



Department of Energy

Washington, DC 20585

November 2, 2018

Mr. Stuart MacVean
President and Chief Executive Officer
Savannah River Nuclear Solutions, LLC
203 Laurens Street, SW
Aiken, South Carolina 29801

NEL-2018-02

Dear Mr. MacVean:

The Office of Enterprise Assessments' Office of Enforcement has completed an evaluation of a process tank anomaly at the Department of Energy's (DOE) Savannah River Site (SRS) that Savannah River Nuclear Solutions, LLC (SRNS) discovered within the H-Canyon facility in November 2017. The tank level anomaly resulted in an HB-Line tank having a higher plutonium gram content than anticipated. SRNS reported this issue into the DOE's Noncompliance Tracking System (NTS) under NTS-EM-SROO-SRNS-HCAN-2018-0006581, *Tank 9.5 Liquid Level Anomaly* dated June 11, 2018, and NTS-EM-SROO-SRNS-HBLINE-2018-0006624, *Positive USQE for PISA PI-2017-0015 - Flush Solution Received in HB-Line Tank JT-71 Contained More Plutonium than Expected* dated July 23, 2018.

The Office of Enforcement conducted a fact finding visit at SRS from July 24 through 25, 2018. The purpose of the fact finding was to gain additional insight into SRNS's evaluation of the anomaly and to learn more about SRNS's nuclear criticality control program. The Office of Enforcement, in coordination with the DOE Office of Environmental Management and the Savannah River Operations Office, is issuing this Enforcement Letter to share the results of our evaluation and to recognize SRNS's safety inquisitiveness, thorough investigation, and timely resolution of the anomaly.

During operations conducted in November 2017, SRNS transferred a solution containing plutonium from H-Canyon to HB-Line. SRNS took samples of the solution at HB-Line before transferring the solution forward. The sample results indicated that plutonium quantities were higher than anticipated at HB-Line. As a result, SRNS stopped all transfers and performed a comprehensive root cause evaluation and extent of condition review. SRNS discovered that a gasket partially blocked the H-Canyon tank liquid level detector reference leg. The blockage created a systematic instrument bias that under indicated the solution volume.

While the plutonium mass in the H-Canyon tank exceeded the applicable single parameter mass limit before the transfer, SRNS determined that a criticality event could not occur based on the amount of plutonium present and tank geometry. This issue did not result in nuclear criticality, any exposures, or a spread of contamination.

The Office of Enforcement has concluded that SRNS accurately characterized the severity of the anomaly, uncovered its root causes and the extent of these conditions, and rigorously implemented corrective actions that should prevent recurrence. SRNS personnel consistently demonstrated a questioning attitude and persistent determination in identifying the source and extent of the problem. SRNS's actions and commitment to facility safety, recurrence prevention, and continuous improvement in nuclear safety performance have been extensive and appropriate. Senior management's attention, focus, and transparency in interactions with DOE during the fact finding visit were commendable.

This letter imposes no requirements on SRNS and no response is required. If you have any questions, please contact me at (301) 903-7707.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin L. Dressman", with a long, sweeping horizontal flourish extending to the right.

Kevin L. Dressman
Acting Director
Office of Enforcement
Office of Enterprise Assessments

cc: Michael Budney, DOE-SRS
Tamara Baldwin, SRNS