

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Introduction to the Board and Oversight Activities at Los Alamos National Laboratory (LANL)

Presented to

New Mexico State Legislature's
Radioactive and Hazardous Materials Committee

August 15, 2018



Agenda

- Overview of the Board
- Board Safety Oversight of Los Alamos
- Planned Board Staff Safety Reviews at Los Alamos



Board Overview

- Established by Congress in 1988
- Five Presidentially-appointed, Senate-confirmed members
- Statutory mission:
 - Provide independent analysis, advice, and recommendations to the Secretary of Energy to inform the Secretary, in the role of the Secretary as operator and regulator of the defense nuclear facilities of the Department of Energy, in providing adequate protection of public health and safety at defense nuclear facilities
- The Secretary of Energy determines how best to apply the information provided by the Board

Current Board Members



**Acting Chairman
Bruce Hamilton**



**Board Member
Jessie Hill Roberson**



**Board Member
Daniel J. Santos**



**Board Member
Joyce Connery**



Vacant



Board Overview—Scope of Oversight

Nuclear safety oversight of:

- Complex, high-hazard operations involving nuclear weapons
- Remediation of nuclear wastes and legacy facilities from more than 70 years of DOE defense nuclear operations
- Design and construction of new DOE defense nuclear facilities
- Aging and deteriorating mission critical infrastructure at DOE defense nuclear facilities/sites
- Adequacy of DOE safety standards related to design, construction, operations and decommissioning of defense nuclear facilities

Resident Inspectors perform near-continuous oversight at Hanford, Los Alamos, Pantex, Savannah River Site, and Y-12



Y-12 National Security Complex



Board Overview—Major Statutory Powers

With regard to the design construction, operation, and decommissioning of defense nuclear facilities, the Board:

- Reviews and evaluates the content and implementation of standards
- Analyzes design and construction data
- Reviews facility design and construction

The Board is authorized to:

- Issue formal Recommendations to the Secretary of Energy
- Request information from DOE
- Conduct public or closed hearings and meetings, and subpoena witnesses
- Conduct investigations and special studies

DOE is required by law to grant the Board “ready access to such facilities, personnel, and information as the Board considers necessary to carry out its responsibilities.”



Glovebox Operations at Savannah River Site



Board Overview—Scope of Jurisdiction

The Board is concerned only with facilities operated by DOE that are:

- (1) covered by the Atomic Energy Act;
- (2) have a function related to national defense.

The phrase “defense nuclear facilities” excludes:

- DOE’s nuclear projects that are civilian in purpose
- Commercial nuclear facilities regulated by the Nuclear Regulatory Commission



Pantex Plant



Waste Isolation Pilot Plant



Board Overview—Sites Under Jurisdiction

Hanford – Richland, Washington

Idaho National Laboratory – 45 miles west of Idaho Falls, Idaho

Lawrence Livermore National Laboratory – Livermore, California

Los Alamos National Laboratory – Los Alamos, New Mexico

Nevada National Security Site – 65 miles northwest of Las Vegas, Nevada

Oak Ridge National Laboratory – Oak Ridge, Tennessee

Pantex Plant – 17 miles northeast of Amarillo, Texas

Sandia National Laboratories – Albuquerque, New Mexico

Savannah River Site – Aiken, South Carolina

Waste Isolation Pilot Plant – 26 miles east of Carlsbad, New Mexico

Y-12 National Security Complex – Oak Ridge, Tennessee





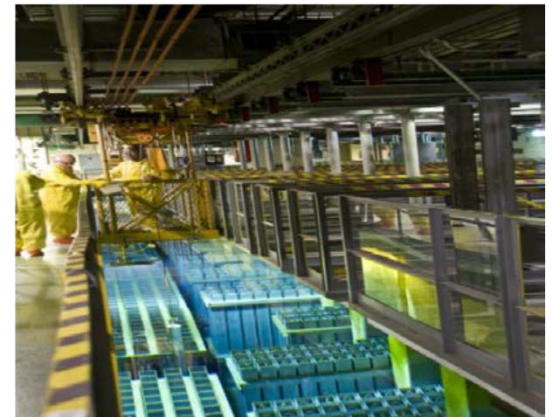
Board Overview—Role of Resident Inspectors

The functions of the Board’s “eyes and ears” include:

- Regularly advising Board management and Board members on the overall health and safety conditions at the site
- Conducting daily on-site reviews and evaluations of design, construction, operation, and decommissioning activities
- Evaluating compliance with DOE operating standards
- Assisting in identifying potential technical staff review activities and developing proposed Board actions
- Acting as a liaison between the Board’s headquarters staff and local DOE and senior contractor management
- Acting as agency spokesperson with state and local government officials, public interest groups, the press, and members of the public



LANL Waste Glovebox Operations



Savannah River Site Spent Fuel Basin



Board Overview—Safety Oversight Highlights

Oversight topics highlighted in March 17, 2017, letter to Secretary of Energy Perry:

- Emergency preparedness and response
- Aging infrastructure
- Design and construction of new defense nuclear facilities
- Safety posture at LANL Plutonium Facility
- Safety of transuranic waste processing and disposal
- Safety at radioactive waste cleanup sites



