The Secretary of Energy
Washington, DC 20585
November 28, 2014

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

Enclosed is a summary of schedule changes for the remaining actions and deliverables in the Department of Energy's (DOE) Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (Board) Recommendation 2012-1, Savannah River Site (SRS) Building 235-F Safety.

Mitigating actions completed to date by the Department in Building 235-F include the removal of fixed combustible materials and the development and implementation of a rigorous transient combustible material management program, and electrical de-energization of non-essential equipment. Upgrading the Building 235-F fire detection system is in progress. Taken together, these actions improve the Building 235-F safety posture and reduce the likelihood of a full facility fire.

The Department agrees that action must be taken to reduce the hazards associated with the material at risk that remains as residual contamination within Building 235-F. During a February 26 site visit by the Board, SRS management provided a briefing on the Building 235-F project's status and future schedule of actions and deliverables to address Recommendation 2012-1. The SRS undertook a deliberate approach to assess and analyze work scope to complete the remaining actions associated with the IP for Recommendation 2012-1, balanced against risk mitigation activities and associated funding across the entire site.

The IP schedule changes were necessary because of unforeseeable fiscal and resource challenges. As a result, the project schedule encountered setbacks during fiscal year (FY) 2013 that carried into FY 2014. The changes reflect modifications only to the completion dates of the remaining actions and deliverables in the IP, however, they do not change the actions themselves.

If you have any questions, please contact me or Dr. David C. Moody, SRS Manager and the Department's responsible manager for this Recommendation, at (803) 952-9468.

Sincerely,

Ernest J. Moniz

Enclosure

United States
Department of Energy

Implementation Plan Schedule Changes
for
Defense Nuclear Facilities Safety Board
Recommendation 2012-1

Savannah River Site Building 235-F Safety

Washington, DC 20585

November 2014

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1.0 PURPOSE

The purpose of this enclosure is to summarize schedule changes for remaining actions and deliverables in the United States Department of Energy (DOE) Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (Board) Recommendation 2012-1, Revision 0. The schedule changes were developed based on information and experience to date during execution of the IP. These scheduled changes modify expected completion dates in the IP; they do not change the actions themselves.

2.0 BACKGROUND

On July 10, 2012, the Secretary of Energy sent the Board a letter acknowledging receipt of Recommendation 2012-1 and accepting the Recommendation. The letter also stated that "DOE agrees with the Board that action must be taken to reduce the hazards associated with the material at risk (MAR) that remains as residual contamination within Building 235-F." The letter described DOE's initial actions to remove and control transient combustibles and limit access to Building 235-F. On December 5, 2012, the Secretary transmitted the IP for the Board Recommendation 2012-1, Revision 0 to the Board. This IP outlines actions DOE and its contractors will take to address safety issues at Building 235-F. On December 23, 2013, DOE transmitted the fiscal year (FY) 2013 Annual Report for the Recommendation 2012-1 IP to the Board that summarized progress made on open IP actions and identified actions completed during the year.

Mitigating actions completed to date and those expected to be complete near term will reduce the hazards associated with residual Plutonium 238 in Building 235-F and ensure conditions in the facility do not deteriorate. Specifically:

- The building fire detection system is being upgraded to provide for early detection of fires and decrease the likelihood that a small fire could grow large enough to affect portions of the facility that contain the MAR.
- Electrical de-energization of non-essential equipment is complete and will substantively reduce the likelihood of a post-seismic fire being initiated within the facility.
- The removal of fixed combustible materials and the development and implementation of a rigorous transient combustible material management program are complete. These measures reduce the likelihood that a localized fire, if initiated, would be able to spread and grow large enough to affect other portions of the facility.

Taken together, the above actions improve the Building 235-F safety posture and reduce the likelihood of a full facility fire leading to design basis event consequences.

The overall completion of the IP will be delayed to May 31, 2021. The 29 month delay is the result of a combination of setbacks caused by the budget issues in 2013 and early 2014, combined with a slowdown in remaining activities resulting from projections of

reduced out-year budgets compared to 2014. The budget projections caused the Department to redistribute funding among its many risk priorities at SRS and establish funding for 235-F risk reduction at a reduced but sustainable level.

