



The Secretary of Energy
Washington, DC 20585

April 04, 2018

The Honorable Bruce Hamilton
Acting Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Acting Chairman Hamilton:

This responds to the Defense Nuclear Facilities Safety Board's (Board) January 4 letter regarding safety issues with the Conduct of Operations (ConOps) safety management program at the Savannah River Site (SRS).

The Department of Energy (DOE) shares the concerns highlighted in your letter and we recognize that compliance with the facility safety bases is instrumental to ensuring safe operations and adequate protection of the public. However, it is also important to note that the nature of the events and corrective actions implemented do not indicate that SRS operations represent an immediate safety concern.

The Office of Environmental Management (EM), the National Nuclear Security Administration (NNSA), and our contractor organizations self-identified ConOps concerns going back to 2014, and have been decisively implementing continuous improvements in this area since that time. In 2017, EM and NNSA directed additional specific actions to Savannah River Nuclear Solutions and Savannah River Remediation, as appropriate, and both organizations are taking actions to address these safety concerns and their underlying causes with engagement from senior corporate management. The enclosed reports from EM and NNSA provide details on the Department's continuous improvement efforts.

In accordance with your reporting requirement, we will coordinate a briefing with the Board to discuss this response. We appreciate the Board's perspectives and look forward to continued positive interactions with you and your staff as we work to improve ConOps program at SRS.

If you have any questions, please contact Mr. Michael Budney, Manager of the Savannah River Operations Office, at (803) 952-7243, or Ms. Nicole Nelson-Jean, Manager of the Savannah River Field Office, at (803) 208-3689.

Sincerely,

A handwritten signature in black ink that reads "Rick Perry".

Rick Perry

Enclosures



ENCLOSURE 1:

Office of Environmental Management
Savannah River Operations Office

Response to the Defense Nuclear Facilities Safety Board
January 2018 Letter on Conduct of Operations Safety
Management Program at the Savannah River Site

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**Office of Environmental Management Response to the Defense Nuclear Facilities
Safety Board on Conduct of Operations (ConOps) Safety Management Program at
the Savannah River Site**

In July 2017, the Department of Energy (DOE) Savannah River Operations Office (DOE-SR) issued letters to Savannah River Nuclear Solutions (SRNS) and to Savannah River Remediation (SRR) directing corrective action plans (CAP) be implemented to improve implementation of Technical Safety Requirements (TSR) (references 1 and 2). In these letters DOE-SR identified weaknesses in three major areas, each requiring specific corrective actions to drive improvement:

- 1) Less Than Adequate knowledge of TSRs and their bases;
- 2) Rigor of TSR control implementation; and
- 3) Work Authorization Process.

Recognizing concerns with the contractors' CAP, and recognizing that previous attempts to remedy similar concerns did not appear to have long term effectiveness, DOE-SR also directed the contractors' responses to provide clear rationales for how these actions will produce improved results over any ongoing or previous efforts to resolve TSR compliance issues.

DOE-SR had already begun a high-level effort to drive improvements in the contractors' Contractor Assurance Systems (CAS), of which an improved CAP was an expected outcome. These concerns being pursued by DOE-SR are parallel to the four concerns outlined in the January 4, 2018, Defense Nuclear Facilities Safety Board (Board) letter to the Secretary of Energy. This response highlights DOE's ongoing efforts to drive both timely and sustainable improvements in the Conduct of Operations (ConOps) program and with proper TSR implementation. The two contractors' actions in addressing each of the concerns below differ in some respects: differences in the timing of DOE-SR and/or contractor identification of these concerns and differences in the related causal factors identified by each contractor in addressing these concerns.

In addition to a significant mutual DOE-contractor effort to drive improvements in nuclear safety and ConOps following several months of an Operational Pause at SRNS beginning in late 2015, SRR had also initiated efforts to improve TSR implementation based on findings identified in a self-assessment conducted in June 2014 (reference 3).

DOE-SR had provided additional letters of concern to the two contractors, including:

- May 2016 DOE-SR letter to SRNS identifying a concern with Documented Safety Analysis (DSA) compliance (reference 4).
- June 2016 DOE-SR letter to SRR concerning recent operational events (reference 5).

Action plans in response to DOE-SR direction have been developed by the contractors, accepted by DOE-SR, and the plans are being implemented. DOE-SR is conducting

oversight and follow up with the contractors on the progress being made. DOE will perform effectiveness reviews after the contractor has had adequate run time and after the contractor has completed their effectiveness reviews. There are subjective fee incentives associated with progress related to these actions, with additional incentives planned.

