



Department of Energy

Washington, DC 20585

July 20, 2022

Ms. Dena J. Volovar
President
Bechtel National, Inc.
12011 Sunset Hills Road
Suite 110
Reston, Virginia 20190

WEL-2022-02

Dear Ms. Volovar:

The Office of Enterprise Assessments' Office of Enforcement conducted an evaluation into an electrical arc event, as reported by Consolidated Nuclear Security, LLC (CNS) into the U.S. Department of Energy (DOE) Occurrence Reporting and Processing System under NA-UPO--CNS-UPFPROJ-2021-0004, on March 1, 2021. Bechtel National, Inc. (BNI) is a subcontractor to CNS for the construction of the Uranium Processing Facility (UPF) at the Y-12 National Security Complex, where this event occurred. The Office of Enforcement conducted a site visit at the UPF on July 13, 2021, to evaluate the facts and circumstances related to the event and identified concerns with BNI's implementation of the hazard prevention and abatement requirements in 10 C.F.R. Part 851 (Part 851), *Worker Safety and Health Program*.

The electrical arc event was a near miss with the potential for death or serious injury. The event occurred on February 10, 2021, at the UPF project site while a worker raised an aerial work platform that damaged the insulation on an energized, 480-volt temporary power line by entrapping it in the aerial work platform's vertical lifting chain, exposing the conductors and producing an electrical arc. Neither the ascending worker nor an associated lift spotter were injured during the event; however, the mast of the work platform sustained an arc burn.

Based on the Office of Enforcement's evaluation, BNI allowed subcontracted work to be performed in proximity to an energized electric power circuit without protecting employees from electric shock or potential electrocution, either by de-energizing the circuit and grounding it, or by guarding it effectively. BNI did not properly apply the hierarchy of controls while using an aerial work platform in proximity to an energized 480-volt temporary power line. Part 851 requires contractors to select hazard controls based on the following hierarchy:

1. Elimination or substitution of the hazards where feasible and appropriate.
2. Engineering controls where feasible and appropriate.



3. Work practices and administrative controls that limit worker exposures; and
4. Personal protective equipment.

BNI relied on the use of a spotter, a work practice or administrative control, to guide the ascent of the aerial work platform and prevent contact with the 480-volt temporary power line located in the work area. Other feasible options for hazard prevention were available for this work evolution. For example, the temporary power line could have been isolated to remove the electrical energy, relocated to an unoccupied area to eliminate the hazard, or shielded with an appropriate material to prevent contact with electrical conductors. If neither hazard elimination nor shielding were feasible, then appropriate hazardous energy controls were required to isolate the electrical energy, in addition to using a work practice or administrative control (e.g., use of a spotter).

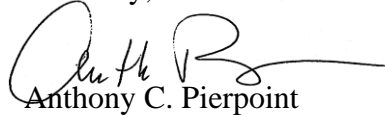
The Office of Enforcement recognizes that BNI identified the importance of maintaining adequate clearance between aerial work platforms and 480-volt temporary power lines in the *UPF Fireproofing Preparation and Application Job Hazard Analysis (JHA)*. However, the JHA did not consider hazard elimination or the use of engineering controls to ensure that contact with energized electrical conductors was avoided. Further, the Office of Enforcement acknowledges that BNI investigated the event, performed a causal analysis, and conducted an extent-of-condition review to identify human performance concerns associated with work at the UPF project site. Nevertheless, the focus on human performance issues (e.g., worker mental lapses while performing spotting duties) does not adequately address the application of the hierarchy of controls to eliminate or effectively mitigate workplace hazards where feasible and appropriate.

Finally, the Office of Enforcement evaluated BNI's corrective action plan (CAP) and determined that it did not adequately address the possibility of reoccurrence. BNI made improvements to prevent future contact with energized 480-volt temporary power lines, by adding strain-relief devices, applying additional labels, inspecting all existing temporary power lines, and preventing the use of uninsulated internal conductor wires (typically bundled within each 480-volt temporary power line). However, BNI did not effectively apply the hierarchy of controls in their CAP to eliminate or effectively mitigate workplace hazards as required by Part 851.

The Office of Enforcement has elected to issue this Enforcement Letter to convey concerns with how BNI ensures that Part 851 requirements are incorporated into the hazard prevention and abatement processes at the UPF project site. Issuance of this Enforcement Letter reflects DOE's decision not to pursue further enforcement activity against BNI at this time. In coordination with the National Nuclear Security Administration, the Office of Enforcement will continue to monitor BNI's efforts to maintain a safe and healthful workplace.

This letter imposes no requirements on BNI, and no response is required. If you have any questions, please contact me at (301) 903-4033, or your staff may contact Shannon Holman, Acting Director, Office of Worker Safety and Health Enforcement, at (301) 903-0100.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony C. Pierpoint", with a long horizontal flourish extending to the right.

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

cc: Teresa Robbins, NA-NPO-1
Dale Christenson, APMO-1
Michael Robinson, Bechtel National, Inc.
Kathy Brack, Consolidated Nuclear Services, LLC