

January 14, 2000

Mr. W. Lee McVey
194 Freedom Court
Fremont, CA 94539-6267

Dear Mr. McVey:

Thank you for your letter of December 3, 1999, concerning the normal electrical distribution system at Lawrence Livermore National Laboratory (LLNL). In this letter, you have delineated design changes that could enhance the reliability of the electrical utility system. The Board's staff has also reviewed the electrical distribution system at LLNL and reported observations quite consistent with yours. However, the Board's staff review was somewhat more narrowly focused.

The focus of electrical safety reviews performed by the Defense Nuclear Facilities Safety Board (Board) and its staff is typically on safety-class and safety-significant emergency power systems. Because the normal electrical distribution system is not designed to withstand design basis events, e.g., earthquakes, it is assumed to fail, regardless of how reliable the system might be. Safety-class emergency power systems are required to supply power to safety-class loads during any loss of off-site power, even under accident conditions. However, as you mentioned in your letter, the design of the normal electrical distribution system should ensure that it is as reliable as can be reasonably achieved. This reliability typically includes providing power to the site from two independent, off-site sources.

The review of the Building 332 electrical distribution system mentioned in your letter was performed by members of the Board's staff on October 12–14, 1999. For reasons discussed above, the emphasis of this review was on the emergency power system, which is designated as a safety-class system in the Building 332 Safety Analysis Report (SAR). The Board's staff concluded that the safety-class emergency power system does not meet current nuclear industry requirements for safety-class systems. It has several deficiencies related to single failure, redundancy, and physical separation. Detailed observations of the Board's staff are documented in a staff issue report of November 23, 1999. The Board sent a letter to the Department of Energy (DOE) on December 21, 1999, that encloses this report and asks DOE-Headquarters to keep the Board abreast of DOE's action regarding the issues discussed in this report.

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Enclosed are the Board's letter and the staff issue report for your information. Other Board letters and staff reports are posted on our web site (www.dnfsb.gov) subsequent to their transmittal to DOE. I appreciate that you took the time to communicate your observations to the Board.

Sincerely,

John T. Conway
Chairman

c: Mr. Mark B. Whitaker, Jr.

Enclosures

*****SEE STAFF ISSUE REPORT UNDER LLNL 1999 12/21/99*****