

Sean Sullivan, Chairman  
Bruce Hamilton, Vice Chairman  
Jessie H. Roberson  
Daniel J. Santos  
Joyce L. Connery

**DEFENSE NUCLEAR FACILITIES  
SAFETY BOARD**

Washington, DC 20004-2901



July 13, 2017

The Honorable James Richard Perry  
Secretary of Energy  
U. S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary Perry:

On March 23, 2017, NNSA Administrator Klotz provided on your behalf written comments on a draft recommendation transmitted by the Defense Nuclear Facilities Safety Board regarding emergency preparedness and response at the Los Alamos National Laboratory. On June 23, 2017, the Board decided not to transmit a final recommendation to you on this matter. We have enclosed the Board's notational vote comments for your information.

We appreciate the Department's perspectives and look forward to continuing to work with you and your staff on the effectiveness of emergency preparedness and response throughout the defense nuclear complex.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean Sullivan".

Sean Sullivan  
Chairman

Enclosure

c: The Honorable Frank G. Klotz  
Mr. Joe Olencz

# Enclosure

~~CUI CONTAINS POTENTIAL RECOMMENDATION INFORMATION (EXEMPTION 3)~~

## AFFIRMATION OF BOARD VOTING RECORD

**SUBJECT: Recommendation 2017-xx, Emergency Preparedness and Response at LANL**

**Doc Control#2017-200-013**

The Board, with Board Member(s) Sean Sullivan *approving*, Board Member(s) Bruce Hamilton, Jessie H. Roberson, Daniel J. Santos, Joyce L. Connery *disapproving*, Board Member(s) none *abstaining*, and Board Member(s) none *recusing*, have voted to disapprove the above document on June 23, 2017.

The votes were recorded as:

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIPATING*	COMMENT	DATE
Sean Sullivan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	06/20/17
Bruce Hamilton	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	06/23/17
Jessie H. Roberson	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	06/22/17
Daniel J. Santos	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	06/22/17
Joyce L. Connery	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	06/22/17

\*Reason for Not Participating:

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Board Members.

  
Assistant Executive Secretary to the Board

Attachments:

1. Voting Summary
2. Board Member Vote Sheets

cc: Board Members  
OGC  
OGM Records Officer  
OTD

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
NOTATIONAL VOTE RESPONSE SHEET**

**FROM: Sean Sullivan**

**SUBJECT: Recommendation 2017-xx, Emergency Preparedness and Response at LANL**

**Doc Control#2017-200-013**

**Approved**   X                        **Disapproved**                             **Abstain**       

**Recusal – Not Participating**       

**COMMENTS: Below**   X     **Attached**                             **None**       

The deficiencies in the emergency management programs at the Los Alamos National Laboratory are cause for significant concern. It is worth noting that the National Nuclear Security Administration and the LANL contractor have established engineering and administrative controls at each defense nuclear facility that are designed to protect the public from any credible accident, whether man-made or the result of a natural hazard. In that sense, the public is adequately protected no matter the state of the emergency management programs. Nevertheless, history has revealed mankind to be fallible in our ability to distinguish between what is credible and what is not. The accident at the Fukushima Daiichi nuclear power plant provides a stark example; the plant was designed to withstand a tsunami, but the magnitude experienced was well beyond that which had previously been considered credible. Thus, the ability to appropriately manage an emergency situation is absolutely necessary to ensure the adequate protection of the public health and safety, even where the first level facility controls are adequate.

      /s/        
**Sean Sullivan**

      6/20/2017        
**Date**

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
NOTATIONAL VOTE RESPONSE SHEET**

**FROM: Bruce Hamilton**

**SUBJECT: Recommendation 2017-xx, Emergency Preparedness and Response at LANL**

**Doc Control#2017-200-013**

Approved \_\_\_\_\_ Disapproved  X  Abstain \_\_\_\_\_

Recusal – Not Participating \_\_\_\_\_

**COMMENTS: Below  X  Attached \_\_\_\_\_ None \_\_\_\_\_**

The Recommendation as proposed finds that, “(1) there are significant weaknesses in federal oversight of LANL’s emergency preparedness and response program; (2) there are significant weaknesses in LANL’s demonstrated emergency response during drills and exercises; (3) there are significant weaknesses in LANL’s site emergency exercise program; and (4) there are significant weaknesses in LANL’s facility-level emergency planning and drill programs.”

