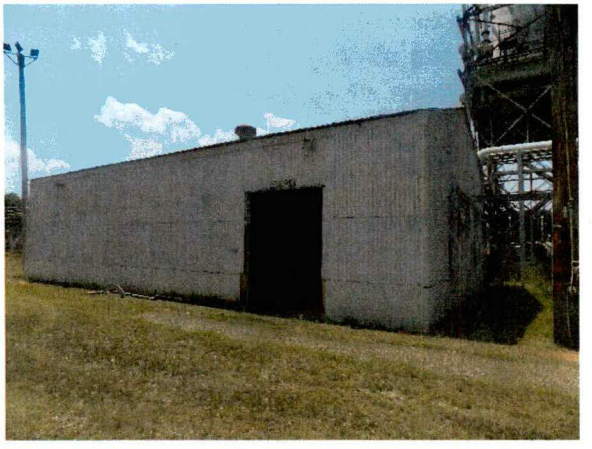
Engineering Survey & Interference Report for Building 483-3D, Electrical Control Building



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

Document Revision History

Date	Rev	Page	Description of Changes
11/2/20	0	All	Initial Issue

1.0 Introduction

The purpose of this survey / report is to provide guidance for the safe demolition of Building 483-3D, a steel frame structure located at the southeast corner of the Boiler and Process Water Treatment Facilities of D-Area in the Savannah River Site (SRS), as well as meeting the requirements of OSHA Standard 1926.850(a).

2.0 Background

2.1 Facility Description

This document addresses Building 483-3D, Electrical Control Building, and the following ancillary structures:

- Exterior North Cable Trench
- Pipe and Conduit Bridge

Building 483-3D is a single-story steel frame structure sitting on a concrete slab. The siding and roof are corrugated asbestos (Ref. 5.3). The dimensions of the structure are approximately 62.5' long x 32.5'" wide x 14' high. (approx.2,031 square feet).

- Building 483-3D had electrical power supplied at 13.8 kilovolts (kV), which has been disconnected and isolated.
- There is an 8.5' wide roll-up door on the south wall of the structure and a standard swing door on the north wall of the structure.
- Construction of the building was completed, and operations began circa 1952.
- Heat to the structure used to be provided by overhead electric heaters inside the structure.
- Within the building there were three switchgear banks, all previously removed. Two switchgear banks were 2.4kV and the other was 480V. The 2.4kV 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.
- The northeast (AT1W) transformer pad has an empty cable tray that goes overhead to the west and enters Building 483-3D.
- The scope of this decommissioning ends at the end of the north cable trench concrete slab. This is also the boundary for the conduit bridge that is mounted above the cable trench.
- Inside the building are two floor drains and a cleanout. All are in line with the center of the building slab running east-west. The drains go to the area process sewer. It is noted that 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 is one transformer, AT2W (southeast) (Figure 3), which is outside the decommissioning scope of this project.

2.2 Facility Condition

Based on visual inspection on October 5, 2020, the structure as defined in References 5.1 and 5.2 is in good condition, and there is no potential for an unplanned collapse of the structure either due to forces of nature and/or vibrations created by movement of heavy equipment in proximity to the building.

The proposed end-state for this facility which has no defined or anticipated future missions, is decommissioning of the above grade structure(s) to the top of the concrete slab(s). The end-state also includes removal of the pipe bridge and piping on the north side of the building along with "In-Situ" decommissioning of the north side pipe trench with an appropriate cementitious fill material.

On November 12, 2019, an asbestos inspection was conducted on Building 483-3D (Q-APG-D-00020, Reference 5.3), with the results being there were numerous instances that tested positive for asbestos containing materials (ACM) and some presumed asbestos containing materials (PACM) that will either be dealt with prior to decommissioning or by the decommissioning contractor.

- There are no potential hazards from other structures in the area.
- There are no energized overhead or underground powerlines proximate the building.
- Any underground lines in the general vicinity of the building are deep enough that there is no potential for damage due to heavy equipment.
- There are no fall hazards associated with Building 483-3D.

3.0 Discussion

3.1 General

All demolition work shall meet the requirements of 29CFR1926 Subpart T and SRS Manual 8Q, Procedure 104. All personnel performing demolition work shall be knowledgeable of these documents.

Other hazards not specifically identified in the engineering survey are mitigated or prevented by site programs as described in SRS Manual 1-01, MP 1.22 Integrated Safety Management system.

All hazardous materials have already been removed or will be removed prior to decommissioning (Reference 5.4). All wastes generated during decommissioning shall be managed in accordance with SRS procedures. Barricades will be established in accordance with Manual 8Q, Procedure 9 prior to demolition.

3.2 Interferences

There are no domestic water, fire water, or sanitary sewers associated with this building. There are also no electric lines, poles & guy wires or communications lines close to or associated with this building. Prior to demolition and removal 483-3D shall be confirmed isolated and disconnected from any associated utilities and rendered cold and dark (C&D) (References 5.5 and 5.6) in accordance with EC&ACP guidelines.

