

The seal of the Defense Nuclear Facilities Safety Board is a circular emblem. It features a central shield with a bald eagle's head and neck, facing left. The shield is flanked by two olive branches. Above the shield is a banner with the text "DEFENSE NUCLEAR FACILITIES SAFETY BOARD". The outer ring of the seal contains the text "UNITED STATES OF AMERICA" at the top and "DEFENSE NUCLEAR FACILITIES SAFETY BOARD" at the bottom.

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

**Nuclear Safety  
at  
Los Alamos National Laboratory**

*Presented to*

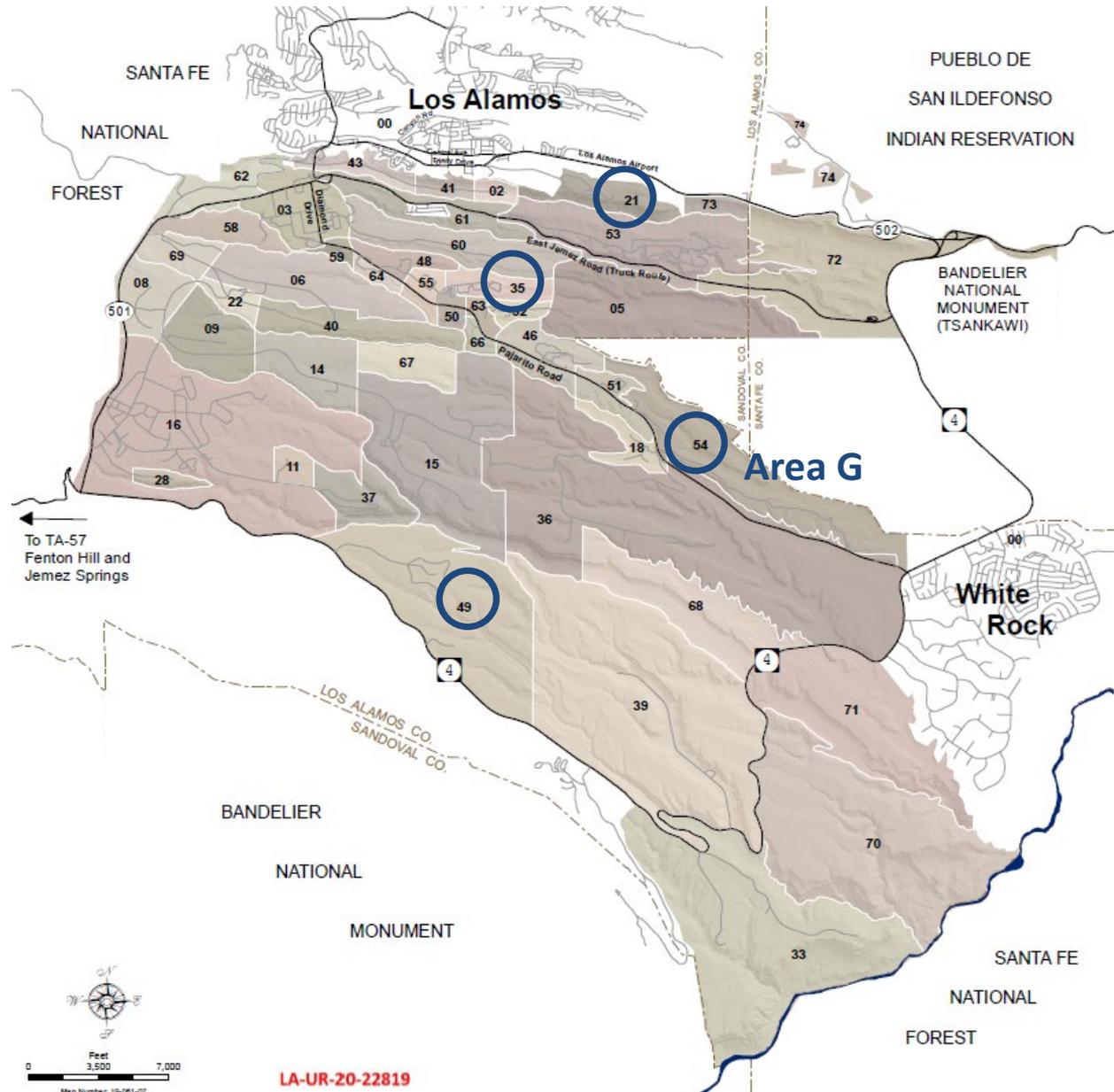
Northern New Mexico Citizens' Advisory Board

*Technical Director, Christopher Roscetti  
November 18, 2020*



# Agenda

- Overview of the Board
- Interface with the Department of Energy (DOE)
- Board Activities of interest at Los Alamos National Laboratory (LANL)
- Recent Complex-Wide Board Activities





