Department of Energy
Washington, DC 20585

August 13, 2024

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 the Department of Energy (DOE) 2024 annual response to the Defense Nuclear Facilities Safety Board's (Board) November 02, 2021, letter regarding Recommendation 2012-1, *Savannah River Site (SRS) Building 235-F Safety*.

The Board requested an 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.

DOE has assembled the attached report to address these topics.

In accordance with your reporting request, a briefing to the Board will be conducted on August 15, 2024, to discuss this response. We welcome 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,

Candice Trummell Robertson

Candice Trummell Robertson
Senior Advisor for Environmental Management

Enclosure

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Safety at Savannah River Site Building 235-F

The Department of Energy (DOE), along with Savannah River Nuclear Solutions (SRNS), has been working to improve the posture of Building 235-F. They are providing this report in response to the Defense Nuclear Facilities Safety Board's November 2, 2021, letter requesting an Annual Report regarding safety at Savannah River Site (SRS) Building 235-F.

Deactivation of Building 235-F began in July of 2019 and was completed in February 2023. Deactivation activities prepared the facility for long-term safe storage, which is relatively free of non-radiological hazards, with acceptable radiological risks, and minimal continuing surveillance and maintenance.

Deactivation involved the shutdown of all active structures, systems, and components in Building 235-F along with electrical/mechanical isolation of the building. The deactivation prepared the facility for decommissioning. This shutdown/isolation greatly reduces the cost for surveillance and maintenance of Building 235-F during safe storage until decommissioning is completed. Decommissioning of 235-F is a top priority for the Office of Environmental Management and SRS.

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

Deactivation was completed in February 2023 and the building is in long-term safe storage awaiting decommissioning with minimal surveillance and maintenance.

The current Documented Safety Analysis (DSA) supports the facility's surveillance and maintenance state and will continue to do so until changes are made to the facility; at which time design will follow the change process to ensure the DSA is updated and approved to document necessary changes.

Decommissioning activities for fiscal year (FY)24 and FY25 include planning and design, update to the Safety Basis Documents to address decommissioning, and identification of technical resources to develop a ventilation strategy, grouting strategy, and demolition and removal of ancillary equipment adjacent to 235- F. The project schedule is dependent upon an approved baseline and receipt of funding. Currently, design is scheduled to begin in FY25, grouting is scheduled to begin in late FY27 with field work completion in FY29. Project closeout is planned for FY30.

Demolition and Removal (D&R) of 235-F exterior ancillary equipment and facilities started in FY23 and is planned until FY25. The scope includes but is not limited to asbestos abatement and removal of exterior conduit, piping, and ductwork, and D&R of office trailers, cooling tower, electrical substation, diesel generator/components and security entry point. D&R of the ancillary equipment and facilities will support eventual decommissioning of 235-F.

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

Radiological Protection Personnel perform routine surveys of Building 235-F at entry as part of the work group. Radiological Surveys have found no spread of contamination.

Entry was made into the facility to perform Level III Lock Inspections on May 20, 2024. The radiological values throughout the building were similar to the March 2023 inspection. It was documented in the 235-F Enclosure Integrity Program Inspection Report (SRNS-E1700-2023-00001). Radiological surveys found no spread of contamination during entry.

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 the South Carolina Department of Environmental Services (SCDES) for in-situ decommissioning.

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

Structural Integrity Inspections
There are no changes since last year's report. The last inspection conducted in February 2022 found no conditions requiring repairs. The inspection results are documented in the 235-F Facility 2021 Structural Integrity Program Report (T-ESR-F-00036). The next inspection is scheduled by February 2027.

Enclosure Integrity Inspections
The 235-F Enclosure Integrity Program (EIP) is described in the Safety Basis 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.

An EIP was performed in the facility (Actinide Billet Line (ABL), Old Metallurgical Laboratory (OML), Plutonium Experimental Facility (PEF), and Plutonium Fuel Form (PuFF)) in parallel with the Level III Lock Inspection entry on May 20, 2024. This inspection was performed as a recommendation from the last EIP Engineering Evaluation in May 2023. The radiological values from surveys performed throughout the building were similar to the March 2023 inspection. Radiological surveys found no spread of contamination during entry.

Two items were identified during the inspection. The PuFF Cell 8 manipulator thru-tube has minor in-leakage, and an in-leak associated with the access port on PEF Hood 2. The PEF Hood 2 has negligible holdup quantities based on assay results. The access port and PEF Hood 2 were never operational. Facility engineering is not recommending

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immediate repairs be made to either of the two items during the inspection**.** Neither is impacting the differential pressure readings on the enclosures and no increase in contamination was found at the locations. The 2024 inspection is documented in SRNS-E1740-2024-00004, 235-F Enclosure Integrity Program Inspection Report.

The current planned periodicity of EIP inspections is once a year with the next inspection planned by March 2025.

5. Any Changes to the Status of the E-5 Ventilation System and Sand Filter, including any Maintenance Activities Performed.

The E-5 Fans draw a vacuum on the process areas of Building 235-F. There were no changes to the 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 conducted, which includes vibration readings, belt changes, and lubrication. On May 7, 2023, maintenance on the E-5 #2 Belt was performed during rotation from E-5 #1. Also in May 2023, replacement of the Pressure Safety Valve (PSV) on the backup Nitrogen System for the Damper Operations of the E-5 Fans was performed. No other maintenance was performed in the last year.

The 292-2F Fan House and 294-2F Sand Filter are inspected every five years for structural integrity. The last inspection was performed in July 2022, and is documented in the 2022 Structural Integrity Program Inspection Report for 294-2F (T-ESR-F-00040). The Filter Media was found to perform its design function. The next inspection is scheduled by July 2027.

The Sand Filter efficiency is checked every 18 months. The last test was performed on March 20, 2024, and the Filter Media passed with a 99.99 percent efficiency rating. 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

DOE completed deactivation of the 235-F Facility in February 2023. Radiological Survey Results verify that contamination is not spreading, and Structural Integrity and Ventilation System/Sand Filter Inspections conclude that systems are performing as required.

The SCDES and the EPA have approved the in-situ decommissioning end state of the 235-F Facility.

Responsibility for the facility has been transferred to the Office of the Assistant Manager for Infrastructure and Environmental Stewardship (AMIES) for continued surveillance and maintenance, and decommissioning activities.

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The Office of the Assistant Manager for Nuclear Material Stabilization personnel will continue to support AMIES, as requested, during the surveillance and maintenance, as the plans and designs for the decommissioning are implemented.

The facility is radiologically safe, with no spread of contamination.

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