



## Department of Energy

Washington, DC 20585

April 25, 2018

### VIA OVERNIGHT UPS MAIL CARRIER

Mr. Brian Reilly  
Project Director  
Hanford Waste Treatment and Immobilization Plant Project  
Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99352

WEA-2018-01

Dear Mr. Reilly:

This letter refers to the Department of Energy (DOE) investigation into the facts and circumstances associated with a November 4, 2016, event in which a worker was injured when a 12-inch pipe joint separated and released a pressurized stream of water during preparation of a piping system for pressure testing at the Waste Treatment and Immobilization Plant at the Hanford Site. The DOE Office of Enterprise Assessments' Office of Enforcement provided the results of the investigation to Bechtel National, Inc. (BNI) in a report dated October 3, 2017. An enforcement conference was convened on November 29, 2017, with your predecessor and members of your staff to discuss the report's findings and BNI's response. A summary of the enforcement conference and list of attendees is enclosed.

DOE considers this event and the underlying pressure safety deficiencies to be of high safety significance. The event resulted in the fracture of two of the worker's vertebrae and multiple head lacerations. As a result, the worker was placed on medical leave for 70 days, subsequently returning with medical work restrictions for an additional 84 days, and continued to undergo physical therapy due to the injury. The event resulted in a serious injury that could have been more severe, and it revealed deficiencies in: (1) management responsibilities, (2) hazard identification and assessment, (3) hazard prevention and abatement, (4) training and information, and (5) recordkeeping.

Based on an evaluation of the evidence in this matter, including information presented at the enforcement conference, DOE concludes that BNI 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 three Severity Level I violations and two Severity Level II violations. The DOE Office of River Protection (DOE-ORP) withheld



\$556,500 in BNI's contract fee during the 2016 performance period for worker safety and health performance deficiencies that included this event. 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.

DOE acknowledges BNI's post-incident measures, which included conducting an engineering analysis of venting adequacy of multiple piping systems, updating pressure testing procedures, and updating recordkeeping practices. DOE also recognizes that BNI initiated actions to mitigate the immediate hazards associated with filling and venting and to integrate improved processes to prevent recurrence. However, DOE remains concerned that the potential impact of prior pressure tests on system components has not been fully assessed to determine whether additional actions are necessary to protect workers from system failures.

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 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 and 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,



Kevin L. Dressman

Acting Director

Office of Enforcement

Office of Enterprise Assessments

Enclosures: Preliminary Notice of Violation (WEA-2018-01)  
Enforcement Conference Summary and List of Attendees

cc: Brian Vance, DOE-ORP  
Chad Ungerecht, BNI

**Preliminary Notice of Violation**

Bechtel National, Inc.  
Hanford Waste Treatment and Immobilization Plant Project  
Richland, Washington

WEA-2018-01

The U.S. Department of Energy (DOE) Office of Enterprise Assessments' Office of Enforcement conducted an investigation into the facts and circumstances associated with a November 4, 2016, event in which a worker was injured when a 12-inch pipe joint separated and released a pressurized stream of water during preparation of a piping system for pressure testing at the Waste Treatment and Immobilization Plant (WTP) at the Hanford Site. The investigation revealed multiple violations of DOE worker safety and health requirements by Bechtel National, Inc. (BNI). DOE provided BNI with an investigation report dated October 3, 2017, and convened an enforcement conference on November 29, 2017, with BNI representatives to discuss the report's findings and BNI's response. A summary of the conference and list of attendees is 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 BNI. The violations cited in this PNOV include deficiencies in: (1) management responsibilities, (2) hazard identification and assessment, (3) hazard prevention and abatement, (4) training and information, and (5) recordkeeping. DOE has grouped and categorized these deficiencies as three 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.”

The DOE Office of River Protection withheld from BNI \$556,500 of earned fee in 2016 for safety and health performance deficiencies that included deficiencies associated with this event. Therefore, in accordance with 10 C.F.R. § 851.5(c) and DOE Acquisition Regulation 48 C.F.R. §

970.5215-3, *Conditional Payment of Fee, Profit, and Other Incentives – Facility Management Contracts*, 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 BNI may be required to post a copy of this PNOV 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: . . . (2) [e]nsure that work is performed in accordance with: (i) [a]ll applicable requirements of [10 C.F.R. Part 851]; and (ii) [t]he worker safety and health program for that workplace.”