- For SRR: Six of thirty-one identified corrective actions remain open. Five of the six open actions are scheduled for completion by May 2018, with the remaining corrective action (training-related) to be completing by April 2019. Also, DOE recognizes the liquid waste contractor will transition this year. DOE-SR is committed to ensure that the improvements initiated and planned by SRR are continued with at least the same level of effort by the new Liquid Waste Contractor.
- For SRNS: Eighteen of thirty-three identified corrective actions have been verified closed by DOE-SR. Eight additional actions have been closed pending additional SRNS Management or DOE acceptance. Of the seven remaining actions, four will be closed by May 2018. Two more actions will be closed by the end of the year (Limiting Conditions for Operation (LCO) and Surveillance Tracking program). The final action, an effectiveness review, will follow.

The following items identify the four specific areas of concern identified by the Board in its correspondence to DOE and status of actions to address them.

1. Less than adequate rigor of TSR control implementation.

For SRR:

In October 2017, SRR completed a Common Cause Analysis (CCA) for a total of eight TSR violations that have occurred since June of 2014. SRR has developed corrective actions based upon these three primary causes:

- Tasks and individual accountability were not made clear to the worker.
- Appropriate level of in-task supervision. Roles, Responsibilities, Authorities and Accountability (R2A2) are not adequately defined or reinforced.
- Continuing Training is less than adequate. Training is discussed under safety issue number 2, below.

For SRNS:

In 2016, SRNS performed a CCA in each facility, followed by a collective Root Cause Analysis of TSR violations. CAPs were developed to address the primary causes and included:

- In November 2017, SRNS completed independent assessments of the flow down of controls from the DSA to ensure the controls are effective. SRNS facility management is implementing actions to address the improvement opportunities identified from the self-assessments.

- In March 2017, SRNS clarified the protocol for verification (e.g., Independent/Second Person Verification) of procedure steps that are used to implement DSA/TSR requirements.
- SRNS will develop and implement a standard protocol for LCO management (entering and exiting LCO mode changes). SRNS is modifying a computer-based LCO management tool acquired by SRR for use within its facilities. This is scheduled to be implemented in 2019. In the interim, SRNS has adopted a standard process (flowsheet) for LCO entry and exit until the new tool is deployed.

2. Less-than-adequate operations training on TSR controls and their bases.

DOE-SR documented concerns with the contractors' training programs (references 1 and 2). Although the training programs were generally compliant with DOE requirements, their implementation was not effective with respect to the TSRs. Previous actions related to training did not provide the required infrastructure and personnel to ensure personnel remain proficient in their knowledge of TSRs and ConOps.

For SRR:

A three-pronged approach is being implemented to drive improvements:

- SRR is developing and updating training materials and equipment that would support an enhanced continuing training program for Operations staff, Engineers, Maintenance and Radiological Control personnel.
- SRR initiated additional continuing training. In February 2018, DOE approved a deviation to the Federal Acquisition Register (FAR) allowing SRR to execute their plan to use overtime to improve the availability of time to train operations shift workers.
- SRR intends to hire additional personnel to expand the current 4-shift staffing to 4.5 shifts. This additional complement will allow continuing training to occur on an increased frequency and without the use of overtime. The hiring and qualification process is expected to be completed in April 2019 and the 4.5-shift implemented in May 2019.

SRNS actions include:

- Developed & implemented training for First Line Managers, Shift Operations Managers (SOM), Operations Managers and Facility Managers to develop working knowledge of Safety Basis documents and their bases. This action was completed in December 2017.
- Incorporated scenario-based exercises to evaluate and improve personnel's working knowledge of safety basis controls. Each facility's Continuing Training Plan has been revised to include periodic safety basis training, including quarterly scenario-based seminars. A detailed guide for safety basis training was improved

and institutionalized in the Site Training Manual. Additional training exercises are planned.

- Review of recent Implementation Verification Reviews to identify lessons learned was to be shared at the upcoming Facility Managers Forum. This action was completed in March 2017.
- In addition to regulatory required training, SRNS currently performs 4 hours of Continuing Training each month for each shift. SRNS is pursuing a contract deviation to train operations shift workers on overtime in a similar fashion pursued by SRR.

DOE-SR has been observing facility training and will continue to monitor improvements as additional training is developed and implemented.

3. Less-than-adequate work authorization processes in implementing TSR controls.

For SRR:

SRR TSR administration procedures were revised to strengthen the role of the Shift Technical Engineer (STE) in support of the SOM when entering and exiting LCOs. Ultimately the decision for entry/exit of an LCO remains with the shift manager, however the institutionalization of the system impact sheet and stronger defined roles and responsibilities for the STE allows conditions where the SOM is not the “first and last line of defense” in ensuring compliance to the safety bases.

