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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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November 25, 1994

The Honorable Victor H. Reis
Assistant Secretary for Defense Programs
Department of Energy
Washington, D.C. 20585

Dear Dr. Reis:

The Defense Nuclear Facilities Safety Board (Board) is interested in the process(es) implemented at the Los Alamos National Laboratory (LANL) in the design and construction of new facilities and major upgrades. Board staff and outside experts have reviewed preparations at LANL for the "Safety Testing of Pits Under Thermal Stress," also known as the "Fire Resistant Pit Test Program." The primary objective of this program is to study reactions of molten plutonium with other materials within full-sized pits from dismantled nuclear weapons. For this program, LANL began upgrading the structural capability of a portion of its Chemistry and Metallurgy Research building and had been constructing experimental apparatus. Subsequent to the Board staff review, the Department of Energy (DOE) informed the staff that it is canceling this program; however, observations concerning the design process are still of interest.

Based on Board staff observations documented in the attached report, it appears that even though the contract for the building upgrade had been placed and experimental apparatus was being built, LANL may not have fully identified the potential hazards associated with this program and had not demonstrated that the foreseeable hazards were addressed in the design process. No clear analytical process involving identification and mitigation of potential hazards was apparent. Thus, the analytical process was not consistent with the guidance of DOE Order 5480.23, *Nuclear Safety Analysis Reports*, which requires identification of all hazards associated with a facility and establishment of design and operational means to mitigate them. The Board staff also noted a lack of clear lines of responsibility and accountability concerning this project.

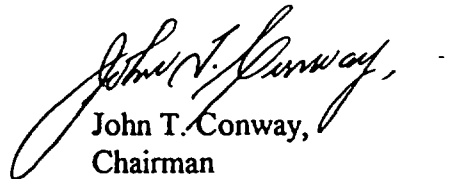
DOE is planning major facility upgrades and new defense nuclear facilities at LANL, as announced in the "Advance Notice of Intent to Prepare a Site-Wide Environmental Impact Statement for Continued Operations at LANL." It appears, at present, that design and construction processes at LANL may not be sufficiently well-defined and formalized to ensure that new and upgraded facilities will meet health and safety requirements. In particular, it is important that design process(es) followed by LANL include a thorough identification of hazards and that, where possible, the means to mitigate hazards be developed early in the design process.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that DOE provide the following report:

- A report identifying the formal process(es) LANL is following in the design, construction, and preparation for operation of new and upgraded defense nuclear facilities to identify those steps of the process(es) which are intended to identify and mitigate hazards. This report should also identify related technical management structure(s) including, in particular, lines of responsibility and accountability.

The Board requests that the above report be submitted within 60 days of receiving this letter. If you need any further information in this connection, please let me know.

Sincerely,



John T. Conway,
Chairman

c: The Honorable Thomas P. Grumbly, EM-1
Mr. Mark Whitaker, EH-6