BNI document 24590-WTP-PL-SA-06-0002, Rev 10, *WTP Worker Safety and Health Program* (effective May 15, 2014), describes the policies and procedures that comprise the DOE-approved worker safety and health program at WTP as required by 10 C.F.R. § 851.10. This document “provides primary upper-tiered requirements and identifies the mechanisms implementing the requirements of the Rule. The methods for compliance are identified in the text. Specific implementing procedures, policies, and program documents are identified in the WTP Worker Safety and Health Program Implementation Matrix (24590-WTP-PL-SA-08-0003).”

BNI document 24590-WTP-LIST-CON-09-0001, Rev 1, *WTP Skill of the Craft* (effective January 9, 2009), Section 3, states that “[b]uilding trade skill sets (identified in Table 1 of the procedure) and WTP training have been evaluated and deemed adequate and do not require additional Hazard Analysis and Control beyond the skill level and training provided. Hazards not covered by Skill of the Craft or training require controls through the use of a hazard control document (reference 24590-WTP-GPP-WPHA-002, *Hazard Analysis and Control*).”

BNI document 24590-WTP-GPP-WPHA-001, Rev 7, *Work Control and Work Packaging*, (effective January 28, 2016), Section 1.0, states that “[t]his procedure defines the process requirements for the control and performance of work activities at the . . . WTP. This work control process is based on the functions and principles of the WTP Integrated Safety Management System (ISMS), 24590-WTP-ISMP-ESH-01-001, *Integrated Safety Management Plan*. This procedure provides requirements to ensure appropriate quality and hazard information is communicated to each employee prior to starting a job or task.”

BNI document 24590-WTP-GPP-SIND-024, Rev 07, *General Safe Work Practices* (effective September 26, 2006), Section 4.2, states that “[w]ork performed that is considered physical/manual/hands-on activities (e.g., manipulation, modification, fabrication, removal) to a facility, system, structure, component, or equipment and/or changes to the configuration (including testing, troubleshooting, and calibration activities) that expose or create hazards

has work package requirements. For construction, create work package in accordance with 24590-WTP-GPP-WPHA-001, *Work Control and Work Packaging*.”

BNI document 24590-WTP-GPP-CON-3504, Rev 13, *Pressure Testing* (effective February 25, 2016), Section 5.6, states that “the Construction Work Package safety plan components are [to be] reviewed with craft prior to starting work and ensure relevant feedback received during work activities is adequately addressed in planning of subsequent work. In addition to the safety plan, ensure that personnel understand and implement the following pressure test specific work scope safety requirements, as applicable: Identification methods for work areas to be barricaded or flagged/roped off, including additional protective barriers necessary to prevent injury due to leakage, pipe rupture, or equipment failure during testing. As applicable, the test area shall be barricaded off in accordance with 24590-WTPGPP-SIND-028, *Barricades and Signs*.” It further states that “[i]f pressure test boundary points are against an energized system greater than 125 degrees Fahrenheit and/or 150 psig [pounds per square inch gauge] pressure, LO/TO [lockout/tagout] is required to be applied on the test boundary to preclude hazardous energy exposure to those performing the venting or draining process during test recovery.”

Title 10 C.F.R. Part 851, Appendix A, Section 4, *Pressure Safety*, subsection (a), states that “[c]ontractors must establish safety policies and procedures to ensure that pressure systems are designed, fabricated, tested, inspected, maintained, repaired, and operated by trained and qualified personnel in accordance with applicable and sound engineering principles.” In addition, subsection (b) states that “[c]ontractors must ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to: ... (2) [t]he applicable ASME B31 (Code for Pressure Piping) standards.”

In American Society of Mechanical Engineers (ASME) B31.3-2002, *Process Piping*, the introduction section states: “select the Code Section that most nearly applies to a proposed piping installation. Factors to be considered by the owner include: limitations of the Code Section, jurisdictional requirements, and the applicability of other codes and standards.”

American Water Works Association (AWWA) standard AWWA C600-93, *Installation of Ductile-Iron Water Mains and Their Appurtenances*, Section 3.6.3.2, states that “[a]ir-release and/or vacuum vents shall be provided at high points in the line and in areas of potential negative pressure. The air-release and/or vacuum vents shall not be connected to any storm or sanitary sewer and shall be protected from freezing in locations where cold temperatures are encountered.”

