

Decommissioning Project Final Report Building 484-9D, D-Area Valve House

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History of Revisions

Revision	Date	Revised Section	Change
0	11/11/2021	N/A	Initial Issue

LIST OF ABBREVIATIONS AND ACRONYMS

ACM	Asbestos Containing Material
EPA	(U.S.) Environmental Protection Agency
EC&ACP	Environmental Compliance & Area Completion Projects
FAI	Final Acceptance Inspection
FDE	Facility Decommissioning Evaluation
ft	feet
PACM	Presumed Asbestos Containing Material
S&M	Surveillance and Maintenance
SCDHEC	South Carolina Department of Health and Environmental Control
SOW	Statement of Work
SRNS	Savannah River Nuclear Solutions
SRS	Savannah River Site
yd	yards

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1.0 SUMMARY

Building 484-9D was an approximately 392 ft² (42' by 9'-4" and 12' high) masonry block building located in the southeast portion of 400-D Area of the Savannah River Site (SRS). It was constructed circa 1988 and was used as a fire water valve house. Ancillary to 484-9D were the pipe and associated pipe supports/bridge from the west wall of 484-9D to the 484-22D Coal Handling Crusher House, and fire hydrant, fire hose box supports, and bollards east of Building 484-9D. The ultimate end-state condition after decommissioning of 484-9D was demolition and removal of the above grade structure down to, but not including the concrete slab. The ultimate end-state condition after decommissioning for the pipe bridge was demolition and removal to the bridge foundations. The ultimate end-state condition after decommissioning for the fire hydrant was removal to grade; for the fire hose box, removal of support posts to grade; and for bollards, removal to grade. All slab/foundation protrusions (i.e., anchor bolts, rebar, etc.) were cut off flush with the top of slab. All concrete slab penetrations greater than 2" in diameter were cut off flush with the slab and grouted.

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 484-9D 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-00055, 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 8.06) was performed on 10/18/2021 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".

2.01 Facility Description

Building 484-9D, D-Area Valve House, was located on the SRS in South Carolina in the southeast portion of 400-D Area, near the northeast corner of the D-Area coal yard. The structure was constructed circa 1988.

Building 484-9D was a masonry block building sitting on a concrete slab. The roof of the building was poured concrete. The building was approximately 392 ft² (42' by 9'-4" and 12' high). The building interior was split into two sections. The larger section, the

valve room, was 32' by 8' (interior dimensions). The smaller section, the fire alarm panel and control room, was 8' by 8' (interior dimensions).

The valve room had a catwalk running along the south wall. Along the north wall were the fire water deluge pipes and valves, pressure switches, instrument air system lines and steam lines. The fire water lines, catwalk, pipe hangers, and personnel shield for the steam piping and radiators were galvanized steel. The steam lines were carbon steel and were partially insulated. The air lines are carbon steel. The 6" fire water control valves were air actuated with electrical position indicators. There was a wall mounted space heater (electric), which had been electrically isolated, above the entrance to the valve room. Lighting in the valve room was provided by eight (8) wall-mounted incandescent lights, which had been electrically isolated.

The Alarm Panel and Control Room contained the Panalarm® fire control panels, pull stations, system annunciator panels, battery backups, switches and relays, and other fire control devices necessary for the system, all of which were isolated, but not "air-gapped" to render the facility "cold and dark." A single ceiling-mounted incandescent light, which had also been electrically isolated, provided lighting for the Alarm Panel and Control Room. There was a leak in the ceiling of the Alarm Panel and Control Room.

There was no PA system, no floor drains, no sump(s) and no domestic water to the structure. All electrical to the facility was provided to the building via a junction box on the west side of the structure. The roof of the structure drained through the gravel stop along the north wall at two scuppers with downspouts to concrete splash blocks at grade, each located 10'6" inboard of the ends of the building.

All services (i.e., fire water, steam, instrument air, and electrical) had been isolated but not "air-gapped" to render the facility "cold and dark."

The fire water deluge pipes proceeded from inside the valve room, out the west wall near its north corner westward then southward to the 484-22D Coal Handling Crusher House. The pipes and associated pipe supports/bridge, to the exterior wall of the Crusher House, were ancillary to 484-9D and within the scope of this decommissioning. The pipe supports and bridge outside the 484-9D structure were galvanized steel atop concrete foundations.