The Department considered both safety and project management factors when selecting a target funding level for continuing the Building 235-F project. Funding had to be sufficient to ensure trained personnel who were familiar with the facility and planned work scope would be retained. Retention of trained and experienced staff focusing on implementation plan work scope was paramount.

The Building 235-F management and work crews draw upon personnel experienced with transuranic waste cleanup activities at SRS and Rocky Flats, and individuals who were part of the Pu-238 production activities in Building 235-F when the facility was in operation. The unique combination of experience gives the Department a high degree of confidence that cell restoration and MAR removal activities will be conducted methodically, safely and efficiently. The crews are trained and ready to conduct the mock-up activities and develop work planning documents beginning early in 2015 that will lead to restoration of cell infrastructure and culminate with a readiness verification for beginning MAR removal activities in cells 6-9 in 2016 (Action 1-4). Restoration of cell infrastructure is key to beginning MAR removal activities.

Work scope and risk management activities at SRS that must be balanced with the Building 235-F project for available resources were also evaluated. The resources necessary to safely operate site facilities were considered to be a high priority. Activities associated with maintaining compliance with applicable laws (e.g., Resource Conservation and Recovery Act) were considered to be a high priority. Other essential indirect costs were similarly given a high priority. Examples of risk management activities planned to be funded across SRS include:

- Reducing Corrective Maintenance Backlog;
- L & K-Area Reliable Power;
- Critical Spare Parts procurements (Evaporator and Dissolver);
- Used Nuclear Fuel processing;
- Critical new hires to support planned activities;
- Tank Waste minimum safe operations and continued waste tank closure and vitrification activities to meet regulatory commitments;
- Salt Waste Processing Facility construction and start-up;
- Actinide Removal Process/Modular Cesium Unit operations;
- Saltstone Disposal Unit construction to support waste tank operations and tank waste closure;
- Soil and Groundwater remediation commitments;
- Critical site infrastructure maintenance and improvement; and
- Safeguards and Security activities to maintain material control and accountability and physical security

Considering projected funding, DOE was compelled to re-evaluate all site risk reduction activities while keeping Building 235-F risk reduction among the top priorities. The re-evaluation determined other activities, examples described above, presented potential risks to safety and security that required a share of the projected funding over the next several years. The Department will continue to seek opportunities in budget formulation, efficiencies and alternatives that will allow additional funding to be applied to the Building 235-F risk reduction activities so that the schedule for completion of actions within the Recommendation 2012-1 IP can be accelerated if possible.

The revised completion dates for the remaining open actions and deliverables are described in section 3.0 of this document.

3.0 DELIVERABLES/MILESTONES

Action1-3: Restore cell infrastructure in Plutonium Fuel Form Facility (PuFF) cells 6 through 9.

Deliverable: Letter to the DNFSB reporting completion.

Expected Delivery Date: **July 31, 2015**

Lead: Assistant Manager for Nuclear Material Stabilization (AMNMS)

Action 1-4: Complete a Readiness Assessment (RA) for initiation of deactivation activities in PuFF cells 6 through 9 and implement the Deactivation Basis for Interim Operation (BIO).

Deliverable: Letter to the DNFSB reporting initiation of deactivation activities and providing the RA report.

Expected Delivery Date: **May 31, 2016**

Lead: AMNMS

Action 1-6: Update planning schedule to reflect PuFF cells 1 through 5 deactivation actions for the upcoming 12 months.

Deliverable: Letter to the DNFSB reporting planned deactivation actions for 2015. This may be combined with the annual report described in Section 6.0 of the IP.

Expected Delivery Date: **January 30, 2015**

Lead: AMNMS

Action 1-7 Revise the Hazard Analysis, and if necessary the Building 235-F Deactivation BIO to include deactivation activities in PuFF cells 1 through 5.

Deliverable: Letter to the DNFSB reporting DOE approval of the revised Deactivation BIO and forwarding a copy, or notify the DNFSB that a BIO revision was not required.

Expected Delivery Date: **April 30, 2018**

Lead: AMNMS

Action 1-8: If needed, complete a RA for initiation of deactivation activities in PuFF cells 1 through 5 and implement the revised Deactivation BIO.

Deliverable: Letter to the DNFSB reporting initiation of deactivation and MAR removal activities in cells 1 through 5 and provide RA report.

Expected Delivery Date: **July 31, 2018**

Lead: AMNMS

Action 1-9: Using enhanced characterization techniques identify a list of significant components and/or equipment to be removed for MAR reduction in Cells 1 through 5.