Contrary to these requirements and as evidenced by the following facts, BNI management failed to ensure that the plant cooling water (PCW) system, as designed and pressure tested, did not present a hazard to workers, and failed to ensure that work was conducted in accordance with their established procedures:

1. BNI management and supervision did not follow their established work planning and control processes to ensure that filling and venting of the PCW system could be completed safely. The filling and venting activity was outside of the building trade skill

sets evaluated by BNI and was not covered by the WTP skill-of-the-craft program, so it required controls in the form of a hazard control document and a work package. However, the activity was performed without BNI defining the expectations and tasks associated with the scope of work to be performed, evaluating critical steps and tasks for potential hazards, establishing appropriate controls, or formally authorizing the activity in accordance with their established procedures before allowing work to proceed.

2. Pipefitters and their management had identified difficulties in venting air from the PCW piping since the system was installed over a decade ago. Despite this longstanding awareness, management did not undertake an analysis of the potential causes of this difficulty until after the November 4, 2016, event or establish a safe process for properly venting the system. In the absence of an established safe process, BNI used an ad hoc work process in which the hazards were not properly evaluated or controlled. BNI's post-event analysis identified that the PCW system, as installed, would entrap an estimated 894 cubic feet of air upon filling. Because the ad hoc work process involved pressurizing the PCW system up to 125 pounds per square inch (psi), the large quantity of entrapped air was compressed and presented an unanalyzed stored energy hazard that contributed greatly to the severity of the event when the joint failure occurred.

Collectively, these noncompliances constitute a Severity Level I violation.

## **B. Hazard Identification and Assessment**

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; [and] (5) [e]valuate operations, procedures, and facilities to identify workplace hazards.”

Title 10 C.F.R. Part 851, Appendix A, Section 1, *Construction Safety*, subsection (a), states that “[f]or each separately definable construction activity (e.g., excavations, foundations, structural steel, roofing), the construction contractor must: (1) [p]repare and have approved by the construction manager an activity hazard analysis prior to commencement of affected work. Such analyses must: (i) [i]dentify foreseeable hazards and planned protective measures.”

Title 10 C.F.R. Part 851, Appendix A, Section 4, *Pressure Safety*, subsection (c), states that “[w]hen national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), contractors must implement measures to provide equivalent protection and ensure a level of safety greater than or equal to the level of protection afforded by the ASME or applicable state or local code....”

BNI document 24590-WTP-PL-SA-06-0002, Section 3.6.4.3, states that “[a]t WTP, most permanent plant systems and components that could affect pressure safety will be designed in accordance with national consensus codes, as applicable.”

BNI document 24590-WTP-GPP-CON-3504, Section 5.6, requires a “walk down of the system to be tested to ascertain its readiness. This includes ensuring adequate low point drains and high point vents are installed on systems to be hydrostatically leak tested or assuring other appropriate means have been established for removing water from the low points in the system (e.g., disassemble equipment, air blow piping). When appropriate, install a low point drain, in accordance with 24590-WTP-GPP-CON-3503, in any sections of a system to be hydro tested that does not already have a drain.”

Contrary to these requirements and as evidenced by the following facts, BNI failed to adequately identify and evaluate hazards associated with the fill and vent activity or pressurization of the PCW piping for hydrostatic testing:

1. BNI did not prepare an assisted job hazard analysis (AJHA) for the filling and venting activity to identify existing and potential workplace hazards or establish controls for those hazards. BNI 24590-WTP-LIST-CON-09-0001 identifies routine journeymen activities that BNI determined do not require an approved activity hazard analysis. However, fill and vent is not one of these exempted activities, and BNI 24590-WTP-GPP-WPHA-001 requires an approved AJHA for this activity. Moreover, BNI did not identify and assess the risk of a variety of potential hazards related to stored energy (e.g., pipe separation, component failure) or provide effective controls to protect workers from injury or death.
2. BNI did not assess the hazards associated with not correctly applying the applicable consensus standard in determining safe pressure limits for hydrostatic testing of the PCW system’s buried ductile iron piping. AWWA C600-93 establishes that the design pressure is the maximum pressure to which the piping will be subjected and must not be exceeded during pressure testing. Since 2009, BNI’s Pressure Test Data Sheets for hydrostatic pressure testing of the PCW system have identified the applicability of the AWWA C600-93 standard, including Pressure Test Data Sheet 24590-BOF-PPTR-CON-16-0030 for the hydrostatic test planned for November 2016. However, these Pressure Test Data Sheets document test pressures that are 50 percent higher than design test pressures established by BNI for the PCW system, significantly exceeding the maximum pressure allowed under the standard for a buried ductile iron piping system.

