



**Department of Energy**  
**Under Secretary for Nuclear Security**  
**Administrator, National Nuclear Security Administration**  
**Washington, DC 20585**



December 16, 2020

The Honorable Thomas A. Summers  
Acting Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW, Suite 700  
Washington, DC 20004

Dear Acting Chairman Summers:

On August 6, 2020, the Defense Nuclear Facilities Safety Board (the Board) issued a letter to the Department of Energy (DOE), noting deficiencies that were observed during High Pressure Fire Loop (HPFL) Lead-in replacement work performed at the 12-96 nuclear explosive cell at the Pantex Plant. While the Staff report noted improvements in quality assurance implementation during the 12-96 HPFL Lead-in work, it identified deficiencies in safety-related control identification and the associated Commercial Grade Dedication (CGD), Systems Requirements Documents, and Quality Assurance implementation.

The National Nuclear Security Administration (NNSA) Production Office agrees with the Board's Staff Report and has developed an action plan to address the concerns. The enclosed plan identifies 21 actions categorized by focus area to yield programmatic, systemic, and tactical improvements.

If you have any questions, please contact Mr. Geoffrey L. Beausoleil at (865) 576-0752.

Sincerely,

A handwritten signature in cursive script that reads "William A. Bookless".

William A. Bookless  
Acting Under Secretary for Nuclear Security  
and Administrator, NNSA

Enclosure





P.O. Box 30020      Office: 806.573.6225  
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September 16, 2020

Mr. Carlos R. Alvarado  
Acting Deputy Manager  
NNSA Production Office  
Post Office Box 30030  
Amarillo, Texas 79120-0030

Dear Mr. Alvarado:

**Contract DE-NA0001942, Transmittal letter and request for a formal Consolidated Nuclear Security, LLC response to the Defense Nuclear Facilities Safety Board staff report on the quality assurance of structural repairs associated with high-pressure fire loop lead-in replacements at the Pantex Plant in nuclear explosive cells**

*Reference: Letter from Carlos R. Alvarado to Todd A. Ailes, "Transmittal letter and request for a formal Consolidated Nuclear Security, LLC response to the Defense Nuclear Facilities Safety Board staff report on the quality assurance of structural repairs associated with high-pressure fire loop lead-in replacements at the Pantex Plant in nuclear explosive cells," dated August 17, 2020*

Consolidated Nuclear Security, LLC (CNS) appreciates the recognition by the Defense Nuclear Facilities Safety Board (DNFSB) for the marked improvements made to date on the quality assurance of structural repairs associated with High-Pressure Fire Loop Lead-in Replacement at Pantex's nuclear explosive cells. CNS further appreciates the recommendations by the Board related to future improvements needed for correcting remaining deficiencies related to the identification and control of safety basis and construction quality assurance requirements.

The specific actions associated with this response are summarized in Table A and are grouped into programmatic improvements followed by tactical improvements. Based on the Board's focus areas, the topics covered in each category are system requirements document improvements, commercial grade dedication document improvements, and other quality assurance improvements. All actions summarized in the table will be managed within a Problem Evaluation Request (PER-2020-0401) with the action owner, closure date, and evidence.

CNS is nearing completion for issuing an enterprise (Pantex and Y-12) procedure, E-PROC-3034 *System Requirements Document (SRD)*. Together with other improvements, the procedure will incorporate topical Board recommendations as listed in Table A. Another initiative that will complement the SRD is the July 1, 2020, issuance of E-PROC-3061 *Configuration Management (CM) Grading and Requirements Identification*. Grading Worksheets (GWS) are required for every structure, system, and component within the CM program. The intent of the grading process is to provide configuration information containing greater fidelity of

This document has been reviewed by a CNS Dual Authority DC/RO and confirmed to be UNCLASSIFIED and contains no UCNI.