Deliverable: List of items to be removed for MAR reduction in Cells 1 through 5.

Expected Delivery Date: **January 31, 2019**

Lead: AMNMS

Action 1-10: Update planning schedule to reflect PuFF cells 1 through 5 deactivation actions for the upcoming 12 months.

Deliverable: Letter to the DNFSB reporting planned deactivation actions for 2016. This may be combined with the annual report described in Section 6.0 of this IP.

Expected Delivery Date: **January 29, 2016**

Lead: AMNMS

Action 1-11: Restore cell infrastructure in PuFF cells 1 through 5.

Deliverable: Letter to the DNFSB reporting completion.

Expected Delivery Date: **November 30, 2018**

Lead: AMNMS

Action 1-12: Update planning schedule to reflect PuFF cells 1 through 5 deactivation actions for the upcoming 12 months.

Deliverable: Letter to the DNFSB reporting planned deactivation actions for 2017. This may be combined with the annual report described in Section 6.0 of the IP.

Expected Delivery Date: **January 31, 2017**

Lead: AMNMS

Action 1-13: Update planning schedule to reflect PuFF cells 1 through 5 deactivation actions for the upcoming 12 months.

Deliverable: Letter to the DNFSB reporting planned deactivation actions for 2018. This may be combined with the annual report described in Section 6.0 of this IP.

Expected Delivery Date: **January 31, 2018**

Lead: AMNMS

Action 1-14: Complete the deactivation of Cells 1 through 9. This will include waste removal.

Deliverable: Letter to the DNFSB reporting completion of deactivation and MAR removal activities.

Expected Delivery Date: **January 31, 2020**

Lead: AMNMS

Action 1-15: Using enhanced characterization techniques derive a final (post deactivation) MAR value to be used for end-state selection and regulatory acceptance. This will demonstrate mitigation of the hazard and resultant risk reduction.

Deliverable: Letter to the DNFSB reporting remaining MAR value for Building 235-F.

Expected Delivery Date: **June 30, 2020**

Lead: AMNMS

Action 1-16 Revise the 235-F Deactivation BIO once the MAR is removed and acknowledge the facility meets the requirements of 10 C.F.R. Part 830 to protect the maximally exposed off-site individual to within the establish DOE-STD-3009 evaluation guidelines and protect the co-located and facility worker within the accepted SRS guidelines of 100 rem.

Deliverable: Letter to the DNFSB reporting DOE approval and providing a copy of the revised Deactivation BIO.

Expected Delivery Date: **May 31, 2021**

Lead: AMNMS

Action 2a-3: Complete removal, encapsulation or isolation of fixed combustibles scope.

Deliverable: Letter to the DNFSB reporting completion.

Expected Delivery Date: **January 30, 2015**

Lead: AMNMS

Action 2b-2: Complete electrical de-energization scope including equipment removal as practical.

Deliverable: Letter to the DNFSB reporting completion.

Expected Delivery Date: **January 30, 2015**

Lead: AMNMS

Action 2c-3: Complete installation and acceptance testing of the PuFF Fire Detection and Alarm System (FDAS) for Surveillance & Maintenance (S&M) and deactivation phases.

Deliverable: Letter to inform FDAS installation and acceptance test completion.

Expected Delivery Date: **January 30, 2015**

Lead: AMNMS

Action 3-3: Develop an updated F-Area drill plan that explicitly includes the participation expectation for all facilities and construction sites surrounding Building 235-F and planned drill dates. Continue to include in F-Area drill plan until the hazard is removed or mitigated.

Deliverable: Updated F-Area drill plan

Expected Delivery Date: Annual updates will be provided in December each calendar year until the hazard is removed or mitigated.

Lead: Director, Office of Safeguards, Security, and Emergency Services (OSSES)

Action 3-4: Execute at least one formally assessed drill each year based on a postulated radiological release from Building 235-F that includes successful demonstration of the ability to adequately protect workers in all facilities and construction sites surrounding Building 235-F.

Deliverable: After-Action Report detailing drill conduct including lessons learned, and a documented path forward to address identified areas for improvement.

Expected Delivery Date: Annual updates will be provided in December each calendar year until the hazard is removed or mitigated.

Lead: Director, OSSES