



Department of Energy

Washington, DC 20585

November 14, 2022

Mr. Sean Dunagan
President and Project Manager
Nuclear Waste Partnership, LLC
4021 National Parks Highway
Carlsbad, New Mexico 88220

WEA-2022-03

Dear Mr. Dunagan:

This letter refers to the Department of Energy's (DOE) investigation into the facts and circumstances associated with a crush injury to the right hand of a worker during post-maintenance component testing on a Getman model A64 waste transporter at the Waste Isolation Pilot Plant (WIPP). The DOE Office of Enterprise Assessments' Office of Enforcement provided the results of the investigation to Nuclear Waste Partnership, LLC (NWP) in an investigation report dated July 19, 2022. An enforcement conference was convened on September 8, 2022, with you and members of your staff to discuss the report's findings and NWP's response. A summary of the enforcement conference and attendance roster are enclosed.

DOE considers the transporter hand crush injury (amputation) event to be of high safety significance. The worker's injury was severe, requiring surgical amputation of portions of the injured worker's right index and middle fingers. The event occurred when the transporter's pallet drive chain was cycling from the "pallet on" to the "pallet off" position during function testing, causing the pallet locking mechanism to rotate (as designed) from the up to the down position, crushing two of the worker's fingers between the pallet lock and the transporter deck. The event revealed deficiencies in: (1) management responsibilities; (2) hazard identification and assessment, and training and information; (3) occupational injury recording and reporting; and (4) emergency response.

Based on an evaluation of the evidence in this matter, including information presented at the enforcement conference, DOE concludes that NWP violated requirements prescribed under 10 C.F.R. Part 851, *Worker Safety and Health Program*. Accordingly, DOE hereby issues the enclosed Preliminary Notice of Violation (PNOV) which cites two Severity Level I violations and two Severity Level II violations. DOE withheld \$889,423 in contract award fee for the NWP performance failures in Fiscal Year 2021 associated with the transporter hand crush injury (amputation) event that are related to the violations cited in this



PNOV. Therefore, in accordance with 10 C.F.R. § 851.5 (c), DOE proposes no civil penalties for the Part 851 violations cited in this PNOV.

Pursuant to 10 C.F.R. § 851.42, *Preliminary Notice of Violation*, you are obligated to submit a written reply within 30 calendar days of receipt of the enclosed PNOV and to follow the instructions specified in the PNOV when preparing your response. If you fail to submit a reply within the 30 calendar days, then in accordance with 10 C.F.R. § 851.42(d), you relinquish any right to appeal any matter in the PNOV, and the PNOV will constitute a final order.

After reviewing your reply to the PNOV, including any proposed additional corrective actions entered into DOE's Noncompliance Tracking System, DOE will determine whether any further activity is necessary to ensure compliance with DOE worker safety and health requirements. DOE will continue to monitor the completion of corrective actions until this matter is fully resolved.

Sincerely,



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

Enclosures: Preliminary Notice of Violation (WEA-2022-03)
Enforcement Conference Summary
Enforcement Conference Attendance Roster

cc: Reinhard Knerr, CB
Mark Bollinger, CB
Michael Hendrickson, Nuclear Waste Partnership, LLC

Preliminary Notice of Violation

Nuclear Waste Partnership, LLC
Waste Isolation Pilot Plant

WEA-2022-03

A U.S. Department of Energy (DOE) investigation into the facts and circumstances associated with the May 25, 2021, hand crush injury (amputation) event at the Waste Isolation Pilot Plant (WIPP) revealed violations of DOE worker safety and health requirements by Nuclear Waste Partnership, LLC (NWP). The event resulted in a worker receiving a crush injury to the right hand during post-maintenance component testing on a Getman model A64 waste transporter. The worker's injury was severe, requiring surgical amputation of portions of the injured worker's right index and middle fingers.

DOE provided NWP with an investigation report dated July 19, 2022, and convened an enforcement conference with NWP representatives on September 8, 2022, to discuss the report's findings and NWP's response. A summary of the conference and attendance roster are enclosed.

Pursuant to Section 234C of the Atomic Energy Act of 1954, as amended, and DOE regulations set forth at 10 C.F.R. Part 851 (Part 851), *Worker Safety and Health Program*, DOE hereby issues this Preliminary Notice of Violation (PNOV) to NWP. The violations cited in this PNOV include deficiencies in: (1) management responsibilities; (2) hazard identification and assessment, and training and information; (3) occupational injury recording and reporting; and (4) emergency response. DOE has grouped and categorized the violations as two Severity Level I violations and two Severity Level II violations.