Name: Stan Stambaugh  
Date: 09/16/2020

CNS eDC/RO ID: 238600

Mr. Carlos Alvarado  
Page 2  
September 16, 2020

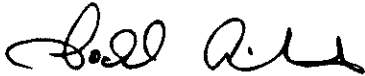
system components and the functions and requirements that provide a safety or other mission essential function. The grading process includes defining structure, system, and component boundaries for which the applicable configuration information applies. GWS will be prepared for each project and will serve as input to the SRD.

CNS is also working a strategic initiative to implement electronic requirements management to future projects to better ensure requirements completeness, traceability, and management over the life of a project and into operations. The vision is to invert the model from being document-centric to information-centric where all requirements are entered, developed, linked, and change managed in a system designed specifically for requirements management. Reference documents would be produced as standard reports from the database whenever needed. This future state also envisions a single group developing functional and operational requirements. SRDs and other project requirement documents would use this information system to better assure continuity and consistency in document quality following the new CNS enterprise strategy E-SD-2043 *Requirements Engineering and Management Plan*.

CNS is confident that the attached actions will eliminate the remaining deficiencies related to safety basis controls, and quality assurance requirements commensurate with a project's importance to quality and safety.

If you have any questions or concerns, please contact me at 806.573.6225 or Steve Campbell at 806.573.5637.

Sincerely yours,



Todd A. Ailes  
Vice President and Site Manager, Pantex

TAA:alm

Enclosure: As stated

Mr. Carlos Alvarado  
Page 3

September 16, 2020

c/enc: G. Beausoleil  
S. G. Campbell  
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Enclosure  
 Letter, T. A. Ailes to C. A. Alvarado  
 September 16, 2020

**Table A: Response Actions to DNFSB Staff Report**

| Action #  | Action Description   | Owner                       | Due Date |
|---|--|-----------------------------|----------|
| <b>Programmatic System Requirements Document Improvements</b> |  |                             |          |
| PER-2020-0401.1   | Issue E-PROC-3034 <i>System Requirements Document (SRD)</i>  | B. Walker                   | 12/11/20 |
| PER-2020-0401.1.1   | Include requirement to list the structures, systems, and components (SSCs) that are safety related (safety class and safety significant) in E-PROC-3034  | B. Walker                   | 12/11/20 |
| PER-2020-0401.1.2   | Include requirement for review/sign-off by Safety Analysis Engineering (SAE), including original issue and each revision, in E-PROC-3034   | B. Walker                   | 12/11/20 |
| PER-2020-0401.1.3   | Include language to clarify differences between the SRD & Functional & Operational Requirements in E-PROC-3034   | B. Walker                   | 12/11/20 |
| PER-2020-0401.1.4   | Include template changes to improve consistency in E-PROC-3034   | B. Walker                   | 12/11/20 |
| PER-2020-0401.2   | Revise Project Engineering Manual MNL-352199, Chapter 5, to reference E-PROC-3034  | M. Sitsch                   | 12/17/20 |
| PER-2020-0401.3   | Issue E-PROC-3061 <i>Configuration Management (CM) Grading and Requirements Identification</i> that requires a Grading Worksheet (GWS) that includes grades and boundaries for all SSCs under Configuration Management for a given project (Action completed but not closed)   | B. Walker                   | 10/16/20 |
| <b>Programmatic Commercial Grade Dedication Improvements</b>  |  |                             |          |
| PER-2020-0401.4   | Revise the Commercial Grade Dedication (CGD) Plan form (UCN-22294) to identify the SSC Category in Section 3 (Action completed but not closed)   | D. Peterson                 | 10/16/20 |
| PER-2020-0401.5   | Revise the CGD Plan for Reinforcing Splices (CGD-20-081) to include certified material test reports, heat lot reports, or other methods of traceability (Action completed but not closed)  | D. Peterson                 | 10/16/20 |
| PER-2020-0401.6   | Perform Engineering Evaluation (EE-20-022) to determine required constituent characteristics and documentation for existing facilities with small repairs. Revise the CGD Plan for Reinforced Concrete (CGD-20-001) to include specifying material critical characteristics for concrete constituents (aggregate, admixtures, and water) during dedication to assure adequate strength and durability. | B. Griffith/<br>D. Peterson | 11/19/20 |
| PER-2020-0401.7   | Issue Engineering Evaluation (EE-20-020) to justify the use of Type 1 Mechanical Splices per ACI 349-13  | M. Brandt                   | 11/19/20 |
| PER-2020-0401.8   | Revise the applicable CGD plan and technical specifications to include the requirement for National Ready Mix Concrete Association (NRMCA) certification. (Concrete supplier   | D. Peterson                 | 11/19/20 |

