

ARCHIVE: Doc#2016-065B, Amendment by Board Member Sean Sullivan
to YELLOW FOLDER Doc#2016-065, 2015 Annual Report

Doc#2015-065 2015 Annual Report
YELLOW FOLDER AMENDMENT #2 of 2 BY BOARD MEMBER SULLIVAN

Revise the 2015 Annual Report as necessary to delete all references to a new/open safety issue with the Electrorefining Project. Revisions required are:

- On page 25, in the table “Design and Construction Projects under Review in 2015”, change “Status of Board Review” to read “Ongoing – no current safety issues.
- On page 52, revise “five new issues were identified” to the appropriate number after consideration of all amendments.
- On page 58, delete paragraph 5 in its entirety.
- On page 62, delete the associated entry in the table.
- Revise the table of contents and index as necessary.

Justification

The Board has never declared a safety issue associated with the Electrorefining Project. In our letter dated October 29, 2015 we stated our understanding that certain analyses would be performed in the future in conjunction with a life extension program for Building 9215, and we asked for a schedule of anticipated performance dates. NNSA responded on January 7, 2016 with the requested information and there has been no further action on the matter. Absent a decision by the Board that the NNSA plan is deficient, it is improper to characterize the matter as a new/open safety issue in the report to Congress.

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Project Name	Location	Projected Cost²	Status of Project	Status of Board Review
	Los Alamos, NM			
Transuranic Waste Processing Center Sludge Processing Facility Buildouts Project	Oak Ridge National Laboratory, Oak Ridge, TN	\$171 million	Preliminary design	Ongoing- no current safety issues
K-Area Complex Purification Area Vault Project	Savannah River Site, Aiken, SC	\$27 million	Construction complete	Complete- issued project letter
Saltstone Disposal Unit #6	Savannah River Site, Aiken, SC	\$143 million	Construction	Ongoing- no current safety issues
Salt Waste Processing Facility	Savannah River Site, Aiken, SC	\$2.32 billion	Construction	Ongoing- no current safety issues
Waste Solidification Building	Savannah River Site, Aiken, SC	\$360 million	Construction complete	Complete- issued project letter
Underground Ventilation System	Waste Isolation Pilot Plant, Carlsbad, NM	\$309 million	Conceptual design	Ongoing- no current safety issues
Uranium Processing Facility	Y-12 National Security Complex, Oak Ridge, TN	\$6.3 billion	Conceptual design	Ongoing- open safety issue
Electrorefining Project	Y-12 National Security Complex, Oak Ridge, TN	\$77 million	Preliminary design	Ongoing- open safety issue
Tank Waste Characterization and Staging Capability	Hanford Site, Richland, WA	\$690 million	Conceptual design	Ongoing- no current safety issues

Beginning in 2007, the Board has provided periodic reports to Congress on the status of significant unresolved safety issues concerning the design and construction of DOE's defense nuclear facilities. Beginning with the *24th Annual Report to Congress*, the Board has included the periodic report as an appendix to the Board's Annual Report to Congress (see Appendix C).

Appendix C: Status of Significant Unresolved Issues with DOE's Design and Construction Projects

Since 2007, the Defense Nuclear Facilities Safety Board (Board) has provided periodic reports to Congress presenting the status of significant unresolved safety issues concerning the design and construction of the Department of Energy's (DOE) defense nuclear facilities. This report summarizes the status of significant unresolved safety issues through December 2015.

The phrase "unresolved safety issue" does not mean the Board and DOE disagree on resolution. Some of the issues noted in these reports await final resolution through further development of the facility design. The significant unresolved safety issues discussed herein have been formally communicated to DOE. Lesser issues that can be easily resolved and that have an agreed-upon path forward are excluded from this report. The Board will follow these items as part of its normal design review process.

The Board may identify additional issues during future design reviews. For this reporting period, one issue was resolved, five new issues were identified, one new project has been listed, and the status of one project has significantly changed. Enclosure C-1 of this report identifies significant unresolved safety issues for current design and construction projects. Enclosure C-2 of this report summarizes significant safety issues that have been resolved by DOE on current design and construction projects.

