



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



June 10, 2021

Dr. Thomas Mason  
Laboratory Director  
Triad National Security, LLC  
Los Alamos National Laboratory  
P.O. Box 1663, MS-A100  
Los Alamos, New Mexico 87545

WCO-2021-01

Dear Dr. Mason:

The Office of Enterprise Assessments' Office of Enforcement has completed its investigation into the facts and circumstances associated with two events in 2019 where workers entered rooms while low oxygen (O<sub>2</sub>) monitors were activated at Los Alamos National Laboratory (LANL). Triad National Security, LLC (Triad) documented noncompliances revealed by these events in the Department of Energy's Noncompliance Tracking System under reports NTS-NA-LAFO-TRIAD-2019-0009840 and NTS-NA-LAFO-TRIAD-2020-0009911, dated September 27, 2019, and January 23, 2020, respectively. The Office of Enforcement issued an Investigation Report to Triad documenting the results of the investigation on October 7, 2020.

On August 12, 2019, two LANL Advanced Nuclear Technology workers entered the High Bay room at the Nonproliferation International Security Center (NISC), TA-03-2322, in an attempt to resolve an O<sub>2</sub> monitor alarm condition, potentially exposing themselves to hazardous conditions.

On November 4, 2019, a Neutron Science and Technology worker entered a laboratory at the Los Alamos Neutron Science Center (LANSCE), TA-53-0003, while a low O<sub>2</sub> alarm was activated. While performing work within the laboratory, the worker noticed a constant, high-pitched sound. Shortly after, the worker discovered that the sound was coming from an O<sub>2</sub> monitor, signaling a potential low O<sub>2</sub> condition. The worker immediately exited the room and contacted a co-worker, who recommended following the laboratory's integrated work document (IWD). The IWD instructed the worker to reset the O<sub>2</sub> monitor, which required re-entry into the room. Upon further investigation, Triad determined that the O<sub>2</sub> monitor was malfunctioning; however, the IWD did not contain appropriate alarm response instructions to reduce the potential for exposure(s) to oxygen deficient atmospheres.

Triad developed two event-specific corrective action plans (CAP) and an extensive institutional CAP to address the specific actions required to prevent workers from entering potentially oxygen deficient atmospheres. The corrective actions are wide-ranging and, if effectively implemented, should adequately address the issues within the NISC and LANSCE divisions and the underlying institutional conditions that led to the occurrence of the two events.


In accordance with 10 C.F.R. § 851.41, Settlement, the Office of Enforcement and the Department of Energy's National Nuclear Security Administration (DOE/NNSA) have agreed to resolve any potential violations with the requirements enforceable under 10 C.F.R. Part 851, Worker Safety and Health Program, through execution of a Consent Order. In agreeing to enter into this Consent Order, DOE/NNSA and the Office of Enforcement placed considerable weight on the underlying safety significance of the potential violations as well as Triad's investigation, response, and corrective actions that are likely to prevent recurrence.

DOE/NNSA and the Office of Enforcement reserve the right to re-open this investigation if DOE later becomes aware that Triad 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 timely comply with the terms and conditions prescribed in the Consent Order (or other related actions that Triad subsequently determines to be necessary) to prevent recurrence of the identified issues, then DOE/NNSA and the Office of Enforcement may pursue additional enforcement activity. DOE/NNSA, the Los Alamos Field Office, and the Office of Enforcement will continue to closely monitor Triad'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 the Consent Order to the Office of Enforcement. Please follow all instructions specified in in the enclosure. By signing this Consent Order, you agree to comply with all of the terms, as 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 301-903-4033, or your staff may contact Robert Hailstone, Director, Office of Worker Safety and Health Enforcement, at 301-903-0100.

