Thomas A. Summers, Acting Chairman
Patricia L. Lee

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

Washington, DC 20004-2901

September 30, 2025

The Honorable Brandon Williams
Under Secretary for Nuclear Security
Administrator, National Nuclear Security Administration
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Administrator Williams:

Congratulations on your confirmation as Administrator of the National Nuclear Security Administration (NNSA)! We look forward to a positive and productive working relationship with you and your team as we continue our shared commitment to supporting NNSA in its critical mission to maintain our nation's nuclear deterrent.

Congress established the Defense Nuclear Facilities Safety Board (Board) in 1988 to provide independent analysis, advice, and recommendations to the Secretary of Energy and aid the Secretary in ensuring adequate protection of public health and safety at the Department of Energy's defense nuclear facilities.

On February 14, 2025, the Board sent a letter to the Secretary of Energy highlighting key nuclear safety challenges the Board is currently addressing at defense nuclear facilities across the nuclear security enterprise. The attachment to this letter provides an updated list of safety challenges related to NNSA defense nuclear facilities.

We look forward to meeting you at your earliest opportunity to discuss these safety challenges and to strengthen our engagement on safe implementation of the important NNSA national security mission.

Our point of contact for meeting coordination is our Chief of Staff, Mr. Kyle Johnson, who can be reached at kyle.johnson@dnfsb.gov or 202-701-8964.

Sincerely,

Thomas A. Summers
Acting Chairman

Enclosure

c: The Honorable Chris Wright, Secretary of Energy
Mr. Joe Olencz, Director, Office of the Departmental Representative to the Board

# Enclosure: Safety Issues at National Nuclear Security Administration (NNSA) Defense Nuclear Facilities

## Board Recommendations

### Recommendation 2023-1—Onsite Transportation Safety.

Department of Energy (DOE) sites frequently perform on-site transport of radioactive materials between defense nuclear facilities. Issued in January 2024, this recommendation identified significant safety issues with the Los Alamos National Laboratory's (LANL) transportation safety document, stemming in part from weaknesses in the safe harbors that govern transportation safety document development. The safety issues were particularly concerning given the amount of radioactive material-at-risk, the proximity of the onsite transportation routes to the public, and the nature of several credible accident scenarios. The Board's recommendation is intended to strengthen DOE's guidance related to onsite transportation of nuclear materials and to address deficiencies in LANL's transportation safety document to ensure adequate protection of health and safety.

*Status*

DOE accepted the recommendation and transmitted its implementation plan on October 7, 2024. The first deliverable to the Board was a report on the results of the extent of condition review of onsite transportation safety documents at sites with defense nuclear facilities. The Board received this report on September 15, 2025, and is evaluating its contents.

### Recommendation 2019-2—Safety of the Savannah River Site (SRS) Tritium Facilities.

Several times in recent years, the Board has expressed concerns regarding the safety of the SRS Tritium Facilities, which supply tritium to maintain the nuclear deterrent. The Tritium Facilities lack adequate safety controls to prevent or mitigate certain accident scenarios that could result in high radiological dose consequences to workers. A large-scale accident at the Tritium Facilities could also severely impact its important national security mission. Due to the safety risk associated with the Tritium Facilities, the Board recommended that DOE implement near-term compensatory measures, identify robust long-term safety controls, and enhance the emergency preparedness program.

*Status*

The Board received DOE's May 5, 2025, letter and report, which discuss the status of NNSA's current prioritized efforts to improve the safety posture of the Tritium Facilities, including improvements to the safety basis; actions taken as part of the co-located worker dose reduction strategy; progress on the Tritium Finishing Facility project; and improvements to emergency preparedness. On May 29, 2025, representatives from NNSA's Savannah River Field Office briefed the Board on these prioritized efforts at the Savannah River Tritium Enterprise.

## Other Notable Nuclear Safety Issues

**Los Alamos National Laboratory.**

The Board continues to monitor the evolving safety posture of the Plutonium Facility, currently the only defense nuclear facility capable of producing plutonium pits. NNSA is also planning to use this facility to repackage large amounts of heat source plutonium; analysis indicates the potential for significant offsite dose consequences that cannot be mitigated with existing safety controls, requiring special authorization from NNSA. Ensuring safety at the Plutonium Facility is crucial as it transitions from a research and development mission to large-scale pit production for the nation's nuclear deterrent.

*Status*

The Board continues to place a high priority on LANL, given its important national security missions and proximity to the offsite public. The Board is evaluating a new draft Plutonium Facility safety basis, which increases reliance on computer modeling and fire suppression for certain accidents. The Board visited the laboratory in July 2025 to observe facility conditions and receive briefings from NNSA and laboratory officials on this and other topics. Regarding the expanded operations with heat source plutonium, the Board has advised NNSA to implement additional safety controls and urged better planning to avoid similar situations in the future.