While these determinations are subjective, they are indeed a fair representation of the situation that currently exists at the Laboratory. The proposed Recommendation goes on to conclude, however, that “A robust, comprehensive, tested, and sustainable emergency preparedness and response capability is *vital* (emphasis added) to ensure adequate protection of public health and safety during emergencies.” This is an *a priori* standard without basis. While improvements to an emergency preparedness program would be expected to raise performance during an actual emergency, it does not follow that a robust, comprehensive, tested, and sustainable emergency preparedness and response capability is *vital* to adequately protect the public.

The proposed Recommendation’s risk assessment acknowledges its subjectivity where it states, “Detailed data on the probability of failure in emergency management program elements are not available for LANL, nor do effective comparisons exist. Therefore, it is not possible to do a quantitative assessment of the risk of these elements to provide adequate protection of the ... public. A more robust emergency management program would reduce the risk associated with the spectrum of accidents postulated at the laboratory ....” Since there is no quantitative assessment, what we are left with is a subjective evaluation of LANL’s EP&R posture.

An institution’s response to a real emergency will always be a unique and messy event. No two emergencies are alike, and no amount of training can anticipate and prepare for every possible

variation of circumstances. The foundational components of an institution's ability to handle an emergency, therefore, are the basics, such as: sufficient numbers of knowledgeable people, teamwork, an adequate system of communications, a reserve of materials, and the ability to triage and prioritize. Even while acknowledging many shortcomings, LANL has that foundation.

Exercises will always be a poor indication of performance in an actual emergency. The intensity of human reaction to an actual emergency will focus minds in a way that no exercise can approach. Good training can be expected to improve performance in an actual emergency, but it does not follow that suboptimal training will result in an organization's failure to react sufficiently to an actual event.

There is no question that LANL's EP&R program has weaknesses and that actions to improve it are justified. NNSA and LANL are working toward a robust and comprehensive emergency management program that is tested and validated through drills and exercises, with a focus on continuous improvement and long-term program sustainability. This will build in additional safety margin, and it is commendable. The case that the current state of affairs challenges the adequate protection of the public, however, is hard to make in an objective way.

I therefore disapprove.

My disapproval of this proposed Recommendation should in no way reflect negatively on the staff effort involved in preparing the document. While I disapprove of making this Recommendation to the Secretary of Energy, I commend the staff for their fine and thorough work in preparing a quality product.

  
**Bruce Hamilton**

23 JUN 2 2017  
Date

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**  
**NOTATIONAL VOTE RESPONSE SHEET**

**FROM:**       **Jessie H. Roberson**

**SUBJECT: Recommendation 2017-XX, Emergency Preparedness and Response at LANL  
Doc Control#2017-200-013**

Approved\_\_\_\_\_                      Disapproved\_\_X\_\_\_\_                      Abstain\_\_\_\_\_

Recusal – Not Participating\_\_\_\_\_

**COMMENTS:**        Below\_\_X\_\_ Attached\_\_\_\_\_                      None\_\_\_\_\_

The Board issued Recommendation 2014-001, Emergency Preparedness and Response on September 3, 2014. The following was the Board's conclusions in that Recommendation:

**“The Board and DOE oversight entities have identified problems with implementation of emergency preparedness and response requirements at various DOE sites with defense nuclear facilities. The Board has also identified problems with specific emergency preparedness and response requirements. These deficiencies lead to failures to identify and prepare for the suite of plausible emergency scenarios and to demonstrate proficiency in emergency preparedness and response. Such deficiencies can ultimately result in the failure to recognize and respond appropriately to indications of an emergency, as was seen in the recent radioactive material release event at WIPP. Therefore, the Board believes that DOE has not comprehensively and consistently demonstrated its ability to adequately protect workers and the public in the event of an emergency.”**

