Department of Energy
Washington, DC 20585

January 31, 2024

Mr. Leonard Ty Blackford
President and Program Manager
Idaho Environmental Coalition, LLC
1580 Sawtelle Street, MS 9101
Idaho Falls, Idaho 83402

WEL-2024-02

Dear Mr. Blackford:

The Office of Enterprise Assessments' Office of Enforcement has completed an evaluation into an event involving potential worker exposures to carbon monoxide (CO) at a concentration that was immediately dangerous to life and health (IDLH) at the Idaho Cleanup Project's (ICP) Naval Reactor Facility (NRF) as reported by Idaho Environmental Coalition, LLC (IEC) into the Department of Energy's (DOE) Noncompliance Tracking System under NTS-EM-ICP-IEC-DDOPS-2023-0010570, dated January 24, 2023.

The event occurred on January 10, 2023, when workers were operating a gasoline-powered welder generator inside the NRF-601 High Bay. Earlier in the day, IEC approved a work order change (WOC) for work order number 597489 to move the generator from outdoors to inside the high bay. The WOC included a warning that the generator produced harmful emissions that constituted a respiratory hazard. In response to the WOC, the workers established a safety boundary around the generator, inserted a flex pipe into the exhaust stack, and passed the flex pipe through the wall of the building to the outside. Shortly after workers started the generator, a CO area monitor placed above the exhaust stack alarmed. The job supervisor (JS) notified an industrial hygienist (IH) who immediately crossed the safety boundary to retrieve the CO monitor. The monitor displayed a CO level of 1448 parts per million (ppm), which exceeded the National Institute for Occupational Safety and Health IDLH level of 1200 ppm. Next, the JS crossed the safety boundary to turn off the generator while the IH alerted workers to evacuate the immediate area. Shortly after, the IH experienced physical symptoms associated with acute CO exposure. The IH was taken to the occupational medicine clinic for evaluation and was diagnosed with CO exposure. The IH was reevaluated the following morning and cleared to return to work with no restrictions. The JS reported to management that they did not exhibit symptoms of potential CO overexposure, and therefore did not report to the occupational medicine clinic.

Based on this evaluation, the Office of Enforcement identified concerns with IEC's implementation of 10 C.F.R. Part 851 *Worker Safety and Health Program* requirements in the areas of management responsibilities; hazard prevention and abatement; industrial hygiene; and recordkeeping and reporting. The specific concerns from this event that warrant management attention are as follows:

- IEC did not require explicit compliance with the manufacturers' instructions which stated that the generator should only be used outdoors. As a result, the generator was moved into the NRF-601 High Bay and operated indoors which resulted in CO exposure to workers.

- IEC did not adequately abate the CO hazard related to operating the generator in the NRF-601 High Bay. Specifically, IEC did not clearly define the means and methods in the WOC to control hazardous emissions from operating the generator indoors. The WOC only noted "[e]nsure…welding unit has been exhausted into a well-ventilated area outside of the building," but did not specifically state how to safely exhaust the emissions. As a result, workers used flex pipe that was not appropriately sized and did not seal the connection to the generator's exhaust stack, which allowed the exhaust to vent into the building.

- IEC did not adequately coordinate with industrial hygiene staff and work planning professionals during the WOC process to ensure appropriate monitoring equipment was available to assess the effectiveness of engineering controls. Specifically, discussions regarding engineering controls and industrial hygiene monitoring were informal. Furthermore, IEC lacked sufficient monitoring equipment which led to the usage of equipment that was not well suited for the required monitoring. As a result, IEC used an Industrial Scientific Gas Badge Pro, which is designed for personal monitoring, as an area monitor for monitoring CO from operation of the generator. The Gas Badge Pro is a small wearable unit with a small display. When the CO monitor alarmed, the IH was unable to view the display, crossed the safety boundary to retrieve and read the monitor, and was exposed to a potential IDLH atmosphere.

- IEC did not develop and communicate a response plan to respond to an alarming CO area monitor. Consequently, when the CO monitor was alarming workers did not activate a response to the emergency condition in the NRF-601 High Bay, nor did they evacuate the immediate area. Additionally, two workers (IH and JS) crossed the generator safety boundary, exposing them to a potential IDLH atmosphere.

- IEC did not report the CO exposure on the Occupation Safety and Health Administration Form 300 or in the DOE Computerized Accident Incident Reporting System database due to a misinterpretation of occupational exposure reporting requirements.

The Office of Enforcement acknowledges that IEC made timely notifications to DOE's Idaho Operations Office line management, promptly investigated the event, and prepared a causal analysis and corrective action plan (CAP). The Office of Enforcement also recognizes IEC's swift response in purchasing additional and appropriate sampling instruments. However, the Office of Enforcement is concerned that the CAP did not identify important corrective actions necessary to prevent recurrence. For example, the CAP did not identify issues related to the work order change process. Specifically, the work order change process did not require sufficiently detailed directions for implementing the engineering controls. As a result, the engineering controls were planned informally, leading to incomplete implementation. Further, a rebrief to all affected workers was not required which led to confusion regarding the engineering controls and the timeline for work restart in the NRF-601 High Bay.

The Office of Enforcement is issuing this Enforcement Letter to convey concerns with the January 10, 2023, CO exposure event. Issuance of this letter is in alignment with the Department's decision not to pursue further enforcement action at this time. Along with the ICP, the Office of Enforcement will continue to monitor IEC's efforts to maintain a safe workplace.

This letter imposes no requirements on IEC and no response is required. If you have any questions, please contact me 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,

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

cc: Lee Fife, Idaho Environmental Coalition, LLC
Connie Flohr, EM-ICP