**Nevada National Security Site (NNSS).**

An important national security mission at NNSS involves subcritical experiments, which use special nuclear material and high explosives to support NNSA's stockpile stewardship program. NNSA needs appropriate safety controls to assemble, transport, and execute these important experiments.

*Status*

On July 25, 2024, the Board sent a letter to the Secretary of Energy discussing safety concerns with efforts associated with the Principal Underground Laboratory for Subcritical Experimentation. First, NNSS continues to rely on safety controls that are vulnerable to human error (commonly known as administrative controls) due to delays in designing and procuring a robust transportation container for transporting experimental packages containing nuclear materials and high-explosives. As the work tempo increases and larger quantities of hazardous materials are used, ensuring adequate protection for these packages is becoming more important. Second, the Board identified concerns with the characterization of seismic faults at NNSS and its impact on the design of associated safety controls. NNSA has indicated that funding remains an issue for resolving both issues. Subsequent to the Board's review, NNSA directed the site to stop design work for a fire extinguishing system for the new experimental areas. This represents a significant change to the safety strategy that was made very late in the design and construction process. This change also contradicts NNSA's previous plans to improve fire protection in the existing experimental area.

On August 14, 2024, the Board sent a letter to the Secretary of Energy identifying safety concerns with the installation of an energy storage system using lithium-ion battery technology inside the facility used to assemble subcritical experiments. In its response dated March 14, 2025, DOE acknowledged the unique hazards posed by such systems and endorsed an applicable industry consensus standard. NNSA indicated to the Board that it was examining the impact of this information on the safety of the installed system. The Board and its staff await the results of these analyses.

The Board discussed these issues with NNSA and contractor leadership during a visit to NNSS in August 2025 and noted little progress had been made. The Board continues to track resolution of these safety concerns.

**Pantex Plant (Pantex).**

Recommendation 2019-1, *Uncontrolled Hazard Scenarios and 10 CFR 830 Implementation at the Pantex Plant*, addressed safety issues concerning operations with nuclear explosives that could lead to severe consequences to both the workforce and public. The B61 Hazard Analysis Report (HAR) is the first safety basis document that incorporates safety improvements resulting from Recommendation 2019-1, as well as from other Pantex safety basis enhancement efforts (e.g., the *Pantex Safety Basis Vision* initiative). Following a review of the B61 HAR at Pantex, the Board found that NNSA had addressed many of the safety basis issues outlined in Recommendation 2019-1. However, the Board identified a few open safety issues that require NNSA's further action and consideration as the remaining safety basis documents are developed and revised.

*Status*

On January 30, 2025, the Board sent a letter that documented the results of the B61 HAR review and requested a report by May 30, 2025, on actions taken or planned to address these additional safety concerns. Based in part on the commitment of NNSA to continue to revise the safety basis documents as outlined in its implementation plan and with consideration of the related safety issues outlined in its letter, the Board closed Recommendation 2019-1. The Board is analyzing NNSA's response dated August 5, 2025.

**Y-12 National Security Complex (Y-12).**

Y-12 is the primary location for processing of uranium to support the nation's nuclear deterrent. The Uranium Processing Facility and other new capabilities continue to be delayed; these projects are essential to ceasing programmatic operations in the aged 9212 Complex. The Board remains concerned about nuclear criticality safety and conduct of operations at the site.

*Status*

Y-12 has implemented corrective actions, particularly in response to a significant nuclear criticality safety violation in 2023. However, recent violations have stemmed from poor conduct of operations. Y-12 also has a severe maintenance backlog, impacting the already degraded infrastructure.

**Nuclear Criticality Safety.**

On March 17, 2025, the Board sent the Secretary of Energy a letter and report from a Board review of the nuclear criticality safety programs at LANL, SRS, and Y-12. The Board concluded that DOE's nuclear criticality safety programs require targeted improvements, focusing on mitigating the impact of contractor retention challenges, implementing effective requirements and guidance to ensure reliable control implementation, and maintaining robust feedback mechanisms.

**Emergency Preparedness and Response.**

On May 6, 2025, the Board issued a letter to the Secretary of Energy and a report that summarized the Board's observations from DOE and NNSA emergency exercises conducted over the past three years. Emergency exercises help ensure that emergency response organizations at defense nuclear facilities can appropriately respond and mitigate the safety impacts of incidents involving radiological materials. The Board found common and recurring safety issues in the areas of exercise realism, communications practices, communications and notifications equipment and systems, emergency response by radiological protection personnel, and cross-organizational exercise evaluations.