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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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June 28, 2006

The Honorable J. Clay Sell
Deputy Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20858-1000

Dear Mr. Sell:

The Defense Nuclear Facilities Safety Board (Board) has reviewed *Status of the Department of Energy Nuclear Criticality Safety Program for Calendar Year 2005* dated February 8, 2006, and was briefed by your staff on April 11, 2006. More recently, the Board has assessed the Department of Energy's (DOE) nuclear criticality training and experimental capability and the status of DOE's staffing in the area of nuclear criticality safety oversight.

The Board is encouraged by the increased influence being exerted by the Criticality Safety Support Group, the improved stability of funding for the criticality program, and the increased frequency of reviews under the Criticality Safety Monitoring Program. However, the Board is concerned about two items that are fundamental to the health of the DOE nuclear criticality safety (NCS) program.

The first item concerns shutdown and relocation of critical assemblies from Technical Area 18 (TA-18) at the Los Alamos National Laboratory to a new Critical Experiments Facility (CEF) at the Nevada Test Site. These critical assemblies provide hands-on training of NCS engineers and the capacity to perform critical experiments, both of which are indispensable components of a robust NCS program infrastructure. Although DOE's NCS annual report states that the new CEF is on schedule, subsequent information shows startup delayed until FY 2010 at the earliest. This schedule change places this vital capability at risk; criticality expertise must not be lost due to inactivity or attrition resulting from this delay.

The Board is aware of compensatory measures for conducting NCS training, such as the criticality safety courses being developed at the Lawrence Livermore National Laboratory which will include subcritical experiments. The Board is also aware of actions being pursued to maintain expertise in criticality experimentation, such as sending experimenters abroad to perform critical experiments. However, these compensatory measures must not be allowed to decrease efforts to begin experiments at CEF. Critical experiment capability in the United States is in a precarious position; loss of this expertise cannot be allowed to happen.

Second, many DOE site offices continue to be either unstaffed or understaffed in the area of NCS oversight. Some of the problems with contractor NCS programs can be traced to ineffective NCS oversight by site offices. Positions were posted by site offices in an effort to hire individuals for this purpose, but some of these positions were later canceled without being filled, and others were posted at pay scales that were too low to attract qualified personnel in a competitive job market. DOE's site offices, backed by commitments from DOE-Headquarters, need to ensure that adequate resources are available to provide effective NCS oversight. These resources include not only the numbers of personnel, but also funding for professional development activities that will improve their technical capabilities and effectiveness in performing NCS oversight.

Therefore, pursuant to 42 U.S.C. §2286b(d), the Board requests a report within 90 days to supplement the NCS annual report addressing the following:

- The status of federal NCS engineer programs at each site, including necessary staffing levels, plans and schedules to fill vacancies, interim compensatory measures, and progress on training and qualification.
- A more recent estimate of when operation of critical assemblies are expected to resume at NTS, and actions being taken to address delays in reestablishing this capability.
- The status and schedule of courses for NCS engineer training and plans for maintaining qualifications for critical experiment personnel until CEF is operational.

Sincerely,



A. J. Eggenberger
Chairman

c: The Honorable David K. Garman
The Honorable Jerald S. Paul
Dr. David H. Crandall
Mr. Mark B. Whitaker, Jr.