



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



April 12, 2024

Dr. James S. Peery
Laboratories Director
National Technology and Engineering Solutions of Sandia, LLC
Post Office Box 5800, MS-0101
Albuquerque, New Mexico 87185

Dear Dr. Peery:

The Office of Enterprise Assessments' Office of Enforcement has completed its investigation into the facts and circumstances associated with a March 29, 2023, fingertip amputation event at the Sandia National Laboratories Weapons Evaluation Test Laboratory located at Department of Energy's National Nuclear Security Administration (DOE/NNSA) Pantex Plant. National Technology and Engineering Solutions of Sandia, LLC (NTESS) documented this event in DOE's Noncompliance Tracking System under report NTS-NA-SFO-NTESS-7000-2023-0010651, dated June 1, 2023.

The event occurred as a worker was assisting three co-workers in setting up a QU3500 Temperature Chamber Test Stand (chamber) for thermal testing when their right middle finger was caught in a pinch point, resulting in a severe injury. The four workers were manually aligning the large 750-pound chamber cover after it had been lowered using a hoist. The worker was using their right middle finger to check if the cover was horizontally aligned with the chamber when the cover fell into place, pinching their finger. The worker sustained a fingertip amputation (approximately ¼ inch of soft tissue) and crush injuries with bone displacement and fracture. The worker underwent surgery, including a skin graft, which resulted in 46 days away from work.

The event revealed deficiencies in NTESS's implementation of procedures for work planning and control (including job hazard analysis, hierarchy of controls, and equipment design/review process). The Office of Enforcement concluded that NTESS's investigation into the event was of sufficient scope and depth, and the associated causal analysis and corrective actions appear appropriate to address the causes of the event and should prevent recurrence.

In accordance with 10 C.F.R. § 851.41, *Settlement*, the Office of Enforcement and the DOE/NNSA have elected to resolve any potential noncompliances with requirements enforceable under 10 C.F.R. Part 851, *Worker Safety and Health Program*, through execution of a Consent Order. In deciding to enter into this Consent Order, DOE/NNSA and the Office of Enforcement placed considerable weight on NTESS's post-event response, which included fabrication and installation of an engineering control, a comprehensive extent of conditions review and effective corrective actions.



DOE/NNSA and the Office of Enforcement reserve the right to re-open this investigation if DOE later becomes aware that NTESS provided any false or materially inaccurate information. Further, if there is a recurrence of worker safety and health deficiencies similar to those identified in this Consent Order, or a failure to comply with the terms and conditions prescribed in the Consent Order (or other related actions that NTESS subsequently determines to be necessary) to prevent recurrence of the identified issues, then the Office of Enforcement may pursue additional enforcement activity. The Office of Enforcement, DOE/NNSA's Office of Environment, Safety and Health, and the Sandia Field Office will continue to closely monitor NTESS's implementation of worker safety and health requirements until the issues associated with this Consent Order are fully resolved.

Enclosed please find the Consent Order for your signature. Within 1 week from the date of receipt, sign and return to the Consent Order to the Office of Enforcement. Please follow all instructions specified in the enclosure and keep a copy for your records. By signing this Consent Order, you agree to comply with all of the terms, including payment of the monetary remedy, specified in section IV of the Consent Order and in the manner prescribed therein.

If you have any questions concerning this Consent Order, please contact the Office of Enforcement at 301-903-7707, or your staff may contact Ms. Shannon Holman, Director, Office of Worker Safety and Health Enforcement, at 301-903-0100.

Sincerely,



Jill Hruby
Under Secretary for Nuclear Security
Administrator, NNSA



Anthony C. Pierpoint
Director
Office of Enforcement
Office of Enterprise Assessments

Enclosures: Consent Order (WCO-2024-01)
Electronic Funds Transfer Instructions

cc: Daryl Hauck, NA-SN
Randy Castillo, National Technology and
Engineering Solutions of Sandia, LLC

On July 26, 2023, the DOE Office of Enforcement notified NTESS of its decision to investigate the facts and circumstances associated with potential deficiencies in the implementation of NTESS's worker safety and health program (WSHP). The Office of Enforcement conducted an onsite investigation October 2 through 5, 2023.