Severity Levels are explained in Part 851, appendix B, *General Statement of Enforcement Policy*. Subparagraph VI(b)(1) states that “[a] Severity Level I violation is a serious violation. A serious violation shall be deemed to exist in a place of employment if there is a potential that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use, in such place of employment.”

Subparagraph VI(b)(2) states that “[a] Severity Level II violation is an other-than-serious violation. An other-than-serious violation occurs where the most serious injury or illness that would potentially result from a hazardous condition cannot reasonably be predicted to cause death or serious physical harm to employees but does have a direct relationship to their safety and health.”

In accordance with 10 C.F.R. § 851.5(b) and DOE Acquisition Regulation 48 C.F.R. § 970.5215-3, incorporated by reference into the NWP contract (Contract No. DE-EM0001971) at Clause I-138, *Conditional Payment of Fee, Profit and Other Incentives - Facility Management*, DOE

withheld \$889,423 of contract award fee from NWP for safety and health performance deficiencies that included the transporter hand crush injury (amputation) event. Therefore, in accordance with 10 C.F.R. § 851.5(c), DOE proposes no civil penalty for the violations cited in this PNOV.

As required by 10 C.F.R. § 851.42(b) and consistent with Part 851, appendix B, the violations are listed below. If this PNOV becomes a final order, then NWP must prominently post a copy of this PNOV at or near the location where the violation occurred until the violation is corrected in accordance with 10 C.F.R. § 851.42(e).

I. VIOLATIONS

A. Management Responsibilities

Title 10 C.F.R. § 851.10, *General requirements*, subsection (a) states that “[w]ith respect to a covered workplace for which a contractor is responsible, the contractor must: (1) [p]rovide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers; and (2) [e]nsure that work is performed in accordance with: (i) [a]ll applicable requirements of [Part 851]; and (ii) [t]he worker safety and health program for that workplace.”

Title 10 C.F.R. § 851.20, *Management responsibilities and worker rights and responsibilities*, subsection (a) states that “[c]ontractors are responsible for the safety and health of their workforce and must ensure that contractor management at a covered workplace: (1) establish written policy, goals, and objectives for the worker safety and health program...”

NWP document WP-15-GM.02, *Worker Safety and Health Program (WSHP) Description*, revision 16, March 22, 2021, section 8.0, *General Requirements*, states that “[t]he NWP overall safety program...meets the requirements of 10 C.F.R. Part 851.10(a) and (b), providing a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers, ensuring that work is performed per requirements of 10 C.F.R. Part 851, WSHP, and with the WSHP for NWP covered workplaces.”

NWP document MP-1.12, *Worker Protection Policy*, revision 14, November 18, 2016, section 2.0, *Requirements*, states that “[w]orkers are responsible for their own safety, but management is responsible for providing a safe work environment, including proper procedures, policies, tools, protective equipment, etc.”

NWP document WP 15-GM.03, *Integrated Safety Management System Description*, revision 11, January 28, 2021, section 3.1, *Safety Management Guiding Principles*, states that “[t]he following [g]uiding [p]rinciples are fundamental policies that guide NWP actions, from development of plans and procedures to the conduct of work....” Additionally, section 6.1.5,

Guiding Principle 5: Identification of Safety Standards and Requirements, states that “[i]mplementing plans, procedures, and protocols are in place to translate requirements into action.”

NWP document, *Type 2 Work Order 2154821*, dated May 25, 2021, attachment-*Model Work Order (MWO) 00002, Inspection/Repair/Replacement/Lubrication of Faulty Electrical/Mechanical Components on Underground Equipment Less than 100 Volts DC*, revision 3T1, section 1.0, *Purpose/Scope*, states that “[t]he scope of this work control document includes the inspection, preventive maintenance, lubrication, and post job testing/restoration of the equipment.”

Contrary to the above requirements, NWP failed to comply with the applicable requirements of Part 851 and the approved WSHP for the workplace, in that NWP did not develop and implement processes, procedures, and requirements for the safe conduct of corrective maintenance activities. Consequently, the work control document used to perform corrective maintenance on the transporter’s drive chain was not adequate for the scope of work (i.e., complex process that may require troubleshooting).