The Recommendation included two sub-recommendations and sub-recommendation 1 was as follows:

**“To address the deficiencies summarized above, the Board recommends that DOE take the following actions:**

1. In its role as a regulator, by the end of 2016, standardize and improve implementation of its criteria and review approach to confirm that all sites with defense nuclear facilities:
  - a. Have a robust emergency response infrastructure that is survivable, habitable, and maintained to function during emergencies, including severe events that can impact multiple facilities and potentially overwhelm emergency response resources.
  - b. Have a training and drill program that ensures that emergency response personnel are fully competent in accordance with the expectations delineated in DOE's directive and associated guidance.
  - c. Are conducting exercises that fully demonstrate their emergency response is capable of responding to scenarios that challenge existing capability, including their response during severe events.
  - d. Are identifying deficiencies with emergency preparedness and response, conducting causal analysis, developing and implementing effective corrective actions to address these deficiencies, and evaluating the effectiveness of these actions.
  - e. Have an effective Readiness Assurance Program consistent with DOE Order 151.IC, Comprehensive Emergency Management System, Chapter X."

The Board issued Recommendation 2015-1, Emergency Preparedness and Response at the Pantex Plant, on November 24, 2015. The following was the Board's conclusion in that Recommendation:

**"The mission of the Pantex Plant is vital to our nation's defense, and the consequences of a significant accident would be difficult to overcome. A robust, comprehensive, tested, and sustainable emergency preparedness and response capability is vital to ensure the adequate protection of the public health and safety during operational emergencies. Specifically, deficiencies must be addressed in the drill and exercise programs, in demonstrating the capability to provide timely, accurate information to the public regarding off-site radiological consequences, and in the technical planning bases and decision-making tools."**

In Recommendation 2014-1 the Board specifically cited LANL deficiencies in execution of its emergency response program. I believe the deficiencies cited in Recommendation 2014-1 are essentially aligned with those same deficiencies cited in proposed Recommendation 2017-XX and the Board acknowledges progress is occurring, albeit, slowly. I concluded Recommendation 2015-1 presented a unique focus on public notification challenges specific to the circumstances at the Pantex Plant, which was not specifically called out in Recommendation 2014-1.

Therefore, I conclude there is no basis for a unique adequate protection conclusion regarding the Emergency Response and Preparedness Program at LANL as the cited deficiencies were considered in the underlying basis for the same determination in

Recommendation 2014-1. The pace of improvements and progress should be addressed by DOE/NNSA and the Board should use the range of statutory tools available to it to help DOE/NNSA accelerate its Implementation actions in response to Recommendation 2014-1.



**Jessie H. Roberson**



**Date**



**DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
NOTATIONAL VOTE RESPONSE SHEET**

**FROM: Daniel J. Santos**

**SUBJECT: Recommendation 2017-xx, Emergency Preparedness and Response at LANL**

**Doc Control#2017-200-013**

**Approved** \_\_\_\_\_ **Disapproved** **X** \_\_\_\_\_ **Abstain** \_\_\_\_\_

**Recusal – Not Participating** \_\_\_\_\_

**COMMENTS: Below** **X** **Attached** \_\_\_\_\_ **None** \_\_\_\_\_

My own analysis of all sources of information and my own observations regarding emergency preparedness and response at LANL does not lead me to conclude that currently the Department of Energy is not providing adequate protection of public health and safety at LANL. Therefore, a formal recommendation is not warranted at this point in time.

In late 2015, based on input from staff and my own observations, I became concerned that difficulties existed at LANL associated with fundamental aspects of a sound emergency preparedness and response program, such as an effective command and control infrastructure, effective communications of hazard information to workers in affected facilities and first responders, issues with a robust infrastructure for the effective conduct of drills and exercises, and deficiencies with independent oversight. If these items were not addressed, taken together they could have impaired LANL's ability to respond to real events and could have threatened the adequate protection of the public. Therefore, I supported further Board oversight in this area and supported the generation of a draft recommendation to capture the specific areas of concern at LANL to allow me to complete a comprehensive evaluation.

