

Bruce Hamilton, Acting Chairman  
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**DEFENSE NUCLEAR FACILITIES  
SAFETY BOARD**

Washington, DC 20004-2901



July 23, 2018

The Honorable Lisa E. Gordon-Hagerty  
Administrator  
National Nuclear Security Administration  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0701

Dear Administrator Gordon-Hagerty:

The Defense Nuclear Facilities Safety Board congratulates you on your confirmation as Administrator of the National Nuclear Security Administration. We look forward to a positive and productive working relationship with you and your leadership team as the National Nuclear Security Administration carries out its important and challenging missions.

Congress established the Board in 1988; our mission is to provide independent analysis, advice, and recommendations to inform the Secretary of Energy in providing adequate protection of public health and safety at DOE's defense nuclear facilities. We would like to provide you with a brief summary of items for which we are conducting safety oversight. In particular, the Board draws your attention to the challenges brought on by aging infrastructure across the nuclear weapons complex.

We appreciated the opportunity to introduce ourselves and discuss the Board's work last month, and we look forward to future dialogue.

Yours truly,

A handwritten signature in black ink that reads "Bruce Hamilton". The signature is written in a cursive style.

Bruce Hamilton  
Acting Chairman

Enclosure

c: Mr. Joe Olencz

## **Enclosure**

### **Defense Nuclear Facilities Safety Board's Safety Oversight at the National Nuclear Security Administration's Defense Nuclear Facilities**

#### **Y-12 National Security Complex**

Programmatic work at the Y-12 National Security Complex continues to rely on the 9212 Complex, 9215 Complex, and Building 9204-2E, each of which is contending with recognized structural deficiencies, outmoded systems and equipment, and advanced age.

We have closely evaluated the safety of Y-12's aging defense nuclear facilities, particularly the structures and systems needed to support safe continued operations. The Board transmitted a report to NNSA documenting a review of the structural deficiencies of the 9215 Complex and Building 9204-2E on February 4, 2015. More broadly, our staff evaluated the safety strategy for the overall Y-12 Extended Life Program and identified aspects of the program that could benefit from further development. The Board transmitted those results to NNSA in a letter on May 11, 2017. We will continue our nuclear safety oversight of the aging defense nuclear facilities at Y-12 in the coming years.

#### **Los Alamos National Laboratory**

At Los Alamos National Laboratory, the Plutonium Facility continues to operate with confinement ventilation and fire suppression systems that are not qualified to survive certain seismic accident scenarios.

We have provided ongoing oversight of the state of the Plutonium Facility's structure and safety systems and NNSA's plans to ensure the facility will remain safely operable. For example, the present issues with the facility's fire suppression system were identified in a review that the Board communicated to NNSA in a letter dated May 12, 2016. We advised NNSA to prioritize completing the analyses and testing needed to fully understand the seismic performance of the facility structure in a letter to the Secretary of Energy on December 17, 2014. Also during this fiscal year, our staff is evaluating actions that NNSA is taking to address the problems with the fire suppression system and expects to complete an evaluation of the confinement ventilation system as well as a follow-up review of how NNSA addressed previously identified issues with the electrical system.

Since July 2013, LANL has been working to systematically resume each of the numerous fissile material operations performed in the Plutonium Facility and to address long-standing deficiencies in its nuclear criticality safety program. DOE's February 1, 2017, Annual Metrics Report on Nuclear Criticality Safety Programs noted that LANL's program still does not meet expectations with regard to applicable DOE and industry standards. These negative conclusions were reinforced in August 2017 and again in March 2018 when LANL operators violated criticality safety limits while moving and staging special nuclear materials in the Plutonium Facility, as reported in the weekly activity reports prepared by our resident inspectors at LANL.

An effective nuclear criticality safety program, which includes rigorous conduct of operations, is key to ensuring safe operations at the Plutonium Facility. Our staff is completing a review of LANL's nuclear criticality safety program to independently assess the health of the program and determine the status of LANL initiatives to address the concerns we communicated previously. During this fiscal year, we also plan to review the nuclear safety aspects of the procurement and installation of the gloveboxes needed to provide capabilities transferred from LANL's Chemistry and Metallurgy Research Building to the Plutonium Facility.

LANL's ability to process, store, package, and ship transuranic waste is crucial to sustaining safe operations at the site. The Radioassay and Nondestructive Testing (RANT) facility is the only enclosed facility at LANL capable of preparing transuranic waste for offsite shipment. RANT has remained in cold standby with no radiological material in the facility for more than three years. We will review the safety documentation for resuming operations at RANT as it becomes available and assess the implementation of the safety controls.

### **Pantex Plant**

Nuclear explosive operations at Pantex are performed in bay and cells with structural features that must be monitored for aging phenomena. Additionally, support systems, particularly the fire protection systems, are subject to aging and environmental degradation. We also continue to evaluate several nuclear safety concerns, including the safety bases for nuclear explosive facilities at Pantex.

### **Nevada National Security Site**

At the Nevada National Security Site, upgrades and modifications to degraded fire protection lead-ins and sprinklers are underway at the Device Assembly Facility. In the coming year, we plan to perform a site-wide fire protection program review which will include an assessment of the improvements to the Device Assembly Facility fire suppression system.

### **Maintaining Robust Federal Oversight of Nuclear Safety**

NNSA relies on the knowledge and skill of operational personnel to implement administrative controls and compensatory measures to address vulnerabilities in the physical plant, as well as their ability to respond to unexpected conditions that may arise. Maintaining an adequate complement of trained and qualified facility representatives and safety system oversight engineers has been a persistent challenge for NNSA field offices, as has maintaining the needed cadre of senior technical safety managers.

We will continue to assess the adequacy of NNSA's safety oversight routinely as an integral component of our independent technical reviews of safety at defense nuclear facilities.