This noncompliance constitutes a Severity Level I violation.

B. Hazard Identification and Assessment, and Training and Information

Title 10 C.F.R. § 851.21, *Hazard identification and assessment*, subsection (a) states that “[c]ontractors must establish procedures to identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. Procedures must include methods to...(4) [a]nalyze designs of new facilities and modifications to existing facilities and equipment for potential workplace hazards; (5) [e]valuate operations, procedures, and facilities to identify workplace hazards; and (6) [p]erform routine job activity-level hazard analyses.”

Title 10 C.F.R. § 851.25, *Training and information*, subsection (a) states that “[c]ontractors must develop and implement a worker safety and health training and information program to ensure that all workers exposed or potentially exposed to hazards are provided with the training and information on that hazard in order to perform their duties in a safe and healthful manner.”

NWP document WP-15-GM.02, *WSHP Description*, revision 16, March 22, 2021, section 13, *Hazard Identification and Assessment*, states that “NWP has established procedures to identify existing and potential workplace hazards and assess the risk of associated worker injury and illness.” Section 17.0, *Training and Information*, states that “NWP has developed and implemented a worker safety and health training and information program to ensure workers exposed or potentially exposed to hazards are provided with training and information on that hazard in order to perform their duties in a safe and healthful manner.”

NWP document WP 12-IS.01, *Industrial Safety Program – Structure and Management*, revision 16, March 21, 2018, section 8.0, *Audits, Inspections, and Assessments*, paragraph 8.3.1 states that “IS/IH [industrial safety/industrial hygiene] is responsible for...performing a formal design review, including final acceptance reviews, to verify that work meets applicable codes, regulations, and standards.”

NWP document WP 12-IS.3002, *Job Hazard Analysis (JHA) and Electrical Risk Assessment Development and Performance*, revision 16, January 29, 2020, section 1.0, *Introduction*, states that “[a]ll WIPP activities are evaluated for potential hazards and a detailed [g]eneral [h]azard [a]nalysis (GHA) has been performed to address routine industrial safety hazards and associated controls at WIPP facilities....When hazards are present beyond those evaluated in the GHA, the JHA process is followed to identify, evaluate, control, and communicate potential hazards associated with performing WIPP activities....” Section 5.4, *JHA and Electrical Task Risk Assessment Walk Downs & Tabletop Review Requirements*, states that “[a] JHA is performed to evaluate all aspects of task performance. This includes an analysis of the hazards associated with performing the task, and an evaluation of hazards associated with the work area where the activity will be performed....” Section 5.8, *Standing JHAs*, states that “[s]tanding JHA controls are routinely incorporated into the procedure or work control document; they are considered a supplemental work document for that activity and must be reviewed.”

NWP document WP 10-WC3011, *Work Control Process*, revision 44, April 20, 2021, attachment 3, *Work Scope Development*, states that “[t]he first step in the planning process is to define the work activities and boundaries in sufficient detail to allow a work planning team to determine the job steps necessary to complete the work so that hazards can be identified.”

NWP document WP 10-WC.04, *Skill of the Craft/Skill of the Worker (SOC/SOW) Program*, revision 2, January 5, 2017, section 2.0, *Purpose*, states that “[t]he introduction of tools and equipment, processes and methods not previously used shall not be considered for inclusion as SOC/SOW until evaluated, defined, and documented by line management.” Section 5.0, *Qualification Process*, states that “[w]orkers under the SOC/SOW program possess the training, qualification, verification, education, and experience to safely perform the work, which is expected to have little potential for identified hazards to change during the work activity.”

NWP document WP 04-AD3030, *Pre-Job Briefings and Post-Job Reviews*, revision 9, April 29, 2021, section 1.2, *Scope*, states that “[a] pre-job briefing is a preparatory meeting conducted before performing an operating, maintenance or testing task. The briefing is designed to ensure the safe and efficient execution of the task. The pre-job briefing consists of a review of the task, the role team members play in task accomplishment, the hazards characteristic of the task, and the safety constraints employed to protect against the hazards.” Section 4.0, *Prerequisite Actions*, states that “[a]ll workers receive the same level of briefing. If all workers cannot attend the initial pre-job briefing or if additional workers are needed, then an additional briefing shall be conducted to ensure all personnel are cognizant of the scope and requirements of the job.”