In an August 14, 2023, letter to the Office of Enforcement, NTESS requested a Consent Order to settle this matter under investigation. The settlement request outlined actions to prevent re-occurrence, including:

- Fabrication and installation of an engineering control on the corners of the chamber cover to properly align the cover.
- Review and revision of hazard analysis, material handling processes, and pre-job briefing requirements.
- Performance improvement initiatives in the areas of work planning and control, leadership engagement and safety and health programs.

NTESS's causal analysis and corrective action plan (CAP), *High-Complexity Event: Occurrence Causal Analysis Report Thermal Chamber Cover Pinched Worker's Finger, Resulting in a Significant Injury*, dated May 25, 2023, identified eight causes of the event and an extent-of-condition review. NTESS's corrective action plan identified 13 corrective actions to prevent recurrence of this event and address the conditions found in the extent-of-condition review. The Office of Enforcement found NTESS's causal analysis to be comprehensive and appropriate, and the corrective actions appear to appropriately address the causes of the event and the issues identified in the extent-of-condition review. On November 9, 2023, NTESS completed all of the corrective actions except for an effectiveness review of the corrective actions. However, the Office of Enforcement's investigation identified additional concerns regarding NTESS's implementation of the WSHP requirements, specifically:

- The NTESS WSHP did not adequately address fire protection/emergency response functional area program implementing requirements for operations conducted in the WETL facility. Specifically, the existing *Memorandum of Agreement Between DOE/NNSA Production Office – Pantex and DOE/NNSA Sandia Field Office for the Operation of the Weapons Evaluation Test Laboratory (MOA-WETL)* [approved in March of 2020] is not referenced for WETL operations in the NTESS WSHP fire protection/emergency response functional area. Furthermore, there are inconsistencies between NTESS requirements and the Pantex Plant management and operating (M&O) contractor's fire protection/emergency response procedures. For example, the *MOA-WETL* states that "NTESS personnel shall comply with the Pantex Fire Protection Program Manual (PFPP Manual)." The PFPP Manual does not permit first aid kits in facilities and requires workers with first aid injuries to report to the Pantex Occupational Medicine Clinic. However, NTESS allows work organizations to order and use first aid kits for their locations. These inconsistencies may impact the effectiveness of emergency response at the WETL facility.
- NTESS relied on institutional knowledge of workers rather than written processes that define clear roles and responsibilities related to the WETL facility and operations. Consequently, safety verification processes are not consistently administered at all organizational

levels. For example, the Pantex Plant M&O contractor conducts annual inspections of the WETL facility overhead cranes to check for deterioration, wear, or malfunction. However, the Pantex Plant M&O contractor and NTESS have different approaches to crane inspection. The Pantex M&O contractor views the crane as a system, which includes lifting devices such as slings, ropes, and fasteners, and inspects the crane and lifting devices together. However, NTESS does not view the crane as a system and inspects lifting devices separately, before use. NTESS takes any lifting devices that are in a degraded condition out of service and replaces them but does not notify the Pantex M&O contractor. These procedural differences may lead to confusion and inconsistency in crane maintenance.