To the east of Building 484-9D was a fire hydrant, a support frame for a fire hose box, and two bollards. The hydrant was a standard fire hydrant. The hose box supports consisted of steel bars running between reinforced concrete posts. The bollards were standard 4" galvanized, concrete-filled pipe bollards extending about 42" above grade. The hydrant, support frame and bollards were ancillary to Building 484-9D and within the scope of this decommissioning. Asbestos surveys of the building were conducted on April 5, 2021 and April 19, 2021, with the results indicating no Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) (Reference 8.02).

See Appendix A, Figure 1 for a photo of the building prior to decommissioning and Figure 2 for a photo of the area after decommissioning.

2.02 New Facility Information

SRS identified no new facility information during or as a result of 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). No regulator walkdown of the facility occurred due to COVID-19 travel restrictions. The FDE received South Carolina Department of Health and Environmental Control (SCDHEC) concurrence on February 18, 2021, and U.S. Environmental Protection Agency (EPA) concurrence on February 26, 2021 (References 8.03 and 8.04 respectively).

4.0 DECOMMISSIONING ACTIVITIES COMPLETED

Execution of the Building 484-9D decommissioning was planned and described in the FDE (Reference 8.01) and the Decommissioning End Points Document (Reference 8.05). Building 484-9D was decommissioned by CTI and Associates, Inc (SRNS's mentor protégé subcontractor). The 484-9D structure was demolished to its concrete slab. All concrete slab penetrations greater than 2" were cut off flush to the slab and grouted. The pipe bridge was demolished down to the bridge foundations. The fire hydrant, fire hose box supports, and bollards east of Building 484-9D were demolished to grade. All slab/foundation protrusions (i.e., anchor bolts, rebar, etc.) were cut off flush with the top of slab. It was confirmed complete in the FAI-51 Final Acceptance Inspection walkdown performed on 10/18/2021 (Reference 8.06).

5.0 WASTE MANAGEMENT

5.01 Salvage and Reuse

Sixty (60) cubic yards of scrap metal from the Building 484-9D 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	N/A
PCB	Lamp/light ballasts, circuit boards	725-1N Solid Waste	N/A
CSR	Miscellaneous sanitary waste/debris	Three Rivers Landfill	120 yd ³
Recycle Metals	Pipe bridge, beams	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
 UW – Universal Waste

6.0 FINAL FACILITY CONDITION

6.01 Final Facility Condition and Remaining Hazards

484-9D was demolished down to the concrete slab. All concrete slab penetrations greater than 2” were cut off flush to the slab and grouted. The pipe bridge was demolished down to the bridge foundations. The fire hydrant, fire hose box supports, and bollards east of Building 484-9D were demolished to grade. All slab/foundation protrusions (i.e., anchor bolts, rebar, etc.) were cut off flush with the top of slab.

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 484-9D 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. The amounts of such materials, if any, were described in Section 5.02 of this report. 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 slab) because it poses no threat to human health or the environment while awaiting area completion.

7.0 CONCLUSIONS/RECOMMENDATIONS

Building 484-9D was demolished and the concrete slab has 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 484-9D will be added to Appendix K.2 of the Federal Facility Agreement for the SRS.

8.0 REFERENCES

- 8.01 G-FDE-D-00055, Revision 1, dated 9/29/2020, “Facility Decommissioning Evaluation Building 484-9D, D-Area Valve House”
- 8.02 Q-APG-D-00027, Revision 1, dated May 4, 2021, “Baseline Asbestos Inspection Report of Building 484-9D”
- 8.03 SRNS-OS-2021-00035, dated February 18, 2021, SCDHEC Concurrence on the FDE for 484-9D
- 8.04 SRNS-OS-2021-00050, dated February 26, 2021, USEPA Approval of the FDE for 484-9D
- 8.05 V-PMP-D-00036, Rev. 1, dated November 02, 2020, “Decommissioning End Points Document Building 484-9D, D-Area Valve House”
- 8.06 G-SDD-D-00013, dated 10/26/2021, “FAI-51, Final Acceptance Inspection of Buildings 484-5D and 484-9D”
- 8.07 V-PCOR-D-00042, Revision 0, dated 7/1/2014, “Deactivation Project Final Report 484-D Powerhouse and Ancillary Buildings”
- 8.08 V-PCOR-D-00056, Revision 0, dated 11/11/2021, “Completion of Decommissioning End Points for Building 484-9D, D-Area Valve”

9.0 APPENDICES

Appendix A - Photographs

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Figure 1: Building 484-9D (Looking East) Before Decommissioning

Appendix A - Photographs



Figure 2: Building 484-9D (Looking East) After Decommissioning