Contrary to the above requirements, NWP failed to identify and assess an existing workplace hazard (i.e., motion pinch point of the transporter pallet locking device), failed to perform work in accordance with the approved WSHP for the workplace, and failed to provide workers with adequate information to safely perform their assigned tasks. Specific examples include the following:

1. NWP failed to analyze the design of the pallet locking device for two new underground transporters (52-H-008D and 52-H-008E) to identify safety hazards associated with a rotating metal component. Further, NWP failed to conduct an adequate commissioning and turnover inspection of the transporters to identify and assess any unique equipment hazards prior to placing the transporters into service. The investigation revealed that NWP did not require the industrial safety organization to inspect the transporters for potential hazards, such as pinch points.
2. NWP failed to adequately identify and assess the hazards of post maintenance component testing for the Getman model A64 waste transporter drive chain. Specifically, the hazards of function testing the drive chain and pallet hook actuator were not identified or assessed in the JHA for MWO 00002.
3. NWP failed to establish procedures and/or requirements to qualify and train maintenance mechanics on corrective maintenance and post maintenance testing. Specifically, NWP's SOC/SOW program only qualified maintenance mechanics to operate power tools and perform preventive maintenance on doors and mobile equipment. Further, the SOC/SOW program qualification process did not consider the different types of mobile equipment that a mechanic may perform work on.
4. NWP failed to develop and adequately administer a process to ensure that pre-job briefings were consistently performed for all maintenance work in the WIPP underground. Specifically, although an additional pre-job brief was required, it was not conducted for additional maintenance workers who participated in the post-maintenance testing of a drive chain on a waste transporter. Further, the investigation revealed that the required pre-job briefing form was not routinely completed for maintenance activities at the site.

Collectively, these noncompliances constitute a Severity Level I violation.

C. Occupational Injury Recording and Reporting

Title 10 C.F.R. § 851.23, *Safety and health standards*, subsection (a) states that “[c]ontractors must comply with the following safety and health standards that are applicable to the hazards at their covered workplace...(2) Title 29 [C.F.R.] Parts 1904.4 through 1904.11, 1904.29 through 1904.33; and 1904.46, *Recording and Reporting Occupational Injuries and Illnesses*.”

Title 29 C.F.R. § 1904.7, *General recording criteria*, subsection (a) states that “[y]ou must consider an injury or illness to meet the general recording criteria, and therefore to be recordable, if it results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness.” Subsection (b)(1) states that “[a] work-related injury or illness must be recorded if it results in one or more of the following... (ii) days away from work... (iii) restricted work or transfer to another job...” Subsection 1904.7(b)(3) provides that “when an injury or illness involves one or more days away from work, you must record the injury or illness on the OSHA [Occupational Safety and Health Administration] 300 Log with a check mark in the space for cases involving days away and an entry of the number of calendar days away from work in the number of days column.” Additionally, paragraph (b)(3)(i) states that “...you begin counting days away on the day after the injury occurred or the illness began” and paragraph (b)(3)(iv) states that “[y]ou must count the number of calendar days the employee was unable to work as a result of the injury or illness, regardless of whether or not the employee was scheduled to work on those days(s). Weekend days, holidays, vacation days or other days off are included in the total number of days recorded if the employee would not have been able to work on those days because of a work-related injury or illness.” Paragraph (b)(4)(ii) states that “[f]or recordkeeping purposes, an employee's routine functions are those work activities the employee regularly performs at least once per week.” Additionally, paragraph (b)(4)(xi) states that “[y]ou count days of job transfer or restriction in the same way you count days away from work, using 1904.7(b)(3)(i) to (viii)...”

Contrary to the above requirements, NWP failed to comply with applicable requirements of Part 851 in relation to recording criteria for the work-related injuries sustained by an NWP employee on May 25, 2021. NWP failed to accurately record the lost time associated with the worker's injury in the OSHA 300 Log. Specifically, the NWP OSHA Log recorded that the injured worker was away from work for 13 days and on restricted duty for 23 days. However, the attending physician released the employee to return to work with restrictions on June 7, 2021, reflecting a total of 12 days away from work. Further, the attending physician released the employee to return to work without restrictions on August 23, 2021, reflecting a total of 77 days of restricted duty.

This noncompliance constitutes a Severity Level II violation.