Collectively, these noncompliances constitute a Severity Level I violation.

### **C. Hazard Prevention and Abatement**

Title 10 C.F.R. § 851.22, *Hazard prevention and abatement*, subsection (a), states that “[c]ontractors must establish and implement a hazard prevention and abatement process to ensure that all identified and potential hazards are prevented or abated in a timely manner. (1) For hazards identified either in the facility design or during the development of procedures, controls must be incorporated in the appropriate facility design or procedure. (2) For existing hazards identified in the workplace, contractors must:...(iii) [p]rotect workers from dangerous safety and health conditions.”

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: ... (7) Title 29 CFR, Part 1926, ‘Safety and Health Regulations for Construction.’”

Title 29 C.F.R. § 1926.651, *Specific Excavation Requirements*, paragraph (b)(4), states that “[w]hile the excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees.”

BNI document 24590-WTP-GPP-CON-3502, Rev 3, *Construction Procedure Underground Piping Installation*, effective January 29, 2016, Appendix 2, item 30, states: “[v]erify valves and in-line components are installed and tagged in accordance with design documents and manufacturer’s instructions.” It further states, in Section 4.9: ensure that “backfill is performed in accordance with design documents and BNI 24590-WTP-GPP-CON-3202, *Excavation and Backfill*.”

U.S. Pipe and Foundry Company document BRO-009 (2016), *TR FLEX Restrained Joint Ductile Iron Pipe and Fittings*, page 19, states that “[l]arge unbalanced thrust forces can be produced at dead ends, bends, tees, or other changes in direction of high pressure and/or large diameter piping systems.” It also states that “[i]n underground piping systems, an unbalanced thrust force can normally be resisted by providing a designed length of restraint at a change in direction where thrust forces are anticipated. Restrained joint pipe normally must transfer the thrust forces to the soil surrounding the pipeline.” The document further states that “[i]n situations where there is insufficient space to provide the designed restrained length, or where there are poor soil conditions, the entire section of line should be restrained or other external means of stability or restraint provided.” Finally, on page 20, it states that “[i]t is the responsibility of the Purchaser or Consulting Engineer to ensure that proper trench preparation, compaction, and pipe installation procedures are followed and that adequate restrained lengths or thrust block designs are provided to resist the unbalanced thrust loads generated by the installed piping systems.”

AWWA C600-93, Section 3.5.3, states that “[n]ewly installed pipelines are normally tested after backfilling. When unusual conditions require that pressure and leakage testing be accomplished before completion of backfilling or with pipe joints accessible for examination, sufficient backfill material shall be placed over the pipe barrel between the joints to prevent movement, and due consideration shall be given to restraining thrust forces during the testing. In particular, restrained-joint systems, which derive their stability from the interaction of the pipe and soil, should be backfilled prior to testing.”

AWWA C600-93, Section 3.6.5, states that “[a]ll dead ends on new mains shall be closed with plugs or caps that are suitably restrained to prevent blowing off under test pressure.”

AWWA C600-93, Section 4.1.1, states that the “[t]est pressure shall not exceed pipe or thrust-restraint design pressures.”



AWWA C600-93, Section 4.1.2, states that “[a]fter the pipe has been laid, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing. Each valved section of pipe shall be slowly filled with water.”

AWWA C600-93, Section 4.1.3, states that “[b]efore applying the specified test pressure, air shall be expelled completely from the section of piping under test. If permanent air vents are not located at all high points, corporation cocks shall be installed at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged or left in place as required by the specifications.”

AWWA C600-93, Section 3.8.3, states that “[t]he design pressure is the maximum pressure to which the pipeline will be subjected, with consideration given to the vulnerability of the pipe-soil system when the pressure is expected to be applied. In most cases, this will be the test pressure of the pipe, applied shortly after installation, when the pipe-soil system is normally most vulnerable.”

