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

National Nuclear Security Administration

November 20, 2023

The Honorable Joyce L. Connery
Chair, Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Chair Connery:

In accordance with our commitment in my September 15, 2023, letter regarding safety systems at the Plutonium Facility Building 4 (PF-4) at the Los Alamos National Laboratory (LANL), enclosed are Deliverable One, *Operations-Based Emergency Drill Summary Report* (FY23-0183), and Deliverable Two, *PF-4 Egress Analysis Pathfinder Calculation* (SBD-CALC-TA55-158, R0). Deliverable One provides the recorded evacuation times from a recent PF-4 evacuation drill. Deliverable Two models emergency egress based on the current maximum occupancy levels and future projected maximum occupancy levels at PF-4. In addition to the content of my interim response, these two deliverables, along with Deliverable Three, *MELCOR Parametric Study*, will collectively address the first bullet in your June 20, 2023, letter. The *MELCOR Parametric Study* is now expected to be transmitted by December 31, 2023.

Deliverable One, *Operations-Based Emergency Drill Summary Report*, documents the results of the June 28, 2023, emergency criticality evacuation drill that included evacuation of PF-4 personnel. The drill report documents the evacuation times from the PF-4 emergency exits. This drill validated corrective actions from a past drill and identified seven improvements and one deficiency, which LANL will address to strengthen future emergency responses. The improvements and deficiency were formally entered into the LANL issues management system, and the Los Alamos Field Office will ensure they are addressed.

Deliverable Two, *PF-4 Egress Analysis Pathfinder Calculation*, uses two methodologies for determining evacuation times: the *Society of Fire Protection Engineers Handbook of Fire Protection Engineering* and *Steering Mode*. Pathfinder parametric studies were also performed to represent orderly evacuation using various door opening combinations as may be directed by operations. These combinations were performed to support Deliverable Three, the *MELCOR Parametric Study*. The *MELCOR Parametric Study* will provide further insight on parameter importance to the Leak Path Factor (LPF).

Received by the Board 11.21.23

The Pathfinder modeling is consistent with previous information that the five-minute evacuation assumed in the current PF-4 Documented Safety Analysis (DSA) is reasonably conservative for current PF-4 occupancy levels. Calculations were also completed for projected occupancy of 1,000. These results indicate the five-minute evacuation time may no longer be conservative.

The National Nuclear Security Administration (NNSA) will continue to monitor PF-4 occupancy levels. Upon issuance of the *MELCOR Parametric Study*, NNSA will evaluate if there is a need to implement compensatory measures related to PF-4 occupancy levels while we complete development and implementation of the DOE-STD-3009-2014 compliant PF-4 DSA.

Should you have any questions, please contact Theodore A. Wyka, Manager, Los Alamos Field Office, at (202) 586-3471.

Sincerely,

Jill Hruby

Enclosures:

1. *Operations-Based Emergency Drill Summary Report* (FY23-0183)
2. *PF-4 Egress Analysis Pathfinder Calculation* (SBD-CALC-TA55-158, R0)

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