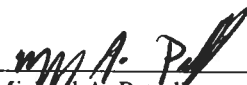
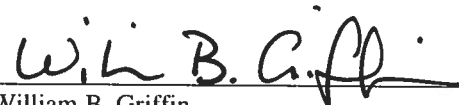
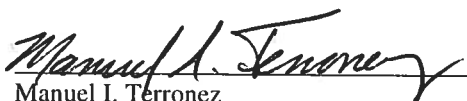



Facility Decommissioning Evaluation Building 480-3D, Maintenance Field Office and Shop


This is a Simple Model Decommissioning per Facility Disposition Manual 1C

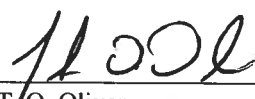
Prepared by:  Date: 4/29/2020
Michael A. Petreka
EC&ACP Engineering
Environmental Compliance and Area Completion Projects

Reviewed by:  Date: 4/29/2020
William B. Griffin
EC&ACP Engineering
Environmental Compliance and Area Completion Projects

Approved:  Date: 04/30/2020
Manuel I. Terronez
EC&ACP Engineering Manager
Environmental Compliance and Area Completion Projects

Approved: 
C.J. WARD PER TELECON Date: 4/29/2020
C.J. Ward
EC&ACP Operational Compliance Manager
Environmental Compliance and Area Completion Projects

Approved:  Date: 4/29/2020
James M. Griffith
Manager, ACP Projects
Environmental Compliance and Area Completion Projects

Approved:  Date: 4-30-2020
T/O. Oliver
EC&ACP Chief Engineer
Environmental Compliance and Area Completion Projects



DISCLAIMER

This document was prepared in conjunction with work accomplished under Contract No. DE-AC09-08SR22470 with the U.S. Department of Energy.

This work was prepared under an agreement with and funded by the U.S. Government. Neither the U.S. Government or its employees, nor any of its contractors, subcontractors or their employees, makes any express or implied: 1. warranty or assumes any legal liability for the accuracy, completeness, or for the use or results of such use of any information, product, or process disclosed; or 2. representation that such use or results or such use would not infringe privately owned rights; or 3. endorsement or recommendation of any specifically identified commercial product, process, or service. Any views and opinions of authors expressed in this work do not necessarily state or reflect those of the United States Government, or its contractors, or subcontractors.

**Printed in the United States of America
Prepared for
U. S. Department of Energy
and
Savannah River Nuclear Solutions LLC
Aiken, South Carolina**

Introduction

This document contains an evaluation of available existing information about a facility that is slated for decommissioning. This evaluation screens the project to determine whether it is appropriate to conduct the decommissioning under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or to use a simpler graded approach.

This Facility Decommissioning Evaluation (FDE) consists of three sections. Part 1 contains a description of the project scope, including a brief summary of the purpose and history of the facility and photographs of the structures that are part of the project. Part 2 encompasses a series of questions, the answers to which determine the decommissioning model (CERCLA Model, Integrated Sampling Model, or Simple Model) that will be used. The three graded approach models are described in Facility Disposition Manual 1C, Procedure 501. Part 2 also includes a justification for the answers to each question. Part 3 is a list of references that were used for the evaluation.

Conclusion

A review of the existing characterization data, process/building history, sample data and walk downs of the facility, supports the determination that this building and its ancillary structures meet the criteria of a Clean Building, Simple Model as described in Facility Disposition Manual 1C, Procedure 501. This decision is supported by the documentation found throughout the body of this document. No chemical or hazardous radioactive contaminants are associated with this structure.

Part 1. Project Scope

Scope

This Evaluation has been prepared in accordance with requirements found in Facility Disposition Manual 1C; Procedure 502, "Preparing Decommissioning Decision Documents". The scope of this evaluation includes 480-3D, Maintenance Field Office and Shop, which is further described in the next section.

The proposed decommissioning end-state for this facility is demolition to the building slab.

The described decommissioning activities are not the final area closure actions. The decommissioning of a building is intended to reduce landlord costs, increase safety by removing excess facilities and reduce the potential for releases of hazardous substances to the environment.

Facility Description

The D-Area Maintenance Building 480-3D is a 24' X 24' prefabricated structure built in the early 1950s. Refer to Figure 1 for a photograph of the building from the front exterior.

In the original construction the siding and roof were made of corrugated asbestos. The original interior walls were asbestos cement board. The framing of the walls were steel studs. The doors were hollow metal. The windows were standard commercial, externally projected, steel sash with adjustable louvers. It was constructed with two hollow steel personnel access doors and a double, side-swinging bay door. The building was put in place on a concrete slab and had two partitioned rooms within: a “chemical (lime) storage room” and a “chlorine cylinder room”. The building was originally used as a preparation building for treatment of cooling tower water. Referring to Figure 2, the lime and chlorine cylinder areas, shown with a door partitioning them, were one space.

