Control
SDDR	Supplier Deviation Disposition Request
SRNS	Savannah River Nuclear Solutions
SRS	Savannah River Site
V	volts
yd	yard(s)

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1.0 SUMMARY

Building 483-3D was a single-story, 32.5' by 62.5' by 14' high steel frame structure located at the southeast corner of the boiler and process water treatment facilities' Softener Building, 483-D, in D-Area at the Savannah River Site (SRS). It was built circa 1952 and was used as a switchgear building. Ancillary to 483-3D were the Exterior North Cable Trench and the Pipe and Conduit Bridge. The Pipe and Conduit Bridge was removed from the decommissioning scope in accordance with Environmental Compliance and Area Completion Projects (EC&ACP) Engineering direction in Q-SDD-D-00022 and Supplier Deviation Disposition Request (SDDR) No. 002. Only the piping and conduits associated with Building 483-3D were removed. The pipe/conduit bridge and its supports were not removed. The end-state condition after decommissioning of 483-3D was demolition of the 483-3D switchgear building down to, but not including its concrete floor slab and surrounding concrete support walls for the 483-3D steel frame structure. The end state for the Exterior North Cable Trench was In-Situ Disposal. The structure was essentially concrete and predominantly below grade. Demolition was therefore impractical, and consequently, a portion of the structure remains intact after decommissioning. The remaining below-grade structure was filled to grade with controlled low strength material (CLSM). All interfacing utilities were isolated, disconnected, and plugged. Slab protrusions were cut flush with the slab and floor openings filled to achieve a uniform surface. Surrounding soil disturbed during decommissioning was re-graded and seeded. The end state for the AT1W Transformer Pad and Containment Dike east of the 483-3D building was demolition of the concrete barrier wall along the west side of the dike area down to the top of dike elevation, filling the sump inside the dike area to the top of sump elevation with CLSM, and placement of additional gravel fill in the dike area to the top of dike walls.

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 483-3D met the criteria of a Clean Building, Simple Model as described in the Facility Disposition Manual 1C, Procedure 501. This decision was supported by the documentation found in the Facility Decommissioning Evaluation (FDE), G-FDE-D-00049, Rev. 1, dated 9/29/2020 (Reference 8.01). No chemical, hazardous, or radioactive materials were associated with this structure other than commonly used materials of construction, which were managed as waste during demolition in accordance with established SRS practices. Since there was no evidence of contamination on the slab before structure demolition, no final verification survey was required. FAI-51 Final Acceptance Inspection (Reference 8.07) was performed on 12/07/2021 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 SRNS-RP-2021-00120, "Core Team Protocol for Review and Concurrence on Facility Decommissioning Evaluations and Decommissioning Project Final Reports" (Reference 8.08).

2.01 Facility Description

Building 483-3D, Electrical Control Building, was at the southeast corner of the boiler and process water treatment facilities' Softener Building, 483-D, in D-Area at the SRS. Construction of the building was completed, and operations began circa 1952. The building was steel frame construction sitting on concrete support walls with a concrete floor slab. The siding and roof were corrugated asbestos. The dimensions of the structure were 32.5' by 62.5' by 14' high. There was an 8.5' wide roll-up door on the south wall of the structure and a standard swinging door on the north wall of the structure. The building had electrical power supplied at 13.8 kilovolts (kV), which had been deenergized and isolated.

Within the building there were three switchgear banks, all removed prior to decommissioning. Two switchgear banks were 2.4 kV and the other was 480 volts (V). The 2.4 kV switchgear banks were aligned east to west, opposite each other on the north and south sides of the structure. The 480V switchgear bank was aligned north-south on the east side of the structure. On each end of the 480V switchgear bank was an integral 2.4 kV to 480V transformer. The northeast (AT1W) transformer pad had an empty cable tray that went overhead to the west and entered Building 483-3D. The scope of this decommissioning ended at the end of the north cable trench concrete slab. This was also the boundary for the conduit bridge that was mounted above the cable trench before it was removed from the decommissioning scope in accordance with EC&ACP Engineering direction given in Q-SDD-D-00022 and SDDR No. 002. The conduit bridge was removed from the scope since it comprises only a small part of the more intricate 483-D piping and conduit system. It was determined the conduit bridge will be addressed later in the 483-D Water Treatment Facility decommissioning works where any sampling, cutting, or asbestos abatement of the lines can be completed at one time, increasing worker safety by decreasing chances of exposure.

