

John T. Conway, Chairman
A.J. Eggenberger, Vice Chairman
John E. Mansfield
R. Bruce Matthews

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 694-7000



August 1, 2003

The Honorable Everet H. Beckner
Deputy Administrator for Defense Programs
National Nuclear Security Administration
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0104

Dear Dr. Beckner:

The Defense Nuclear Facilities Safety Board (Board) has been following closely the development of safety basis controls and startup activities for the new aqueous recovery line for plutonium-238 (Pu-238) scrap at Los Alamos National Laboratory (LANL).

Pu-238 is the dominant radioactive source term in glovebox operations in the LANL Technical Area-55 (TA-55) Plutonium Facility. A release of Pu-238 in TA-55 was the cause of multiple room contaminations and significant personnel intakes in March 2000. The accident resulted in a Department of Energy Type A investigation and subsequent corrective actions by the laboratory. Any future upset or accident involving Pu-238 in this unique facility could adversely affect the health and safety of the public, workers, and the environment, as well as national security.

LANL has been pursuing startup of the new Pu-238 aqueous recovery line for several years. In an April 23, 2002, letter to the National Nuclear Security Administration (NNSA), the Board observed that the potential hazards of this new line had not been adequately addressed. The Board requested that NNSA report on the resolution of deficiencies in hazard identification; hazard analysis; and selection of controls, including engineered controls and Technical Safety Requirements. NNSA responded on July 1, 2002; however, that response did little to address the cited deficiencies or improve the safety of this operation. As a result of subsequent comments provided by the Board, NNSA and LANL have since pursued improvements. In January 2003, LANL submitted to NNSA an updated process hazard analysis (PrHA) and new proposed controls. The Board reviewed this updated PrHA and proposed controls, and again provided comments to help resolve the remaining weaknesses in the safety basis. NNSA also provided LANL with comments on the updated PrHA. LANL issued another revised PrHA in May 2003, and it was immediately approved by NNSA.

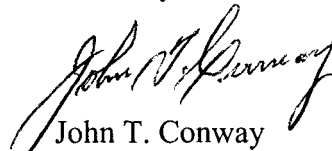
The Board's evaluation of the revised PrHA has revealed weaknesses similar to those previously identified by the Board. The enclosed report provides a detailed discussion of the

identified deficiencies and identifies measures for improving the safety of the recovery line. The actions that could improve safety include:

- designating safety-significant engineered controls to prevent the accumulation of flammable gases in the dissolver and filtrate storage vessels,
- implementing a Technical Safety Requirement control to track dose to the ion exchange resin to ensure it does not exceed safe levels of radiation exposure,
- designating safety-significant engineered controls to prevent the ion exchange resin from drying out,
- evaluating the safety impacts of the reformulation of the ion exchange resin,
- and designating the controls that prevent violent reactions involving hydroxylamine nitrate as Technical Safety Requirements.

Given the potential hazards of this new recovery line, the Board requests a briefing regarding resolution of the remaining issues before NNSA conducts its readiness review for startup of the recovery line.

Sincerely,



John T. Conway
Chairman

c: Mr. Ralph E. Erickson
Mr. Mark B. Whitaker, Jr.

Enclosure