Currently, the building is abandoned and retains the corrugated asbestos siding and roofing, as well as the original windows, doors and framing studs. The asbestos cement board interior of the building has been replaced with drywall. There are three spaces partitioned off in the building (Figure 2). The floor of the building is now tiled over the concrete slab. Figure 3 shows where the building is in reference to surrounding structures.



Figure 1. Photograph of Building 480-3D

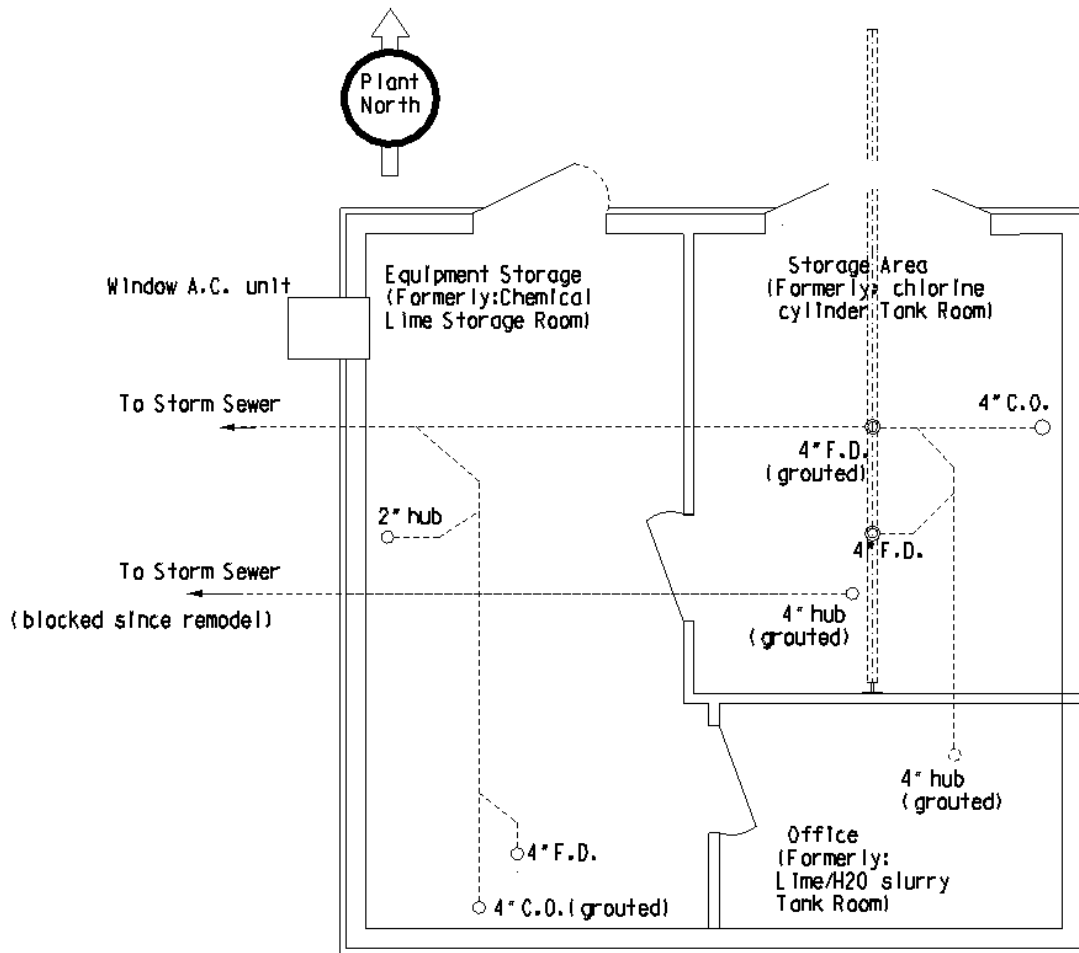


Figure 2. Layout of Building 480-3D

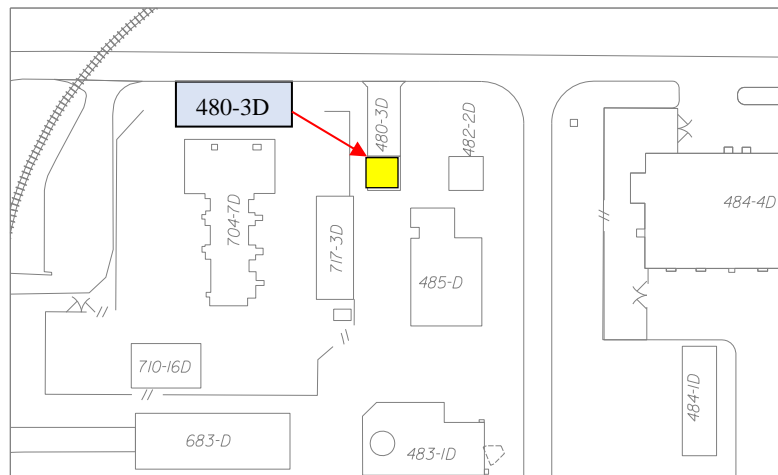


Figure 3. Building 480-3D Location in D-Area

Process History

Review of records, walkdowns and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical or electrical energy or interaction was performed to change the state of the input material or to produce a new output product).