Over the next 18 months, the Board's staff performed focused oversight and observed additional drills and exercises. Based on their input, relevant information from the various evolutions, and my own evaluations of LANL performance in responding to real incidents, I conclude that corrective measures taken at LANL combined with the existing engineered and administrative controls have reduced the risk of LANL responding to an emergency in a manner that would threaten adequate protection of the public.

This doesn't mean that there might not be consequences during a real emergency, especially for those closest to the event or for first responders. However, these consequences can be further

reduced by closing existing gaps in the emergency preparedness and response program at LANL. For example, gaps still remain in various areas such as consistency in emergency preparedness and response program implementation across the various laboratory facilities, drill and exercise program execution, understanding and responding to various protective actions, self-assessments, and improvements in mass notification. Therefore, it is important for LANL to continue to make improvements to their program implementation and to continue to improve and learn from the execution of a robust drill and exercise program. My concern moving forward is the sustainability of the improvement actions taken and changes to the emergency preparedness infrastructure that has been stood up at LANL as it continues to mature.

The Board unanimously approved forwarding a draft recommendation to DOE on the topic of emergency preparedness and response at LANL. I consider that it provides specific and useful information for DOE to consider in their renewed efforts to improve execution of their implementation plans for Recommendation 2014-1 not only at LANL but can also serve as a tool that can be used by other defense nuclear facilities across the complex to complement their improvement efforts.

The nexus between emergency preparedness and response and adequate protection is a dynamic one, especially as the work force changes, the mission requirements change, security posture changes, and as new technologies impact the conduct of preparedness and response to emergencies. Similar to having a culture of safety and security, emergency preparedness and response should be part of the overall culture with emphasis on constant vigilance and demonstrated proficiency. I continue to support the Board's continued oversight efforts in the area of emergency preparedness and response throughout the entire complex.



Daniel J. Santos

6/22/17

Date

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD  
NOTATIONAL VOTE RESPONSE SHEET**

**FROM:** Joyce L. Connery

**SUBJECT:** Recommendation 2017-xx, Emergency Preparedness and Response at LANL

**Doc Control#2017-200-013**

**Approved** \_\_\_\_\_ **Disapproved** X **Abstain** \_\_\_\_\_

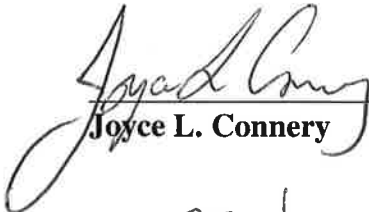
**Recusal – Not Participating** \_\_\_\_\_

**COMMENTS:** Below X Attached \_\_\_\_\_ None \_\_\_\_\_

As noted on my vote for the draft Recommendation, I have expressed several times to Board Members that I feel that the contents of this document should have been a Technical Report attached to a letter on 14-1 and sent prior to the January 1, 2017. The Board, however, voted to have a Recommendation drafted and once that path was taken, there was no impetus to redirect the staff. I do not feel that the deficiencies noted in this Recommendation constitute an additional issue of adequate protection beyond what would be addressed through the proper implementation of Recommendation 14-1, especially the weaknesses enumerated with regard to Federal Oversight. As drafted, this document seeks to address the symptoms associated with oversight challenges, but not the root cause, as Recommendation 14-1 sought to address.

The Board should not feel constrained to issuing Recommendations when other effective tools are available, especially in cases such as this where there is already a Recommendation in place to address identified weaknesses.

I do commend the staff work on this issue, as directed by the Board, and would like to see this document, should the Recommendation fail, be converted into an issue paper for transmittal to the Department. I would like to see this information be made available to other sites for their edification.

  
\_\_\_\_\_  
Joyce L. Connery

22 June 2017  
\_\_\_\_\_  
Date