PROJECT WITH THE MOST SIGNIFICANT UNRESOLVED SAFETY ISSUES

Hanford Site's Waste Treatment and Immobilization Plant (WTP).

Since 2002, the Board has identified a number of significant safety issues with the design of WTP. Many of the unresolved safety issues apply to multiple facilities at WTP, with the majority of the issues associated with the Pretreatment (PT) and High-Level Waste (HLW) Facilities. In 2012, DOE restricted engineering, procurement, and construction work at the PT and HLW facilities due to unresolved safety issues and misalignment of the designs and nuclear safety bases. During the last reporting period, on August 19, 2014, DOE authorized the contractor to resume engineering work to finalize the design of the HLW Facility, with limited procurement and construction. However, a considerable amount of work still remains to resolve the open safety issues.

To mitigate the impact of technical and safety issues with the PT Facility, DOE is pursuing a new project—the Low-Activity Waste Pretreatment System (LAWPS)—to pretreat the liquid portion of the Hanford tank waste and directly feed it to the LAW Facility. This approach would enable the LAW Facility to begin vitrifying waste before completion of WTP's PT Facility. In 2015, DOE approved the LAWPS project to move into the preliminary design phase.

During this reporting period, DOE continued work to resolve open safety issues, with a focus on the PT and HLW Facilities. The Board identified two new safety issues associated with

5. Project: Y-12 National Security Complex, Electrorefining Project

New Issue—Analysis of Safety Systems and Components. In an October 29, 2015, letter to DOE, the Board observed that DOE had not fully analyzed some of the Electrorefining (ER) structures, systems, and components (SSCs) to determine whether they can perform their credited safety functions. The enclosure to the letter describes the concerns associated with the following four SSCs.

- *Building 9998 Structure*—Because of the documented deficiencies with the building structure, the ER Project cannot ensure that the new ER SSCs meet the designated Seismic Design Category-2 performance for new SSCs.
- *ER Confinement Approach*—The ER confinement strategy relies on a positive pressure glovebox, which may not provide the necessary confinement of radioactive materials during accident scenarios.
- *Building 9998 Sprinkler System*—The ER Project has not demonstrated adequate performance of the existing sprinkler system for the proposed location for ER.
- *Combustible Glovebox Windows*—The ER Project is planning to use combustible Lexan® windows but does not have a technical evaluation to demonstrate that Lexan® will perform like a noncombustible, less break-resistant material.

In the letter, the Board requested that NNSA provide a schedule within 60 days for when specific analyses for these SSCs will be conducted. NNSA responded on January 7, 2016, with its schedule for the analyses.

NEWLY LISTED PROJECT

1. Project: Hanford Site, Tank Waste Characterization and Staging Capability

Description—The Tank Waste Characterization and Staging (TWCS) capability will be designed to stage, mix, potentially pre-condition, and blend tank waste prior to transfer to the WTP HLW Facility for vitrification. This is intended to allow direct feed of waste to the HLW Facility to begin before the PT Facility is operational. In addition, the TWCS capability could provide the tank farms and WTP with operational flexibility and feed optimization to reduce cost and schedule for WTP operations.

Status of Facility—DOE approved Critical Decision (CD)-0, *Approve Mission Need*, for this project on September 11, 2015.

DECEMBER 2015 REPORT SUMMARY OF SIGNIFICANT UNRESOLVED ISSUES WITH NEW DEFENSE NUCLEAR FACILITIES			
SITE	FACILITY	Critical Decision (CD) Approved	ISSUES
Y-12 National Security Complex	Uranium Processing Facility	CD-1	1. Post-seismic confinement approach— (Dec. 15)
	Metal Purification Process	Electrorefining: CD-1	1. Analysis of safety systems and components— (Dec. 15)

AFFIRMATION OF BOARD VOTING RECORD

SUBJECT: Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report

Doc Control#2016-065B


The Board, with Board Member(s) Joyce L. Connery, Sean Sullivan, Daniel J. Santos, Bruce Hamilton *approving*, Board Member(s) Jessie H. Roberson *disapproving*, Board Member(s) none *abstaining*, and Board Member(s) none *recusing*, have voted to approve the above document on March 25, 2016.