## 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, including with respect to the health and safety of employees and contractors at such facilities*
- The Secretary of Energy determines how best to apply the information provided by the Board

### Current Board Members



Acting Chairman  
Thomas A. Summers



Board Member  
Jessie Hill Roberson



Board Member  
Joyce Connery



Vacant



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



Dome 49 at Area G



## Board Overview—Major Statutory Powers

### Statutory safety oversight activities:

- Review and evaluate the content and implementation of standards
- Analyze design and construction data
- Review facility design and construction

### Statutory powers:

- Issue formal recommendations to the Secretary of Energy
- Levy reporting requirements on the Secretary of Energy
- Conduct open or closed hearings and meetings, and subpoena witnesses (if needed)
- Conduct investigations and special studies



Transuranic waste shipment leaving Los Alamos

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



# Interface Between DOE and DNFSB

The interface between DNFSB and DOE must be consistent with the roles assigned by Congress:

- Maintain DOE's responsibility for self-regulating to provide reasonable assurance of adequate protection from radiological hazards; identify and mitigate risks to an acceptable level in operating its Defense Nuclear Facilities; and conduct government oversight of its contractors
- Maintain the Board's independence and access to facilities, personnel, and information to conduct safety oversight at Defense Nuclear Facilities to provide advice and make recommendations to the Secretary

DOE adopted Order 140.1A on June 15, 2020, that governs how it intends to interact with the DNFSB



## Interface Between DNFSB and DOE

The Board is committed to working with DOE to establish the most productive and effective interface possible

October 22, 2020: Working Group Charter Between DOE and DNFSB:

*The Working Group will collaborate to develop a memorandum of understanding between the United States Department of Energy and Defense Nuclear Facilities Safety Board to provide a foundation for mutual communication, transparency and information sharing to promote operational and interface efficiencies.*

October 29, 2020: Government Accountability Office Report entitled, *Nuclear Safety: DOE and the Safety Board Should Collaborate to Develop a Written Agreement to Enhance Oversight*



## Status of Local Interface

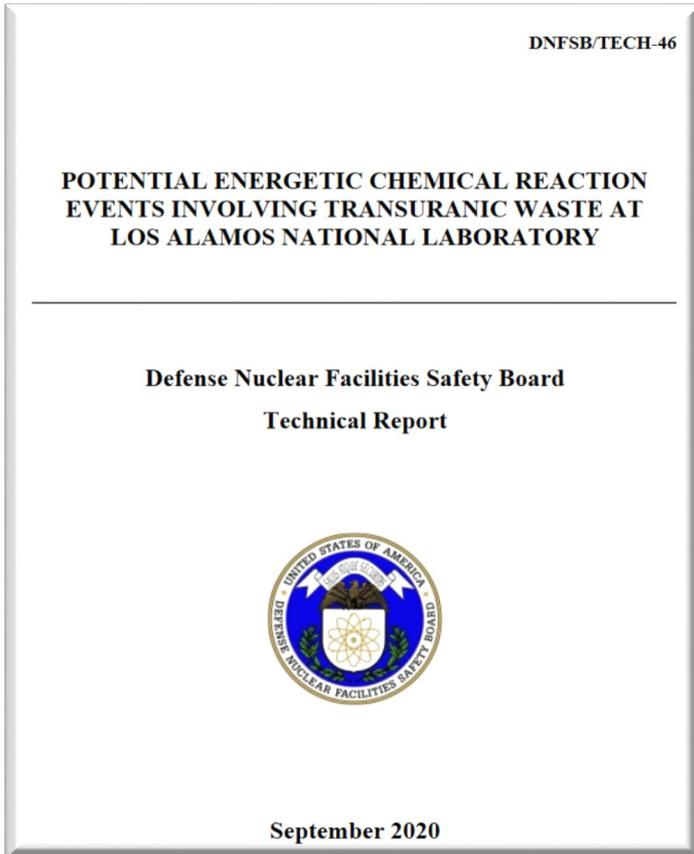
- Interface challenges with the DOE Environmental Management Los Alamos Field Office (EM-LA) necessitated a document request by the Board in a letter dated January 27, 2020
- Subsequent DOE management attention has resolved the challenges
- EM-LA's contactor, N3B, continues to provide access to facilities, personnel, and information



Drum repackaging operations in Dome 231 of Area G



# DNFSB Technical Report 46



- Board issued TECH-46 on September 24, 2020, which highlighted the need for DOE to:
  - Incorporate chemical compatibility evaluations in hazard analyses
  - Defensibly estimate radioactive material releases in accident analyses
  - Incorporate multiple layers of protection
- Board formally requested additional information from the Secretary of Energy within 120 days on whether:
  - Hazards are appropriately controlled
  - Updates to DOE Standard 5506 will address the Board's broader concerns