2000 Cerro Grande Wildland Fire



Transuranic Waste Storage at LANL Area G



Recent Board Activity at Los Alamos

Board Member Visits

- Nov 2016, Mar 2017, June 2017, Feb 2018, July 2018

Board letters to DOE

- May 24, 2018: Fire protection control strategy at Area G
- Nov 9, 2017: Safety basis for the Transuranic Waste Facility
- Oct 11, 2017: Emergency preparedness and response
- July 13, 2017: Outcome of notational vote on proposed final recommendation on emergency preparedness and response
- Jan 3, 2017: Closing Recommendation 2009-2, *LANL Plutonium Facility Seismic Safety*



Operations at Area G



Plutonium Facility Structural Seismic Improvements



Recent Board Activity at Los Alamos

Board letters to DOE (continued)

- Nov 18, 2016: Review of Plutonium Equipment Installation subproject
- Aug 29, 2016: Fire suppression system vulnerabilities at the Plutonium Facility
- Jan 7, 2016: Preliminary observations on emergency preparedness and response
- Sep 30, 2015: Progress on Recommendation 2009-2
- Sep 21, 2015: Technical Report 39, *Opportunities for Risk Reduction at the LANL Plutonium Facility through the Minimization of Material-at-Risk*



Examples of storage containers and conditions for nuclear materials in the Plutonium Facility



Recent Board Public Hearings on Los Alamos

June 7, 2017: Safety Posture of the Plutonium Facility

- Current and future Plutonium Facility nuclear material inventory levels
- Actions to address opportunities to minimize material-at-risk
- Actions to reduce facility risk for long-term operations
- Adequacy and status of safety systems to support current and long term operation

March 22, 2016: Transuranic Waste Operations

- Hazards posed to the public and workers by the containers of waste stored at Area G
- Actions to resolve inadequacies in the safety basis of Los Alamos facilities that manage or store transuranic waste
- Actions to improve transuranic waste management at Los Alamos following the Waste Isolation Pilot Plant accident



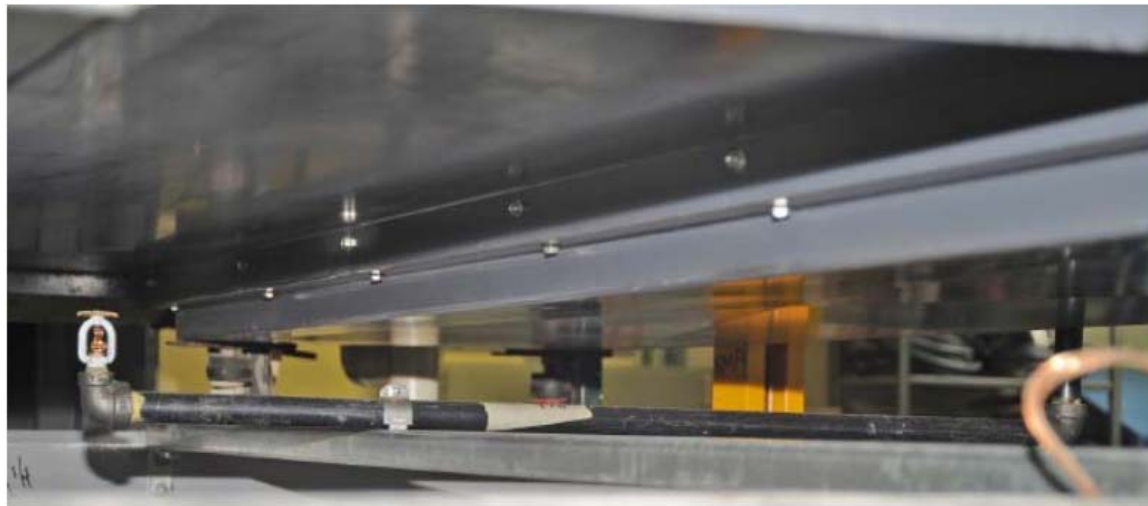
Waste Remediation at Area G



Current Board Focus Areas at Los Alamos

Oversight areas for Los Alamos highlighted in July 23, 2018, letter to the NNSA Administrator:

- Seismic performance of the Plutonium Facility's building structure, ventilation system, and fire suppression systems
- Nuclear criticality safety program deficiencies with DOE and industry standards
- Conduct of operations in the Plutonium Facility
- Safety basis for resuming transuranic waste operations at the Radioassay and Nondestructive Testing (RANT) Shipping Facility



Seismic Vulnerability in Plutonium Facility Fire Suppression System



Questions?

Board communications, Resident Inspector weekly reports, Public Hearing information and other agency information available at www.DNFSB.gov

Defense Nuclear Facilities Safety Board

ABOUT US | DOCUMENTS | BOARD ACTIVITIES & RECOMMENDATIONS | PUBLIC HEARINGS & MEETINGS | DOE SITES | CAREERS | TOPICS

The Defense Nuclear Facilities Safety Board is an independent organization within the executive branch of the United States Government, chartered with the responsibility of providing recommendations and advice to the President and the Secretary of Energy regarding public health and safety issues at Department of Energy defense nuclear facilities.

Upcoming Public Hearings & Meetings

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| | Aug 2018 | August 28, 2018 Public Hearing |
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