- NTESS did not define formal training requirements for WETL technicians in the WETL *B61-3/4/7/11 System Test Equipment Qualification Requirements*. For example, training requirements for a crane operator or rigger are not defined. As a result, the crane operator on the day of the event had not completed required initial crane operator certification. Instead, the crane operator had completed Pantex Plant refresher training but was not initially certified. WETL line management assumed the crane operator was certified but never validated the training.
- NTESS did not review and analyze the emergency response actions for the event in their causal analysis. Additionally, NTESS did not require any members of the causal analysis team to visit the event scene and NTESS did not include all of the workers involved in the event in the causal analysis process. As a result, there was a missed opportunity to correct a factual inaccuracy in the event emergency response timeline documented in the NTESS fact finding report.
- NTESS did not submit the initial report into DOE's Computerized Accident/Incident Reporting System (CAIRS) database in a timely manner. Specifically, NTESS submitted the initial CAIRS report on April 27, 2023. The report should have been submitted into CAIRS by April 15, 2023, as required by DOE Order 231.1B, Chg. 1, *Environment, Safety and Health Reporting*. Furthermore, there was an inaccurate representation of the injury type on the initial and on subsequent reports. Specifically, the worker's injuries were categorized as "[o]ther traumatic injuries to muscles, tendons, ligaments, joints, etc." rather than being categorized as an amputation. This mis-categorization appears to be related to a lack of adequate information flow between occupational medicine staff and personnel entering data into the CAIRS database.

III

Pursuant to 10 C.F.R. § 851.41, at any time during enforcement proceedings, DOE may resolve any or all outstanding issues with a Consent Order if the settlement is consistent with the 10 C.F.R. Part 851, *Worker Safety and Health Program*.

To resolve potential noncompliances of worker safety and health requirements and in consideration of NTESS's investigation, causal analyses, and associated corrective actions taken since the submission of the NTS report referenced above, DOE/NNSA has elected to enter into settlement. DOE/NNSA and NTESS have reached agreement to resolve this matter through execution of this Consent Order.

IV

Accordingly, the terms of this Consent Order are as follows:

In consideration of the mutual agreements set forth in this section, the sufficiency and adequacy of which are acknowledged by DOE/NNSA and NTESS (hereinafter the "Parties"), the following terms represent agreement by the authorized representatives of the Parties to resolve by settlement the potential noncompliances at the Sandia National Laboratories, in lieu of an enforcement action that DOE/NNSA may issue pursuant to 10 C.F.R. § 851.42.

I. NTESS shall complete the following corrective actions by April 30, 2025:

- a. Conduct an effectiveness review upon completion of corrective actions detailed in the Noncompliance Tracking System report number NTS-NA-SFO-NTESS-7000-2023-0010651 and the *High-Complexity Event: Occurrence Causal Analysis Report Thermal Chamber Cover Pinched Worker's Finger, Resulting in a Significant Injury Corrective Action Plan*. Provide the Office of Enforcement, NNSA Associate Administrator for Environment, Safety, and Health (NA-ESH), and Sandia Field Office (SFO) with a copy of the results of the effectiveness review within 30 calendar days of completion.
- b. Revise the NTESS WSHP to reference memorandums of agreement and implementing program documents regarding NTESS workers performing work at WETL and at non-Sandia controlled premises at other DOE sites.
- c. Clarify NTESS roles and responsibilities in a written procedure for requirements outlined in the *Memorandum of Agreement Between DOE/NNSA Production Office – Pantex and DOE/NNSA Sandia Field Office for the Operation of the Weapons Evaluation Test Laboratory*, Attachment 1, *Requirements to be met by NTESS*, Attachment 2, *Services to be Provided by the Pantex M&O Contractor* (e.g., applicable NTESS actions in response to provided services), and Attachment 3, *Services to be Provided under an Integrated Contractor Order*.
- d. Assess WETL's compliance with the Pantex M&O contractor's applicable requirements for fire protection/emergency planning, preparedness and response, required training such as *General Employee Training*, and NTESS requirements (such as availability of first aid kits) to identify and resolve gaps and conflicts.
- e. Formalize worker qualification and line management verification of technicians performing tasks in accordance with SP-9, Attachment II - *B61-3/4/7/11 System Test Equipment Qualification Requirements*.
- f. Formalize implementing procedures for safety significant and high complexity accident/incident investigations conducted at off-site locations to determine if circumstances require members of the fact finding/causal analysis investigation teams, as applicable, to travel to accident/incident location(s) to ensure operational context is considered during these processes.