Building 480-3D was originally used for packaged chemical (lime) storage and preparation for treatment of cooling tower water. The water treatment was known to use lime ($\text{Ca}(\text{OH})_2$) and chlorine. In reviewing available information, chlorine was provided as a liquid and stored in three chlorine cylinders located inside the structure. Chlorine was metered directly into a process water line. Lime was fed from a lime feeder located in the lime storage room to a lime slurry tank located in the south east corner of the building. Chlorine and lime solutions were transferred directly to the Cooling Tower 485-D basin. Lime was used in the treatment of the cooling tower water for pH adjustment and as a water softener. Chlorine was used in the treatment of the cooling tower water as a biocide and algacide. The building also had a 3" process water connection. Transfer of lime and chlorine solutions in the building were performed using air ejectors. Initial design also included air compressor(s), but the air compressor equipment was removed. It is not known if the equipment was removed in the design phase or after installation. Aside from lime and chlorine no other chemicals were used or stored in the building.

In the period of 1976–1977, plans were made and executed to convert the building to office space. All equipment was removed, and domestic water service was installed for the conversion. Alterations were made to the drainage and process water supply lines within the facility. The building is currently abandoned. The equipment and storage areas are empty.

Table 1. Chemical Process

<i>Chemical Name</i>	<i>Location</i>	<i>Evidence of spills?</i>
<i>N/A</i>	<i>N/A</i>	<i>No</i>

Table 2. Radioactive Process

<i>Isotope</i>	<i>Contaminated areas/others</i>
<i>N/A</i>	<i>N/A</i>

The original plan for the building identifies multiple floor drains, hubs and clean-outs inside the building. All drains, hubs and clean-outs were plugged and grouted except one (1) hub and one (1) floor drain inside the former Lime Storage Room plus one (1) clean-out and one (1) floor drain inside the former Chlorine Cylinder Tank Room. Reference Figure 2 for more detailed locations. These exceptions remain in good condition and are still connected to the Storm Sewer drain system. Remaining hub, cleanout, and floor drains will also be plugged and grouted. The facility also had a 3" process water supply which has now been disconnected exterior to the building and capped. A hub to the Storm Sewer drain lines was removed and the piping was filled with grout. The process water piping and valves were removed to the floor and the remaining pipe filled with grout. In addition, domestic water supply lines, water heater, sink and drinking

fountain were installed as part of the office conversion. Currently, the domestic water supply line has been disconnected exterior to the building and capped. There is no visible evidence of spills within the facility. The slab of the building shows no visible cracks or degradation. The building contains no sump(s).

Summary of Existing Characterization

Characterization has been accomplished using a combination of process knowledge/historical release information, verification walk downs and sampling as appropriate.

An important part of the characterization portion of this evaluation is a historical review of spills/releases to the environment. This review includes a review of the Occurrence Reporting and Processing System/ Site Item Reportability and Issue Management (ORPS/SIRIM) database (Reference 3) conducted from the effective date of the Federal Facility Agreement (FFA), August 16, 1993 to present and a review of the FFA (Reference 2). The FFA serves as a review of releases/spills to the environment prior to August 16, 1993. Review of the FFA, the SRS ORPS/SIRIM database and SRS spill files reveals no record of spills having occurred in the 480-3D structure.

Chemical activities in this facility have only ever involved low-hazard quantities of liquid chlorine stored in up to three (3) cylinders and metered/injected as a water treatment algaecide/biocide into a process water line running to the cooling tower. The building never contained or processed radioactive material(s) (Reference 5). Any release of chlorine within the building would have had no impact on the structure except in possibly contributing to corrosion of metals used in construction. When exposed to atmospheric conditions, chlorine rapidly decays (Reference 7). Any stains identified in the concrete slab during decommissioning will be cleaned with a strong surfactant, such as BioSolve™ as part of the decommissioning activities for the building.

An asbestos survey of the building was conducted on November 11, 2019, which identified approximately 2,560 square feet of Asbestos Containing Materials (ACM) and 31 square feet of Presumed Asbestos Containing Materials (PACM). The results of that survey are included in Q-APG-D-00010, Baseline Asbestos Inspection Report of Building 480-3D, Reference 6. In accordance with 40 CFR part 61.145, a ten day notification will be filed with South Carolina Department of Health and Environmental Control (SCDHEC) prior to demolition and all ACM/PACM removal will be performed by asbestos trained personnel with proper permitting and waste disposal procedures.

