



Department of Energy

Washington, DC 20585

September 8, 2022

The Honorable Joyce L. Connery
Chair
Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Chair Connery:

This letter serves as a response to the Defense Nuclear Facilities Safety Board's November 2, 2021, letter referring to Recommendation 2012-1, *Savannah River Site (SRS) Building 235-F Safety* and requesting an annual briefing and report pursuant to 42 U.S.C. § 2286b(d). I am responding on behalf of Secretary Granholm.

The Board requested the annual briefing and report on the following five topic areas:

1. Progress made to deactivate and decommission Building 235-F.
2. Results of radiological surveys and inspections to verify that contamination is not spreading.
3. Status and schedule for establishing a final end state determination with regulatory authorities.
4. Results of structural integrity inspections, and any corrective actions identified and implemented from these inspections.
5. Any changes to the status of the E-5 ventilation system and sand filter, including any maintenance activities performed.

The Department developed the enclosed report to address these topics.

Additionally, the President's Fiscal Year 2023 Budget Request sent to Congress includes funding for decommissioning activities at Building 235-F in 2023. The recent approval by Savannah River Site's environmental regulatory authority for in-situ decommissioning along with the current progress in facility deactivation would allow those funds to be used toward initiating facility decommissioning.

In accordance with your reporting request, we have coordinated a briefing with the Board to discuss this response. We appreciate the Board's perspectives and look forward to continuing positive interactions with you and your staff.

If you have any questions, please contact me or Mr. Michael D. Budney, Manager, Savannah River Operations Office, at (803) 952-7243.

Sincerely,

A handwritten signature in blue ink, appearing to read "Wm White", with a long horizontal flourish extending to the right.

William I. White
Senior Advisor for Environmental Management

Enclosure

cc: Joe Olencz, EHSS-1
Michael Budney, SR

Enclosure for Response to DNFSB
November 2, 2021, Report Request

The Department's 235-F project team began deactivation of Building 235-F in July of 2019. Deactivation activities are preparing the facility for Long Term Safe Storage, which is an end state relatively free of non-radiological hazards, with acceptable radiological risks, and minimal continuing surveillance and maintenance. Deactivation is preparing the facility for eventual decommissioning. The deactivation project involves the shutdown of all active structures, systems, and components in Building 235-F along with electrical/mechanical isolation of the building. This shutdown/isolation will greatly reduce the cost for surveillance and maintenance (S&M) of Building 235-F during Safe Storage.

The Department of Energy (DOE), along with Savannah River Nuclear Solutions (SRNS), has been working to improve the posture of Building 235-F and has the following to report in response to the Defense Nuclear Facilities Safety Board's (DNFSB) November 2, 2021, letter requesting annual briefings and reports on the five topics specified below.

1. Progress made to Deactivate and Decommission Building 235-F.

Since deactivation began in 2019, the 235-F project team has focused on removing hazardous material from the building, fixing contamination outside of the process enclosures, draining shield water, and preparing for the ventilation transition sequence (VTS), which will deactivate all fans except the E-5 fans. The E-5 fans will maintain vacuum on the areas where material and contamination are present.

The current status of Building 235-F deactivation includes:

- All process/shield water has been sampled and discarded (approximately 5,100 gallons) and hydraulic fluids and oils have been removed from all equipment that is not in-service.
- Cell One North master portion of the manipulator was removed and sealed using a metal cap and FireDam™ sealant.
- The Actinide Billet Line ventilation air operated damper was placed in required position to support VTS. FireDam™ fixative was applied to the contaminated areas and covered with a pipe wrap to further seal the area.
- Plutonium Fuel Form Facility (PuFF) – in the East Service and East Maintenance areas, Rooms 2010 and 1002, which supported PuFF cells 1-5, FireDam™ fixative was applied over the duct and surrounding areas.
- The VTS has been completed to include repairs to improve interior door seals, sealing pipes/conduit, covering ventilation registers, and sealing the floor hatch between the first and second floor. All the fans in the Building are now shut off.

Radiological surveys found no further contamination since the work was completed.

2. Results of Radiological Surveys and Inspections Verifying that Contamination is Not Spreading.

Radiological Protection Personnel perform routine surveys of Building 235-F prior to entry. Surveys will continue to be performed up to the termination of power to the facility. Radiological surveys have found no spread of contamination in any area including where FireDam™ fixative has been applied. Radiological surveys will be performed annually in accordance with the Radiological Control Program.

3. Status and Schedule for Establishing a Final End-State Determination with Regulatory Authorities.

The regulatory process for end state determination is complete and includes approval from both the U.S. Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC).