- g. Provide quarterly written updates to the Office of Enforcement, NA-ESH, and SFO on the status of corrective actions and associated milestones for items 1.a., 1.b., 1.c., 1.d., 1.e., and 1.f., above until said actions are completed.
 - h. Notify the Office of Enforcement, NA-ESH, and SFO upon completion of all actions specified in items 1.a., 1.b., 1.c., 1.d., 1.e., and 1.f., above, within 30 calendar days of completion.
- 2. NTESS shall pay the amount of \$59,395.00 reflecting an agreed upon monetary remedy in lieu of the issuance of an enforcement action with the proposed imposition of a civil penalty pursuant to 10 C.F.R. § 851.43.
- 3. NTESS agrees to return a signed copy of this Consent Order, within one week from the date of receipt, via email, to the Director, Office of Enforcement at enforcementdocketclerk@hq.doe.gov.
- 4. The effective date of this Consent Order shall be the date upon which NTESS signs this Consent Order.
- 5. NTESS shall remit the monetary remedy of \$59,395.00 by Electronic Funds Transfer (EFT) or ACH Transfer to the Department of Energy through the U.S. Treasury within 30 calendar days after the effective date of this Consent Order. The Office of Enforcement must be copied at enforcementdocketclerk@hq.doe.gov when the electronic payment is submitted to the U.S. Treasury. Instructions for sending payments in U.S. dollars via EFT or ACH Transfer are enclosed.
- 6. This Consent Order shall constitute a full and final settlement of the potential noncompliances identified in the referenced NTS reports, subject to the following: (a) NTESS's payment of the monetary remedy in accordance with item 5 above; and (b) NTESS's completion of all actions set forth in item 1, above, to the satisfaction of DOE/NNSA.
- 7. Neither the monetary remedy nor any costs, as defined in the Federal Acquisition Regulation, 48 C.F.R. § 31.205-47, incurred by, for, or on behalf of NTESS relating to coordination and cooperation with DOE concerning the investigation of matters covered by this Consent Order, shall be considered allowable costs under the Contract. However, costs incurred by, for, or on behalf of NTESS relating to the development and implementation of corrective actions, including costs associated with the effectiveness review required under item 1 above, may be considered allowable costs under the Contract.
- 8. This Consent Order does not preclude DOE from re-opening the investigation nor preclude DOE/NNSA from issuing an enforcement action under 10 C.F.R. § 851.42 with respect to a potential noncompliance if: (a) after the effective date (as defined in item 4 above), DOE/NNSA becomes aware of any false or materially inaccurate facts or information provided by NTESS; (b) there is a recurrence of worker safety and health deficiencies similar

to those identified above; or (c) NTESS fails to complete all actions identified in item 1, above, in a timely and effective manner to prevent recurrence.

9. Any modification to this Consent Order requires the written consent of all Parties.
10. NTESS waives any and all rights to appeal or otherwise seek judicial or administrative review of the terms of this Consent Order. DOE/NNSA retains the right to judicially enforce the provisions of this Consent Order by all available legal means.
11. This Consent Order is issued pursuant to DOE's authority under Section 234C of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2282c), and the implementing provisions of 10 C.F.R. Part 851 governing enforcement of worker safety and health requirements at DOE/NNSA sites.
12. This Consent Order shall become a Final Order after the signed copy, referenced in item 3 above, is filed by the Office of Enforcement's Office of the Docketing Clerk.

On behalf of my respective organization, I hereby agree to and accept the terms of the foregoing Consent Order.

FOR National Nuclear Security
Administration

FOR National Technology and
Engineering Solutions of Sandia, LLC

 Date 4/12/24

Jill Hruby
Under Secretary for Nuclear Security
Administrator, NNSA

 Date 04/16/2024

James S. Peery
Laboratories Director
National Technology and Engineering
Solutions of Sandia, LLC

FOR Office of Enforcement

 Date 4/15/24

Anthony C. Pierpoint
Director
Office of Enforcement
Office of Enterprise Assessments