Impacts all DOE defense nuclear activities at LANL and the broader DOE complex



# Improving the Area G Safety Basis



Inside of Dome 230 at Area G



Aerial View of East End of Area G

## Challenges with Existing Safety Basis

- Control interpretation issues
- Errors in fire protection calculations
- Unjustified dispersion parameters
- High reliance on administrative controls
- Does not support full cleanup mission

EM-LA has sought to modernize the Area G safety basis since 2016



## Continued Risk Reduction at Area G

- About 3,100 transuranic waste containers remain aboveground
- Remediation capabilities need to be restarted so all the inventory can meet the waste acceptance criteria for the Waste Isolation Pilot Plant
- In fiscal year 2020, DOE prioritized shipment of newly generated containers
- N3B continues to develop arrangements to load outbound waste routinely at Triad's indoor RANT Shipping Facility



Proximity of the 2011 Las Conchas Wildland Fire



Mobile Loading Operations



# Flanged Tritium Waste Containers (FTWC)



FTWC shed at Area G



A remote controlled Bobcat is used to practice the movement of a vented FTWC

- The four FTWCs at Area G pose a risk of explosion that increases with time until they are vented and repackaged
- DNFSB staff are overseeing the development and implementation of the safety basis for venting; the rigor of readiness reviews; and are poised to monitor actual venting



## Path Forward for TA-21-257



External (left) and internal (right) views of this former radioactive liquid waste treatment facility

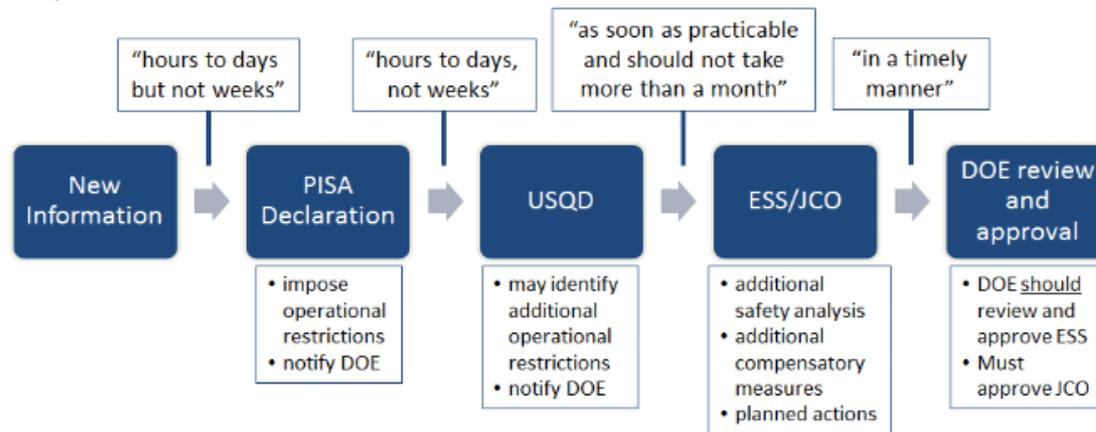
- DNFSB staff are overseeing the process to ensure the facility is demolished in a timely manner that protects public health and safety



# Recent Complex-wide Board Activities

August 7, 2020: DNFSB/TECH-45, *Violations of the Nuclear Safety Basis*

July 10, 2020: Letter regarding DOE's potential inadequacy of the safety analysis (PISA) process



DNFSB Staff Illustration of the DOE Guidance used for the PISA Process

February 21, 2020: Recommendation 2020-1, *Nuclear Safety Requirements*

January 29, 2020: Letter providing specific areas of concern related to DOE Standard 5506, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*.

# Questions?

Board communications, Resident Inspector weekly reports, Public Hearing information and other agency information are available at:

[www.DNFSB.gov](http://www.DNFSB.gov)



The screenshot shows the homepage of the Defense Nuclear Facilities Safety Board. At the top left is the organization's seal, which features an eagle with wings spread, holding a shield with a nuclear symbol, surrounded by the text "UNITED STATES OF AMERICA" and "DEFENSE NUCLEAR FACILITIES SAFETY BOARD". To the right of the seal is the text "Defense Nuclear Facilities Safety Board" and a search bar. Below the header is a navigation menu with the following items: ABOUT US, DOCUMENTS, BOARD ACTIVITIES & RECOMMENDATIONS, PUBLIC HEARINGS & MEETINGS, DOE SITES, CAREERS, and TOPICS. The main content area features a large aerial photograph of a sprawling industrial or government facility with numerous buildings and parking lots, set against a backdrop of mountains under a blue sky with scattered clouds. At the bottom of the page, a blue banner contains the following text: "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."