BNI document 24590-WTP-GPP-CON-3504, Section 5.3.7, requires “address[ing] and resolv[ing] the following items during preparation of the Pressure Test Data Sheet prior to the initiation of pressure testing of piping and/or vessels: . . . verify that the installed piping was installed and accepted to the current revision of the design documents. . . . Verify the configuration of the system to be pressure tested.” It also states: “[r]eview the following on the drawings and in the field: adequacy of vent/drain installations and need for modifications.”

BNI document 24590-WTP-GPP-CON-3504, Section 5.3.9, states that “[f]or pneumatic pressure tests, safety boundaries are determined from Appendix 6. When test parameters are greater than those provided in Appendix 6, use the calculation below and Table 2 to determine the safety boundary. The Stored Energy Calculation Sheet is to be included with the Pressure Test Report.”

BNI document 24590-WTP-GPP-CON-3504, Section 5.6.7, states: “[v]erify that the system being tested has been fully vented, if required.” Section 5.8 states that for hydrostatic/water leak tests, “[i]t is preferable that the system be filled from the lowest points and properly vented to avoid trapping air in the system.” This section also states that “[e]ntrapped air shall be vented from the system prior to the pressure test” and that “[e]xpansion joints shall have testing restraints installed when required to prevent any over-pressurization damage.”

Contrary to these requirements and as evidenced by the following facts, BNI failed to ensure that PCW piping was properly restrained before pressurizing the system, permitted fill and vent activities on the PCW piping to be conducted at an excessive pressure, and conducted hydrostatic testing on the PCW piping at pressures exceeding the design pressure:

1. Portions of the PCW system were excavated to permit the installation of valves in its 30-inch lines. Because of the slope of this excavation and possible erosion while the excavation was open, soil was also removed from a significant portion of nearby 12-inch dead-ended pipe sections (for future expansion of the system) that are connected to the PCW system by gripper ring joints. After the valves were installed, BNI permitted the PCW system to be pressurized up to 125 psi as part of the fill and vent activity in preparation for planned hydrostatic testing of the system. However, BNI did not ensure that the piping was adequately restrained with suitable backfill or by other means to prevent separation of piping at the joints. During the fill and vent activity, a 12-inch section of pipe separated, resulting in injury to a worker.
2. The limited access/safe boundary limits for the planned hydrostatic pressure testing of the PCW were set at ten feet; prior hydrostatic tests conducted on this system set the boundaries at five to ten feet. These tests assumed zero pneumatic stored energy, as noted on the Pressure Test Data Sheets. However, BNI did not consider pneumatic stored energy and did not determine or set an adequate boundary for the planned test or prior hydrostatic tests conducted on the PCW system. Post-event analysis by BNI calculated a minimum entrapped air volume of 894 cubic feet in the PCW system as designed and installed. Assuming that this entrapment occurred at the fill pressure of 125 psi and was subsequently compressed to the hydrostatic test pressure, the actual stored energy would correspond to a limited access/safe boundary limit of 300 feet, based on the BNI Pressure Testing procedure's methodology for safely conducting pneumatic pressure tests. In the best-case scenario where the 894 cubic feet was entrapped at atmospheric pressure before compression, the stored energy would correspond to a limited access/safe boundary limit of 50 feet.
3. During the November 2016 fill and vent activity in preparation for an upcoming hydrostatic test, the pipefitters pressurized the PCW system to approximately 125 psi (the pressure of source water from the fire water system) before attempting to vent the remaining trapped air. This pressure was excessive for simply filling the piping system and exceeded the pressure necessary for conducting a hydrostatic test in accordance with the AWWA C600 standard. This excessive pressure created thrust forces that were not properly restrained, creating a large amount of stored energy due to compression of entrapped air. Both of these factors contributed to the joint failure and worker injury.
4. Over the past decade, BNI has performed multiple hydrostatic tests of the PCW system, including the 12-inch line where the joint failed, at 1.5 times the system design pressure of 150 psi. The system design pressure was established by BNI with consideration of a variety of factors, including pressure rating of various system components, thrust restraint (provided by gripper ring if excavation is properly backfilled), and surge. The AWWA C600-93 standard specified in the Pressure Test Data Sheet states that newly laid pipe or any valve section thereof shall be subjected to hydrostatic pressure of at least 1.5 times the working pressure at the point of testing but does not permit the hydrostatic test pressure to exceed the design pressure. However, like multiple previous hydrostatic tests, the hydrostatic test planned for November 2016 would also have exceeded the PCW

system design pressure if the joint had not failed during the fill and vent process at a pressure of approximately 125 psi.