The votes were recorded as:

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIPATING*	COMMENT	DATE
Joyce L. Connery	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	03/23/16
Jessie H. Roberson	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	03/25/16
Sean Sullivan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	03/24/16
Daniel J. Santos	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	03/24/16
Bruce Hamilton	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	03/23/16

*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: Joyce L. Connery

SUBJECT: Amendment by Board Member Sean Sullivan to YELLOW FOLDER
Doc#2016-065, 2015 Annual Report

Doc Control#2016-065B

Approved **Disapproved** **Abstain**

Recusal – Not Participating

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

(via email)
Joyce L. Connery

March 23, 2016
Date

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
NOTATIONAL VOTE RESPONSE SHEET

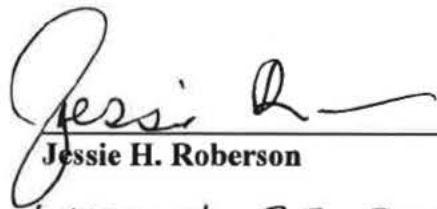
FROM: Jessie H. Roberson

SUBJECT: Amendment by Board Member Sean Sullivan to YELLOW FOLDER
Doc#2016-065, 2015 Annual Report

Doc Control#2016-065B

Approved _____ Disapproved ~~_____~~ Abstain _____
Recusal – Not Participating _____

COMMENTS: Below _____ Attached _____ None ~~_____~~



Jessie H. Roberson
March 25, 2016

Date

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
NOTATIONAL VOTE RESPONSE SHEET

FROM: Sean Sullivan

SUBJECT: Amendment by Board Member Sean Sullivan to YELLOW FOLDER
Doc#2016-065, 2015 Annual Report

Doc Control#2016-065B

Approved **Disapproved** _____ **Abstain** _____

Recusal – Not Participating _____

COMMENTS: **Below** _____ **Attached** _____ **None**



Sean Sullivan

3/24/16

Date

Lotus Smith

From: Daniel J. Santos
Sent: Thursday, March 24, 2016 4:21 PM
To: Shelby Qualls; Lotus Smith
Subject: Re: Notational Vote: Doc#2016-065B, Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report - BLUE FOLDER

Approved without comments.

From: Shelby Qualls
Sent: Wednesday, March 23, 2016 10:14 AM
To: Bruce Hamilton; Daniel J. Santos; Jessie Roberson; Joyce Connery; Sean Sullivan
Cc: Lotus Smith; Shelby Qualls; James Biggins; Katherine Herrera; Nora Khalil
Subject: Notational Vote: Doc#2016-065B, Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report - BLUE FOLDER

This email is an electronic record of Notational Vote. Voting ballot will follow shortly. Also, accepting electronic votes.

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

FROM: Members of the Board
Re: Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report 15-065B

ectors have provided their input.

/ed_____

Not Participating_____

NTS:

None_____

Shelby Qualls
Assistant Executive Secretary

Shelby Qualls

From: Bruce Hamilton
Sent: Wednesday, March 23, 2016 10:34 AM
To: Shelby Qualls
Subject: RE: Notational Vote: Doc#2016-065B, Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report - BLUE FOLDER

I approve.
I have no comments.

Bruce Hamilton
Global cell & text [REDACTED]

From: [Shelby Qualls](#)
Sent: 3/23/2016 8:14
To: [Bruce Hamilton](#); [Daniel J. Santos](#); [Jessie Roberson](#); [Joyce Connery](#); [Sean Sullivan](#)
Cc: [Lotus Smith](#); [Shelby Qualls](#); [James Biggins](#); [Katherine Herrera](#); [Nora Khalil](#)
Subject: Notational Vote: Doc#2016-065B, Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report - BLUE FOLDER

This email is an electronic record of Notational Vote. Voting ballot will follow shortly. Also, accepting electronic votes.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD NOTATIONAL VOTE RESPONSE SHEET

FROM: Members of the Board
SUBJECT: Amendment by Board Member Sean Sullivan to YELLOW FOLDER Doc#2016-065, 2015 Annual Report

DOC# 2015-065B

Office Directors have provided their input.

Approved _____
Disapproved _____
Abstain _____
Recusal – Not Participating _____

COMMENTS:

Below _____
Attached _____
None _____

Shelby Qualls
Assistant Executive Secretary