Appendix A provides a general lay-out of the area, interfacing facilities/utilities within proximity of the demolition area. All underground utilities are buried deep enough that the equipment may safely operate over them.

3.3 Hazardous Energy

There is no hazardous energy associated with Building 483-3D.

3.4 Unplanned Collapse

There is no potential for an unplanned collapse associated with the decommissioning of Building 483-3D.

4.0 Summary / Conclusions

The decommissioning end state for Building 483-3D, which has no defined or anticipated future mission, is "Demolish" the above grade structure to the building's concrete floor slab. (Refs. 5.1 and 5.2). The structures can be demolished using a track hoe mounted hydraulic shear; the shear will also size reduce the material and load into skip pans. A grappler and front-end loaders may also be used to load material into skip pans. The area will be cleaned up. The equipment operators should utilize a flag person so as not to contact facilities/services within proximity of the demolition area. This method of demolishing the structure with the hydraulic shear will ensure that most of the rubble lands inside the building footprint.

This engineering survey was performed to determine the condition of the structure prior to demolition. The results of the survey are that the structure is sound and conventional demolition may proceed.

5.0 References

5.1 G-FDE-D-00019, Rev. 0, dated 4/28/20, "Facility Decommissioning Evaluation Building 483-3D, Electrical Control Building"

5.2 V-PMP-D-00026, Rev. 1, dated November 2, 2020, "Decommissioning End Points Document Building 483-3D, Electrical Control Building"

5.3 Q-APG-D-00020, Rev. 0, dated November 25, 2019, "Baseline Asbestos Inspection Report of Building 483-3D"

5.4 V-PCOR-D-00042, Rev. 0, dated 7/1/2014, "Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings"

5.5 E-SDD-D-00001, Rev. 1, dated August 19, 2020, "Verification of Hazardous Energy Isolations for Building 484-D Powerhouse and Ancillary Buildings"

5.6 E-SDD-D-00002, Rev. 0, dated August 17, 2020, "Closeout of Verification for Building 484-D Powerhouse and Ancillary Buildings"