DOE used the Comprehensive Environmental Response, Compensation, and Liability Act non-time critical removal action process to determine appropriate end state for 235-F decommissioning. The series of activities conducted over a 2-year period included:

- Several scoping meetings with regulators to reach agreement on alternatives for evaluation.
- Development and issuance of Removal Site Evaluation Report / Engineering Evaluation / Cost Analysis (EE/CA) for 235-F.
- Regulatory approval of the EE/CA document.
- Public comment period on EE/CA and selected alternatives.
- DOE issuance of Action Memorandum to EPA and SCDHEC and notice to the public through an Environmental Bulletin.

The planned activities to occur in FY23 include planning and developing the Safety Basis documentation to address decommissioning and identification of technical resources to develop a ventilation strategy, grouting strategy, and a hydrogen study. The Decommissioning End State will consist of grouting of the 235-F process areas and placement of a durable engineered roof on Building 235-F.

The deactivation activities will be completed in FY 23 and the decommissioning activities are planned to be completed in FY30 per the DOE Strategic Plan

4. Results of Structural Integrity Inspections, and Any Corrective Actions Identified and Implemented from these Inspections.

Structural Integrity Inspections

Structural Integrity Inspections are performed every five years by the Structural Mechanics and F-Area Engineering Department. The most recent inspection found no conditions requiring repairs, as documented in the 235-F Facility 2021 Structural Integrity Program (SIP) Report (T-ESR-F-00036).

Enclosure Integrity Inspections

The 235-F Enclosure Integrity Program (EIP) is described in the Basis for Interim Operation (BIO), administrative control (AC) 5.7.2.15. The EIP Program consists of Radiological Surveys, Visual Inspections, and Smoke Leak Testing of the enclosures to verify the integrity of the structure and the pressure boundary. The last three Radiological Inspections detected no changes that would indicate enclosure seal failure or degradation. The January 2022 inspection is documented in SRNS-E1400-2022-00005, *235-F Enclosure Integrity Report*. The next scheduled Enclosure Integrity Inspection is scheduled for January 2025.

The EIP consists of two major components:

1. Radiological Control Program: Annually, the Radiation Protection Department (RPD) shall perform periodic radiological surveys around sealing surfaces to ensure contamination has not migrated from the confinement boundary, which may indicate integrity issues.
 2. Enclosure Integrity Inspection: Every three (3) years, with the assistance of the RPD, all required 235-F enclosures will be visually inspected by personnel deemed cognizant by the Facility Manager utilizing approved facility procedures. If a suspect area is detected, a smoke test may be performed to help identify the location and scope of the issue. A baseline photographic record of the 235-F enclosures exists in the IPix database. This and/or additional photographs may be used to compare existing conditions to previous conditions and document leak points and/or repairs.
- #### **5. Changes to the Status of the E-5 Ventilation System and Sand Filter, including any Maintenance Activities Performed.**

There were no changes to E-5 Ventilation System and Sand Filter Status. The E-5 Fans have continued to operate with no issues during the past year. One fan is in standby when the other fan is in operation. The fan run times are equalized by rotating the operation. Ventilation readings are taken daily. Periodic preventive maintenance is regularly performed including vibration readings, belt changes and lubrication. No corrective maintenance was required in the past year.

The 292-2F Fan House and 294-2F Sand Filter are inspected every five (5) years for structural integrity. The most recent inspection, performed in July 2022 is documented in Building 235-F Complex – 2022 SIP Inspection Report for 294-2F (T-ESR-F-00040). There were two issues noted during the inspections: roof deterioration and rainwater infiltration into the filter media

The E-5 Fans are now drawing a vacuum on the process areas of Building 235-F. The completion of the VTS has removed all other fans in Building 235-F from service. The facility is currently in a steady state.

The Sand Filter efficiency is checked every 12 months. The last test was performed on September 17, 2021, and the filter media passed with a 99.99% efficiency rating. The next test is scheduled for September 17, 2022. The Fans and the Sand Filter remain in good working order and will remain functional while Building 235-F is in long term safe storage and decommissioning.

Conclusion

Significant progress has been made moving the 235-F Facility toward the deactivation state. To date, there have been no major issues, nor spread of contamination. The team continues to make deactivation progress in preparation to facility decommission. DOE and SRNS are working to have Building 235-F isolated from the utilities by September 2022 and all deactivation activities will be complete by March 2023.

DOE and SRNS have worked with SCDHEC and EPA to finalize plans for the decommissioning of Building 235-F. EE/CA was approved by the regulator, submitted for feedback, and received no comments.

Additionally, the President's Fiscal Year 2023 Budget Request sent to Congress includes funding for decommissioning activities at Building 235-F in 2023. The recent approval by Savannah River Site's environmental regulatory authority for in-situ decommissioning along with the current progress in facility deactivation would allow those funds to be used toward initiating facility decommissioning.