Wastes generated during decommissioning will be characterized and managed in accordance with Savannah River Site (SRS) procedures and State and Federal regulations.

Historical Significance

A review has been conducted in accordance with a Programmatic Agreement. This review resulted in the publication of a Cultural Resources Management Plan (Reference 4) in which the

facilities with historical significance are listed. This facility is not listed in that reference and therefore is not historically significant.

Part 2. Evaluation

Clean Facilities

	Question	Yes	No	Justification for water treatment
1.	Has the facility ever contained or processed radioactive or hazardous material other than stored packaged material or materials of construction? <i>If yes, go to question 4.</i>		X	A review of records, walkdowns and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product). Chemical activities in this facility extended only to the mid-1970s and have only ever involved low-hazard quantities (< 1500 lbs.) of liquid chlorine stored in up to three (3) cylinders and metered/injected as a water treatment algaecide/biocide into a process water line running to the cooling tower. The building never contained or processed radioactive material(s) (Reference 5). Any release of chlorine within the building would have had no impact on the structure except in possibly contributing to corrosion of metals used in construction. When exposed to atmospheric conditions, chlorine rapidly decays (Reference 7). Any stains identified in the concrete slab during decommissioning will be cleaned with a strong surfactant, such as BioSolve™ as part of the decommissioning activities for the building.
2.	If there was stored packaged material, has there ever been a spill? <i>If No or N/A, this is a Simple Model. Stop.</i>		X	There is no documented evidence of spills of chlorine within or outside of the facility. EC&ACP has determined that a final survey is not required. EC&ACP determined that the nature of the chemicals used, the history of the facility and current facility condition do not warrant a final survey. Building 480-3D will be a Simple Model decommissioning.
3.	Was spill confined inside structure and cleaned to free release standard per Radiological Control Manual 5Q (for radiological) or continued occupancy per Industrial Hygiene Manual 4Q (for hazardous)? <i>If Yes, this is a Simple Model. Stop.</i>			N/A

Contaminated Facilities

	Question	Yes	No	Justification
4.	Is the facility listed as a RCRA/CERCLA Unit in Appendix C of the SRS FFA? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
5.	Is the facility listed as a Site Evaluation Area in Appendix G of the SRS FFA? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A

	Question	Yes	No	Justification for water treatment
6.	Is there evidence that there has been a release of hazardous or radioactive materials outside the structure? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
7.	Is there a substantial threat of a release of hazardous or radioactive materials outside the structure? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
8.	Has the facility been assigned a hazard category as defined in Facility Safety Document Manual 11Q? <i>If No, stop and refer facility for evaluation to assign a hazard category, then proceed</i>			N/A

Contaminated Facilities (cont'd)

	Question	Yes	No	Justification
9.	Is the hazard category Nuclear (HC- 2 or 3), radiological, or high hazard chemical? <i>If Yes, this is a CERCLA Model. Stop</i>			N/A
10.	Has the Department of Energy-Savannah River (DOE-SR) directed that the decommissioning be performed using the CERCLA Model? <i>If yes, this is a CERCLA Model. Stop</i>			N/A
12.	Is the facility a formerly nuclear, radiological, or high-hazard chemical facility? <i>If Yes, this is an Integrated Sampling Model. Stop.</i>			N/A
13.	Has Environmental Compliance and Area Completion Project's Regulatory Support Group determined that a final survey is not required for this facility? <i>If Yes, this is a Simple Model. If No, this is an Integrated Sampling Model. Stop</i>			N/A

N/A – not applicable

Part 3. Review of Existing Records

The following facility records were reviewed as a part of this evaluation:

Ref #	Document No.	Revision/Date	Title
1	SRNS-RF-2008-00086-000-M&O	Revision 19-01-MO Feb.14, 2019	Standard Requirements Identification System FA00 Facility List.
2	WSRC-OS-94-42	Rev 0, Aug. 16, 1993 All updates through Sept. 21, 2018, including Rev. 0 Appendices C, G and K for Fiscal Year 2019	FFA for the SRS, Administrative Document No. 89-05-FF
3	N/A	N/A / Since 1993	D-Area SIRIM and ORPS reports 08/1993 to 02/2009.
4	N/A	Final /January 26, 2005	Savannah River Site's Cold War Built Environment Cultural Resources Management Plan
5	S-EHS-D-00001, Rev 0	0/April, 2006	D-Area Hazards Survey
6	Q-APG-D-00010	0/November 11, 2019	Baseline Asbestos Inspection Report of Building 480-3D
7	<u>Water Research</u> PII: S0043- 1354(98)00519-3	Issue 12, Revision 0/ August 1999, Pages 2735-2746	Modelling of Chlorine Decay in Municipal Water Supplies