Appendix A – General Layout and Interfacing Facilities

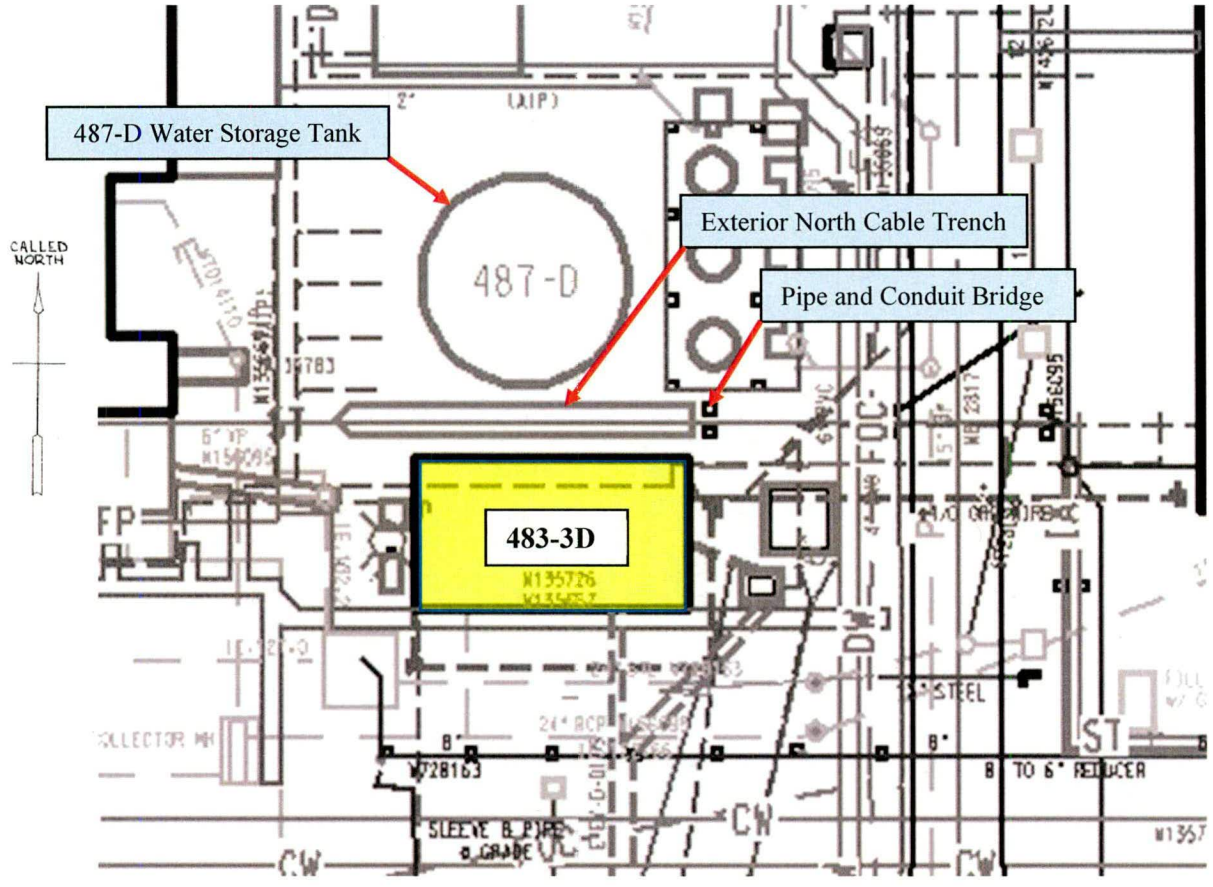

Figure 1: Building 483-3D and Surrounding Facilities/Utilities

Appendix A – General Layout and Interfacing Facilities

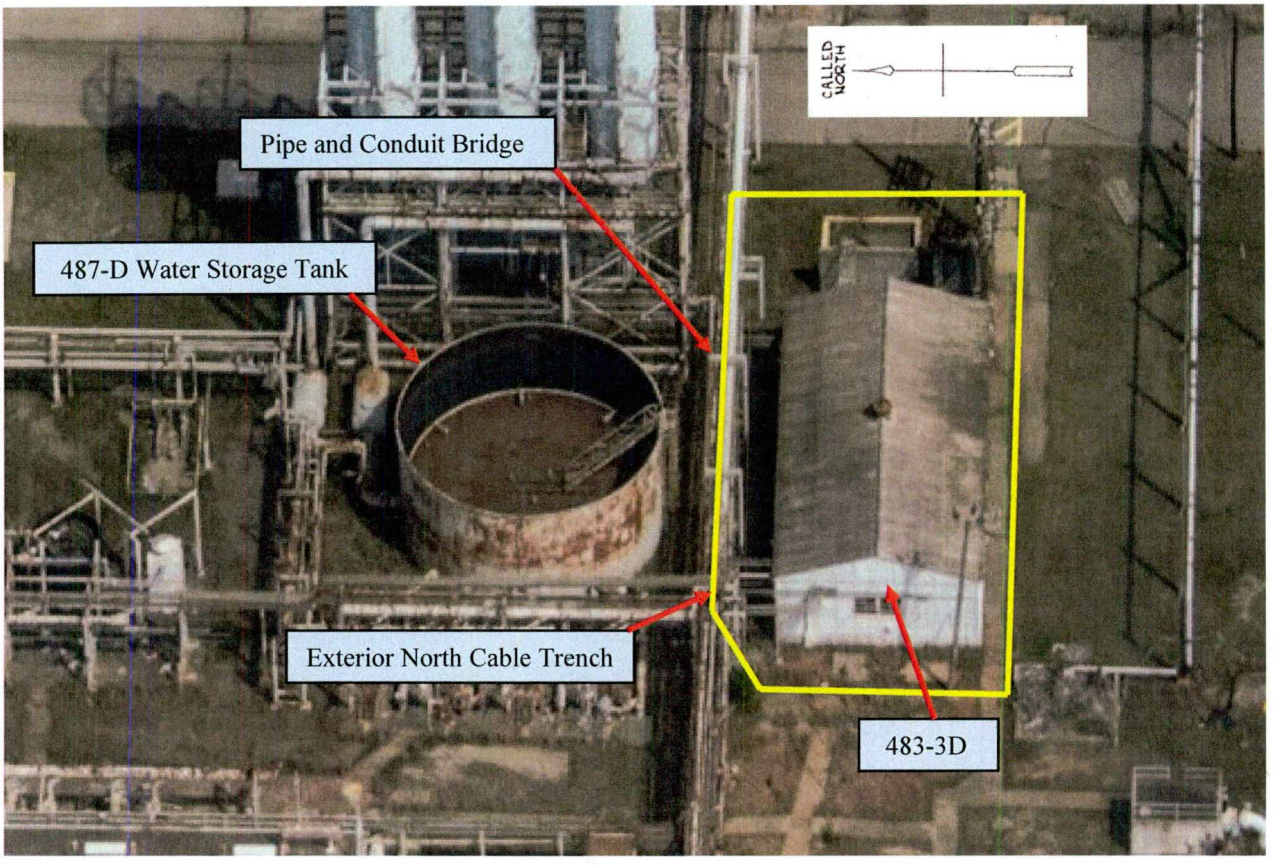

Figure 2: Aerial View of 483-3D and Surrounding Buildings

Appendix A – General Layout and Interfacing Facilities

Figure 3: Transformer AT2W (Not in Scope)

Figure 4: Building 483-3D Ancillary Cable Trench and Pipe/Conduit Bridge