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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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February 24, 2005

The Honorable Linton Brooks
Administrator
National Nuclear Security Administration
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0701

Dear Ambassador Brooks:

The Defense Nuclear Facilities Safety Board (Board) is reviewing the design of the Chemistry and Metallurgy Research Facility Replacement (CMR-R) Project at Los Alamos National Laboratory (LANL). To expedite the schedule, the National Nuclear Security Administration (NNSA) is planning to combine Critical Decision (CD)-2 (approval of performance baseline) and CD-3 (approval to start construction) for this project. After completion of the preliminary design, a design-build contract will be awarded to an architecture/engineering firm to finalize the design and construct the facility. This approach will essentially eliminate NNSA's formal review of the final design prior to construction.

The Board recognizes that from a safety perspective, completing CMR-R earlier is attractive because it would reduce nuclear hazards in the existing CMR facility and its aging safety systems. The Board also understands that in order to lower project uncertainty at CD-2 approval, NNSA expects the preliminary design package to be more developed than is usual, including an approved Preliminary Documented Safety Analysis. However, expediting the schedule by eliminating one of the design reviews and utilizing a design-build contract has the potential for the government to lose control of the design and construction of safety systems unless they have been meticulously defined in the design-build contract.

Department of Energy Manual 413.3, *Project Management for the Acquisition of Capital Assets*, cautions that "design-build can be used most successfully with projects that have well-defined requirements, are not complex, and have limited risks." The magnitude, complexity, and mission importance of CMR-R do not satisfy this caution.

The Board believes that for a design-build approach to be successful, intense oversight by NNSA and LANL will be required, using personnel experienced in the management and oversight of large, complex projects, in areas such as project management, cost estimating, safety analysis, process design, construction, and scheduling. However, the number of NNSA and LANL personnel experienced in these areas is limited.

The Board believes that without appropriate technical oversight of the design the success of the CMR-R project could be jeopardized. Experience to-date with the Hanford Waste Treatment Plant should be a cautionary example regarding use of non traditional approaches to large, complex nuclear construction projects. Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a briefing within 30 days of CD-1 approval to provide NNSA's rationale for the use of a design-build approach for the CMR-R Project and its plan to ensure that adequate staff will be assigned to this project between now and CD-2 approval. The NNSA briefing should specifically address those technical issues in which direct NNSA involvement will be necessary during the preliminary design and expectations for the level of direct federal involvement and the technical individuals or positions performing those functions.

Sincerely,

John T. Conway
Chairman

c: Mr. Edwin L. Wilmot
Mr. Mark B. Whitaker, Jr.