Sincerely,



Dr. Charles P. Verdon

Acting Administrator

National Nuclear Security Administration



Kevin L. Dressman

Director

Office of Enforcement

Office of Enterprise Assessments

Enclosure: Consent Order (WCO-2021-01)

cc: Theodore Wyka, NA-LA  
Venessa Chavez, Triad National Security, LLC

In the matter of ) Report No. NTS-NA-LAFO-TRIAD- NUCSAFGRDS-  
2019-0009840  
NTS-NA-LAFO-TRIAD- ACCCOMPLEX  
2020-0009911  
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Triad National Security, LLC )  
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CONSENT ORDER INCORPORATING AGREEMENT AMONG THE U.S. DEPARTMENT OF ENERGY, THE NATIONAL NUCLEAR SECURITY ADMINISTRATION, AND TRIAD NATIONAL SECURITY, LLC

I

Triad National Security, LLC (Triad) is responsible for the management and operation of the Department of Energy’s National Nuclear Security Administration’s (DOE/NNSA) Los Alamos National Laboratory (LANL). Triad is the prime contractor under Contract No. 89233218CNA000001 (Contract), entered into with the DOE/NNSA Los Alamos Field Office (NA-LA).

II

Triad experienced two separate events over a three-month period that involved workers entering rooms while low oxygen (O<sub>2</sub>) monitors were alarming.

On August 12, 2019, two LANL Advanced Nuclear Technology workers entered the High Bay room at the Nonproliferation International Security Center (NISC), TA-03-2322, in an attempt to resolve an O<sub>2</sub> monitor alarm condition. The alarm was activated due to an oxygen-deficient atmosphere caused by a leaking vent pipe (attached to a nitrogen distribution system), located in a caged enclosure within the High Bay room. Institutional low O<sub>2</sub> monitor alarm response requirements were not fully implemented at the NISC facility. Additionally, Triad did not ensure that workers understood the required actions during an alarm, resulting in two workers, at varying times, entering the High Bay room to troubleshoot the situation, potentially exposing themselves to hazardous conditions.

On November 4, 2019, a Neutron Science and Technology worker entered a laboratory at the Los Alamos Neutron Science Center (LANSCE), TA-53-0003, while a low oxygen alarm was

activated. While performing work within the laboratory, the worker noticed a constant, high-pitched sound. Shortly after, the worker discovered that the sound was coming from an O<sub>2</sub> monitor, signaling a potential low O<sub>2</sub> condition. The worker immediately exited the room and contacted a co-worker, who recommended following the laboratory's integrated work document (IWD). The IWD instructed the worker to re-enter the room to reset the O<sub>2</sub> monitor. Upon further investigation, Triad determined that the O<sub>2</sub> monitor was malfunctioning; however, the IWD did not contain appropriate alarm response instructions to reduce the potential for exposure(s) to oxygen deficient atmospheres.

Triad reported noncompliances revealed by these events into the Department of Energy's (DOE) Noncompliance Tracking System (NTS), identified as NTS-NA-LAFO-TRIAD-2019-0009840 and NTS-NA-LAFO-TRIAD-2020-0009911 on September 27, 2019, and January 23, 2020, respectively.

On January 22, 2020, DOE's Office of Enterprise Assessments, Office of Enforcement notified Triad of its decision to investigate the facts and circumstances associated with these two events and potential deficiencies in the implementation of 10 C.F.R. § 851, *Worker Safety and Health Program* requirements.

The Office of Enforcement conducted an investigation into the facts and circumstances associated with the two events where workers entered rooms while low O<sub>2</sub> alarms were activated at LANL. Investigation activities included interviews with contractor personnel and a review of relevant documentation. The onsite portion of the investigation was conducted March 9 through 11, 2020.

In a February 14, 2020, letter to the Office of Enforcement, Triad requested a Consent Order to settle the matter under investigation. The settlement request outlined the actions Triad is taking in order to assure the establishment of the following institution-wide alarm response:

- All alarm systems will activate as intended and personnel can hear and/or see associated horns and lights (or other indicators) at a safe distance from the hazardous environment/condition.
- All personnel that work in alarm covered areas will be aware of the alarms, including visual and/or audible signals produced by each alarm, and actions to take if an alarm is activated.
- All hazard control documents and postings, including associated Building Emergency Plans, IWDs, and associated operating procedures and area postings will be correct and consistent regarding informing workers what actions to take when an alarm is activated.

Triad's causal analyses of both events identified a number of process weaknesses related to low O<sub>2</sub> alarm responses.

Triad conducted a comprehensive review to identify existing O<sub>2</sub> monitor conditions and any remaining noncompliances across the Laboratory complex. The review focused on the causal analyses and documentation from both low O<sub>2</sub> alarm events, as well as an independent effectiveness review report (from a low O<sub>2</sub> alarm event that occurred in 2017). Triad developed two event-specific corrective action plans (CAP) and an extensive institutional CAP to address the specific actions needed to prevent subsequent reoccurrences. The corrective actions are wide-ranging and, if effectively implemented and sustained, will adequately address the issues within the NISC and LANSCE divisions and the underlying institutional conditions that led to the occurrence of the two events.