D. Emergency Response

Title 10 C.F.R. § 851.24, *Functional areas*, subsection (b) states that “[i]n implementing the structured approach required by paragraph (a) of this section, contractors must comply with the applicable standards and provisions in appendix A of this part, entitled ‘Worker Safety and Health Functional Areas.’” Appendix A of Part 851, section 2, *Fire Protection*, subsection (a) states that “[c]ontractors must implement a comprehensive fire safety and emergency response program to protect workers commensurate with the nature of the work that is performed.”

NWP document WP15-GM.02, *WSHP Description*, revision 16, March 22, 2021, section 15.0, *Safety and Health Standards*, states that “NWP complies with the following safety and health standards, which are applicable to the hazards at the WIPP site...(5) [Title] 30 C.F.R Chapter 1, Mine Safety and Health Administration, including Parts 47, 48, 49, 57, and 62. *Safety And Health Standards - Underground Metal and Nonmetal Mines* is applied for worker protection and consistency throughout the WIPP site for purposes of 10 [C.F.R.] §851.” Additionally, section 16.0, *Functional areas*, states that “NWP has a structured approach to the worker safety and health program, which includes provisions for the following functional areas at applicable locations...(2), *Fire Protection*...NWP has implemented a comprehensive fire safety and emergency response program that minimizes impact of emergency events on health and safety of workers.”

Title 30 C.F.R. Part 57, subpart C, *Fire Prevention and Control*, § 57.4363, *Underground evacuation instruction*, subsection (b), states that “[w]henver a change is made in escape and evacuation plans and procedures for any area of the mine, all persons affected shall be instructed in the new plans or procedures.”

Contrary to the above requirements, NWP failed to provide adequate information on required emergency medical response actions and failed to provide adequate notifications of real time information regarding the status of the WIPP mine hoists for emergency egress. Specific examples include the following:

1. NWP failed to provide adequate instructions to workers on the need to immediately report a medical emergency in the underground to the central monitoring room (CMR). Specifically, NWP emergency response procedures and training provided underground occupants with instructions on how to respond to all emergency incidents, but did not specifically prioritize the need to immediately contact the CMR to initiate onsite emergency response and to coordinate the evacuation of an injured employee. For example, the *Underground Occupant Emergency Response Procedure*, WP 12-ER4931, provides instructions on how to respond to all emergency incidents, including calling the CMR operator; however, the procedure indicates that steps may be performed in any order appropriate to the nature of each unique incident.
2. NWP failed to adequately notify affected workers in the underground with real-time information on the status of each of the WIPP mine hoists for emergency egress. On the day of the event, the underground controller’s dry-erase board did not provide underground occupants with real-time primary/secondary egress hoist status information. Consequently, when the involved workers attempted to use the salt hoist because it was a faster egress route, they arrived to find it non-recoverable. The workers were redirected to the waste hoist, causing a combined delay of 10 minutes in the treatment and evacuation of the injured worker.

This noncompliance constitutes a Severity Level II violation.

II. REPLY

Pursuant to 10 C.F.R. § 851.42(b)(4), NWP is hereby obligated to submit a written reply within 30 calendar days of receipt of this PNOV. The reply should be clearly marked as a “Reply to the Preliminary Notice of Violation.”

If NWP chooses not to contest the violations set forth in this PNOV, then the reply should clearly state that NWP waives the right to contest any aspect of this PNOV. In such case, this PNOV will constitute a final order.

If NWP disagrees with any aspect of this PNOV, then as applicable and in accordance with 10 C.F.R. § 851.42(c)(1), the reply must: (1) state any facts, explanations, and arguments that support a denial of an alleged violation; and (2) discuss the relevant authorities that support the position asserted, including rulings, regulations, interpretations, and previous decisions issued by DOE. In addition, 10 C.F.R. § 851.42(c)(2) requires that the reply include copies of all relevant documents.

If NWP fails to submit a written reply within 30 calendar days of receipt of this PNOV, then pursuant to 10 C.F.R. § 851.42(d), NWP relinquishes any right to appeal any matter in this PNOV and this PNOV will constitute a final order.

Please submit your reply to the Director, Office of Enforcement by email to enforcementdocketclerk@hq.doe.gov.

A copy of the reply should also be sent to the Manager of the Carlsbad Field Office.

III. CORRECTIVE ACTIONS

Corrective actions that have been or will be taken to avoid further violations should be delineated with target and completion dates in DOE's Noncompliance Tracking System.



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

Washington, D.C.

This 14th day of November 2022