Inside the 483-3D building were two floor drains and a cleanout. All were in line with the center of the building slab running east-west. The drains went to the area process sewer. The building's concrete slab has cracks through the center of it. A crack in the slab passes within approximately 18" of the cleanout and another crack passes through the locations of both floor drains. However, the concrete cracks do not affect the structural integrity of the floor drain piping.

On the east side of the structure was one transformer, AT2W (southeast), which was removed by Site Rigging as a maintenance action outside the scope of the decommissioning project presented in the FDE, G-FDE-D-00049 (Reference 8.01). On the west side of AT1W transformer pad and containment dike was a 12" thick, 16' wide, 6' high concrete wall. The former location of transformer AT1W had a 16' by 20'

gravel-filled containment with an 18" x 18" x 12" deep sump in the northwest corner, while transformer AT2W is mounted on a concrete pad in an 8' by 10' gravel-filled containment. Each transformer was designed to step down 13.8 kV to 2.4 kV. Both AT1W and AT2W were non-polychlorinated biphenyl containing transformers.

To the north of Building 483-3D was a cable trench. The cable trench contained many of the electrical cables leaving Building 483-3D to area loads. The cable trench was approximately 75' long by 6'11" wide and approximately 8' deep. There were six (6) vertically stacked cable trays running along the south wall of the trench. The cable trench was concrete and had three (3) hinged access plates. Mounted on and above the cable tray is a pipe and conduit bridge of steel construction.

To the west of the building was the transformer W4. Transformer W4 was a 2.4kV to 480V step-down transformer which sat on a 4' x 4'4" concrete pad. An old spill control motor control center was located west of the structure, which provided power to the spill control pump pit for the 484-D Powerhouse. The spill control pump pit was not applicable to this scope.

Various other electrical distribution equipment was interior to the structure, including lighting transformers, lighting and power panels, disconnects, junction boxes and conduit. Further, there was conduit exterior to the structure going to the transformers and conduit runs and bridges to the facility.

Asbestos surveys of the building were conducted on November 12, 2019 and May 26, 2021, with the results indicating the presence of Asbestos Containing Material (ACM) and Presumed Asbestos Containing Material. The results of the surveys are included in Q-APG-D-00020, Rev. 0 and Rev. 1 (References 8.02 and 8.03 respectively). See Appendix A, Figure 1 for a photo of the building prior to decommissioning and Figures 2 and 3 for photos of the area 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 Savannah River Nuclear Solutions (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 November 6, 2020, and U.S. EPA concurrence on February 26, 2021 (References 8.04 and 8.05 respectively).

4.0 DECOMMISSIONING ACTIVITIES COMPLETED

Execution of the Building 483-3D decommissioning was planned and described in the FDE (Reference 8.01) and the Decommissioning End Points Document (Reference 8.06). Building 483-3D was decommissioned by CTI and Associates, Inc (SRNS's mentor protégé subcontractor). The 483-3D structure was demolished to its concrete floor slab and surrounding low concrete support walls. Only the piping and conduits associated with Building 483-3D were removed from the Pipe and Conduit Bridge. The below-grade structure of the Exterior North Cable Trench was filled to grade with CLSM. The concrete barrier wall along the west side of the AT1W Transformer Pad and Containment Dike was demolished down to the top of dike elevation, the sump inside the dike area was filled to the top of sump elevation with CLSM, and additional gravel fill was placed in the dike area to the top of dike walls. All interfacing utilities were isolated, disconnected, and plugged. Slab protrusions were cut flush with the slab and floor openings filled to achieve a uniform surface. It was confirmed complete in the FAI-51 Final Acceptance Inspection walkdown performed on 12/07/2021 (Reference 8.07).