Further, Triad has demonstrated an organizational learning approach in response to these events by developing institutional areas of emphasis to address broader institutional safety issues, (including safety culture) and is using the low O<sub>2</sub> corrective actions to facilitate wider, more sustainable change across the Laboratory.

### 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 objectives of the Atomic Energy Act of 1954, as amended, and worker safety and health requirements enforceable under 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 Triad's investigation, causal analyses, and associated corrective actions taken since the submission of the NTS reports identified above, that DOE and DOE/NNSA found to be comprehensive and appropriate, DOE and DOE/NNSA have agreed to enter into this settlement. DOE, DOE/NNSA, and Triad 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, DOE/NNSA, and Triad (hereinafter the "Parties"), the following terms represent agreement by the authorized representatives of the Parties to resolve by settlement the potential noncompliances at LANL, in lieu of an enforcement action that DOE/NNSA may issue pursuant to 10 C.F.R. § 851.42.

1. Triad shall complete the following actions by September 30, 2022:
  - a. Fully implement the corrective actions as indicated in NTS report number NTS-NA-LAFO-TRIAD-2019-0009840, *STO Near Miss: Worker Enters Room During Low Oxygen Alarm Activation*, dated June 25, 2020, and NTS-NA-LAFO-TRIAD-2020-0009911, *LFO: Worker Inadvertently Enters Room While Low Oxygen Monitor Alarming*, dated November 25, 2020, by the prescribed due dates specified for each corrective action.

- b. Fully implement the corrective actions identified in the *LANL Institutional Low Oxygen Corrective Action Plan revision: April 2021*, by the prescribed due dates specified for each corrective action.
  - c. Provide quarterly written updates on the status of corrective actions, as specified in items 1a. and 1b. above, to the Office of Enforcement and NA-LA.
  - d. Notify the Office of Enforcement and NA-LA, in writing, of any corrective action(s) requiring an extension, at least 30 calendar days before the prescribed due date.
  - e. Notify the Office of Enforcement and NA-LA upon completion of all actions specified in the Corrective Action Plans (see items 1a. and 1b., above).
  - f. Conduct effectiveness reviews for each issue specified in the *LANL Institutional Low Oxygen Corrective Action Plan revision: April 2021*, by the specified due date in the plan. Provide the Office of Enforcement and NA-LA with copies of the results of any relevant effectiveness reviews within 30 calendar days of completion.
2. Triad 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 [enforcementdocketclerk@hq.doe.gov](mailto:enforcementdocketclerk@hq.doe.gov).
  3. The Effective Date of this Consent Order shall be the date upon which Triad signs this Consent Order.
  4. This Consent Order shall constitute a full and final settlement of the potential noncompliances identified in the referenced NTS reports, subject to Triad's completion of all actions set forth in item 1 above, to the satisfaction of DOE/NNSA and the Office of Enforcement.
  5. No "cost", as defined in the Federal Acquisition Regulation, 48 C.F.R. § 31.205-47, incurred by, for, or on behalf of Triad 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 Triad 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.
  6. 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 provided in item 3, above), DOE/NNSA becomes aware of any false or materially inaccurate facts or information provided by Triad; (b) there is a recurrence of worker safety and health deficiencies similar to those identified above; or (c) Triad fails to complete all actions identified in item 1, above, in a timely and effective manner to prevent recurrence.

7. Any modification to this Consent Order requires the written consent of all Parties.
8. Triad 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.
9. 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 Part 851 governing enforcement of worker safety and health requirements at DOE/NNSA sites.
10. 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 Triad National Security, LLC

Charles P. Verdon Date 6/10/21

Dr. Charles P. Verdon  
Acting Administrator  
National Nuclear Security Administration

Thomas Mason Date 6/16/21

Dr. Thomas Mason  
Laboratory Director  
Triad National Security, LLC

FOR Office of Enforcement

Kevin L. Dressman Date 6/10/21

Kevin L. Dressman  
Director  
Office of Enforcement  
Office of Enterprise Assessments