Of significance, SRR has instituted the use a safety system impact sheet to support the planning and execution of scheduled work. The system impact sheet documents operational and/or TSR/LCO impacts determined by Engineering and/or Operations during the work package review and approval process. The work package instructions and lockout/tagout instructions directs the SOM to review the impact sheet prior to the release of work in order to understand the operational and/or TSR/LCO impacts and to facilitate identification of the need to execute the appropriate TSR/LCO actions prior to work release.

For SRNS:

As a pilot, SRNS has included specific LCO actions and conditions in Corrective Maintenance work packages. This use of a Safety System Impact Sheet is similar to the SRR program. After implementing for approximately six months, SRNS will assess the value added and evaluate expanding the use of specific LCO actions and conditions to other technical work documents. This evaluation is scheduled to commence in April 2018. DOE-SR has been monitoring initial implementation of the pilot program and providing feedback to the contractors. DOE-SR will also participate in SRNS’s formal evaluation of their pilot program. This pilot represents a change to work planning and authorization to ensure the SOM is not the “first and last line of defense” in maintaining compliance to the safety basis.

4. Ineffective Corrective Action Program.

Following the SRNS Operational Pause in late 2015, DOE-SR recognized inefficiencies with the contractors' oversight and self-evaluation of Integrated Safety Management (ISM) Programs, specifically how the CAS was being implemented. Although contractors had developed a CAS program, the effectiveness of self-identifying issues, reliable metrics to identify trends, and an effective Corrective Action Program needed improvement. To drive improvements with the CAS, DOE-SR placed a high percentage of the fiscal year (FY) 2017 Subjective Fee on improving CAS effectiveness. DOE-SR initiated monthly feedback sessions between the DOE-SR Manager and the Presidents of SRNS and SRR to provide performance feedback to each contractor. This feedback is ultimately used as a factor in determining fee for CAS improvements. DOE-SR recognized some notable improvements to the overall CAS program and its implementation, but opportunities for improvement still exist in the areas of self-assessment, causal analysis, issue management significance determination, and metrics. Specific corrective actions for improving the overall Corrective Action Program are detailed below.

For SRR:

Although the Board's letter did not identify any overall issues or concerns with the SRR Corrective Action Program, DOE-SR and SRR did use this review plus other benchmarking/lessons learned as input to strengthen the SRR CAS program in several areas. SRR issued Manual S13, Procedure 5.8, *Causal Analysis* which provides supplemental causal analysis guidance for the site Corrective Action procedure. A process for grading completed causal analyses was initiated to help foster continuous improvement. The grades for the causal analyses completed each month are trended as part of a new company metric.

For SRNS:

DOE-SR has documented implementation issues with the SRNS CAS concerning timely completion of corrective actions, inadequate closure documentation, and the quality of SRNS Management Review Team reviews. SRNS has developed and implemented a CAP to enhance the Corrective Action Program. These actions are included in the FY 2018 CAS Improvement Plan which is reviewed weekly:

- Manual 2S, 5.2, *Issue Investigation* is being revised to strengthen the Fact-Finding process.
- Revision of Manual 22Q, CAP-1, "Corrective Action" to require Review Board review of issues for appropriate significance category determination and the requirement to identify Causal Analysis Tree codes to enhance the ability to trend lower-level issue causes.
- Issuance of Manual 22Q, CA-1, "Causal Analysis" to provide a substantial rubric for the performance of Root Cause and Apparent Cause Analysis.
- Provide enhanced Causal Analysis training for all Root Cause and Apparent Cause Analysts.

- Establish Qualification Standard for Root Cause and Apparent Root Cause Analysts.
- Implement the Grading of all SRNS Causal Analysis performed and provide specific feedback to the individuals responsible for it.
- Implement Quarterly Feedback Meetings for all qualified Root Cause and Apparent Root Cause Analysts.

REFERENCES:

1. Letter, Craig to MacVean, Subject: Technical Safety Requirements Implementation, (Letter dated, July 24, 2017)
2. Letter, Craig to Foster, Subject: TSR Implementation, (Letter dated, July 24, 2017)
3. SRR Assessment Report, Standardized Accounting and Reporting System Item 2014-CTS-006742, "Recurring DSA/TSR Development and TSR Implementation Issues" (Assessment dated June 11, 2014)
4. Letter, Craig to Johnson, Subject: Department of Energy Concern – Less than Adequate Safety Basis Compliance, (Letter dated, May 3, 2016)
5. Letter, Folk to Foster, Subject: Recent Operational Events, (Letter dated June 1, 2016)

ENCLOSURE 2

(The Enclosure 2 is not available on the web site.
Please contact us at 301-903-8019 if you need a copy.)