Collectively, these noncompliances constitute a Severity Level I violation.

#### **D. Training and Information**

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.”

Title 10 C.F.R. Part 851, Appendix A, Section 1, *Construction Safety*, subsection (a), states that “[f]or each separately definable construction activity (e.g., excavations, foundations, structural steel, roofing) the construction contractor must:...(2) [e]nsure workers are aware of foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the affected activity.”

BNI document 24590-WTP-LIST-CON-09-0001, Section 1, states that “[s]kill of the craft is defined as routine tasks performed by trained and qualified journeymen as outlined for each respective craft, where little or negligible potential exists for generation of hazards not addressed in standard work practices.”

Contrary to these requirements and as evidenced by the following facts, BNI failed to provide adequate and effective training and information on hazards and safeguards associated with fill and vent work duties:

1. Fill and vent activities are outside of the scope of activities that BNI determined to be routine for trained and skilled journeymen pipefitters. However, BNI did not effectively provide training or information to pipefitters on the potential hazards associated with these activities or appropriate methods to mitigate those hazards. In addition, design configuration issues permitting entrapment of air in the PCW were not identified or communicated to pipefitters assigned to the fill and vent activity.
2. The training provided by BNI that was most applicable to significant hazards and controls associated with this work activity (e.g., pressure testing, underground pipe installation, barricades and signs) was limited to documentation of required reading. The stated intent of BNI’s required reading is to provide a general familiarization through review of either a change summary or the introduction, purpose, scope, and table of contents of a procedure. For the three required reading topics noted above, training records indicate that one of the newly-hired pipefitters assigned to the fill and vent activity spent one minute each on required reading for pressure testing, underground pipe installation, and barricades and signs, indicating a lack of rigor in the training process.

Collectively, these noncompliances constitute a Severity Level II violation.

## E. Recordkeeping

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 CFR, Parts 1904.4 through 1904.11; 1904.29 through 1904.33; 1904.44; and 1904.46, ‘Recording and Reporting Occupational Injuries and Illnesses.’”

Title 10 C.F.R. § 851.26, *Recordkeeping and reporting*, paragraph (a)(2), states that contractors must “[e]nsure that the work-related injuries and illnesses of its workers and subcontractor workers are recorded and reported accurately and consistent with DOE Manual 231.1-1A, Environment, Safety and Health Reporting Manual, September 9, 2004.”

Title 29 C.F.R. § 1904.7, *General recording criteria*, subparagraph (b)(4)(i), states that “[r]estricted work occurs when, as the result of a work-related injury or illness: (A) [y]ou keep the employee from performing one or more of the routine functions of his or her job, or from working the full workday that he or she would otherwise have been scheduled to work; or (B) [a] physician or other licensed health care professional recommends that the employee not perform one or more of the routine functions of his or her job, or not work the full workday that he or she would otherwise have been scheduled to work.”

Contrary to these requirements and as evidenced by the following facts, BNI failed to accurately record the length of restricted duty for the injured worker. BNI did not accurately report the workplace injury into the DOE Computerized Accident/Incident Reporting System (CAIRS) database. The worker submitted two requests for restricted duty for six weeks each, and BNI management acknowledged/accepted both requests. However, BNI recorded in CAIRS that the worker was on restricted duty for 30 days instead of the actual (requested and accepted) 84 days, thereby under-reporting the restricted work duty.

This noncompliance constitutes a Severity Level II violation.

## II. REPLY

Pursuant to 10 C.F.R. § 851.42(b)(4), BNI 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 BNI chooses not to contest the violations set forth in this PNOV, then the reply should clearly state that BNI waives the right to contest any aspect of this PNOV. In such case, this PNOV will constitute a final order upon the filing of the reply.

If BNI 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 BNI 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), BNI relinquishes any right to appeal any matter in this PNOV and this PNOV will constitute a final order.

Please send the appropriate reply by overnight carrier to the following address:

Director, Office of Enforcement  
Attention: Office of the Docketing Clerk, EA-10  
U.S. Department of Energy  
19901 Germantown Road  
Germantown, Maryland 20874-1290

A copy of the reply should also be sent to the Manager of the DOE Office of River Protection.

### 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.



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

Washington, D.C.  
This 25th day of April 2018