5.0 WASTE MANAGEMENT

5.01 Salvage and Reuse

Sixty (60) cubic yards of scrap metal from Building 483-3D decommissioning were transferred to 741-N, Salvage and Reclamation Building, for recycling.

5.02 Waste Disposal

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	60 yd^3
ACM	Friable Asbestos	Three Rivers Landfill	30 yd^3
PCB	N/A	N/A	N/A
CSR	Miscellaneous sanitary waste/debris	Three Rivers Landfill	180 yd^3
Recycle Metals	Doors, beams, lead fasteners	741-1N Salvage Yard	60 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

483-3D was demolished down to the concrete slab and low concrete support walls. Only the piping and conduits associated with Building 483-3D were removed from the Pipe and Conduit Bridge. The below-grade structure of the Exterior North Cable Trench was filled to grade with CLSM. The concrete barrier wall along the west side of the AT1W Transformer Pad and Containment Dike was demolished down to the top of dike elevation, the sump inside the dike area was filled to the top of sump elevation with CLSM, and additional gravel fill was placed in the dike area to the top of dike walls. Slab protrusions were cut flush with the slab and floor openings filled to achieve a uniform surface.

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 483-3D 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 this structure other than commonly used materials of construction, which were managed as waste during deactivation in accordance with established SRS practices. Since there was no evidence of contamination on the slab either before or after structure demolition, no final verification survey was required.

6.03 Post Decommissioning Requirements

The remaining structure is free of physical, chemical, and radiological hazards; therefore, it needs no further decommissioning action. No surveillance and maintenance (S&M) activities were identified for the remaining structure (concrete slabs and low concrete support walls) because it poses no threat to human health or the environment while awaiting area completion.

7.0 CONCLUSIONS/RECOMMENDATIONS

Building 483-3D was demolished and the concrete slab and low concrete support walls have been left in place. All decommissioning activities have been completed in accordance with federal and state regulations. The remaining structure is free of physical, chemical, and radiological hazards; therefore, it needs no further action or evaluation. No S&M activities were identified for the remaining structure because it poses 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 483-3D will be added to Appendix K.2 of the Federal Facility Agreement for the SRS.

8.0 REFERENCES

8.01 G-FDE-D-00049, Revision 1, dated September 29, 2020, "Facility Decommissioning Evaluation Building 483-3D, Electrical Control Building"

8.02 Q-APG-D-00020, Revision 0, dated November 25, 2019, "Baseline Asbestos Inspection Report of Electrical Control Building 483-3D"

8.03 Q-APG-D-00020, Revision 1, dated June 24, 2021, "Baseline Asbestos Inspection Report of Electrical Control Building 483-3D"

8.04 SRNS-OS-2020-00414, dated November 6, 2020, SCDHEC Concurrence on the FDE for 483-3D

8.05 SRNS-OS-2021-00050, dated February 26, 2021, USEPA approval of the FDE for 483-3D

8.06 V-PMP-D-00026, Rev. 1, dated November 02, 2020, "Decommissioning End Points Document Building 483-3D, Electrical Control Building"

8.07 G-SDD-D-00012, dated December 8, 2021, "FAI-51, Final Acceptance Inspection of Building 483-3D"

8.08 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 - Photographs

Appendix A - Photographs

Figure 1: Building 483-3D (Looking Northwest) Before Decommissioning

Appendix A – Photographs (Continued)

Figure 2: Building 483-3D (Looking Northwest) After Decommissioning

Appendix A – Photographs (Continued/End)

Figure 3: Exterior North Cable Trench (Looking Northwest) After Decommissioning