Enclosure  
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 September 16, 2020

**Table A: Response Actions to DNFSB Staff Report**

| Action #  | Action Description   | Owner     | Due Date |
|---|--|-----------|----------|
|   | Golden Spread has obtained an NRMCA "Certificate of Conformance for Concrete Production Facilities" for the Pantex Plant)  |           |          |
| <b>Programmatic Quality Assurance Improvements</b>      |  |           |          |
| PER-2020-0401.9   | Modify the language in the Division 1 Specification 1400, <i>Quality Assurance</i> to include the appropriate level of rigor to be required for nuclear safety-related, commercial grade dedication and commercial construction based on Engineering documents (SRD, Drawings, etc.). The Division 1 Specification 1400 and other procurement documents will communicate clear expectations for items and services, hold points or other quality controls to appropriately address requirements provided to the contractor | L. Baldy  | 11/19/20 |
| PER-2020-0401.10  | Revise the Architect/Engineer Design Statement Of Work template to list the structures, systems, and components (SSCs) that are safety related (safety class and safety significant) or to reference the SRD for the listing   | M. Sitsch | 11/19/20 |
| <b>Tactical Improvements Bay/Cell Project Documents</b> |  |           |          |
| PER-2020-0401.11  | Develop overarching SRDs in accordance with E-PROC-3034 for Fire Detection System (FDS), High Pressure Fire Loop (HPFL) and Radiation Alarm Monitoring System (RAMS) to cover Bay/Cell modifications   | M. Sitsch | 12/17/20 |
| PER-2020-0401.12  | Develop overarching Grading Worksheets (GWS) in accordance with E-PROC-3061 for FDS, HPFL and RAMS to cover Bay/Cell modifications   | M. Sitsch | 11/19/20 |
| PER-2020-0401.13  | Revise existing Bay/Cell design outputs (drawings and specifications) as needed to reflect changes from the CGD revisions and the overarching SRD creation (when available). This Action may result in additional sub-actions  | M. Sitsch | 3/30/21  |
| PER-2020-0401.14  | Modify the language in Division 1 Specification 1400, <i>Quality Assurance</i> for the Bay/Cell Projects to include the appropriate level of rigor to be required for nuclear safety-related items, based on Engineering documents (SRD, Drawings, etc.)   | L. Baldy  | 11/19/20 |
| PER-2020-0401.15  | Publish a Project Quality Assurance Plan for the Bay/Cell Project  | L. Baldy  | 11/19/20 |
| <b>Additional Tactical Improvements</b>                 |  |           |          |
| PER-2020-0401.16  | Work Planning Improvement (Board reference to interference with grade beam) is underway with 2 ongoing PERs (PER-2020-0321 and PER-2020-0344). Mission Engineering has combined the two PERs and is leading a Blue Dragon Causal Analysis to identify  | C. Howard | 3/30/21  |

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September 16, 2020

**Table A: Response Actions to DNFSB Staff Report**

| Action #         | Action Description   | Owner     | Due Date |
|------------------|--|-----------|----------|
|                  | causes, determine corrective actions with a goal to prevent or mitigate future same – similar events   |           |          |
| PER-2020-0401.17 | Review existing SRDs (and other Project documentation) for ongoing/upcoming projects to determine if any safety related (safety class and safety significant) SSCs are not addressed in the project documentation. Subsequent Actions may be required if gaps are identified | M. Sitsch | 12/17/20 |