

A.J. Eggenberger, Chairman  
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# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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July 28, 2009

The Honorable Thomas P. D'Agostino  
Administrator  
National Nuclear Security Administration  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Mr. D'Agostino:

On April 7, 2009, the Defense Nuclear Facilities Safety Board (Board) sent a letter to Secretary Chu outlining urgent concerns with the safety-class vault water bath system at Los Alamos National Laboratory (LANL). The Board received the National Nuclear Security Administration's (NNSA) response letter dated May 18, 2009, as well as a briefing by the Los Alamos Site Office (LASO) Assistant Manager on May 19, 2009. The letter and briefing described the compensatory measures and actions taken by NNSA and LANL to improve the safety posture of non-safety-class containers of plutonium-238 enriched, heat-source plutonium (HS-Pu) stored in the vault water baths. More specifically, LASO provided plans for a number of engineering improvements designed to increase the reliability of the vault water bath system. The Board agrees that, once implemented, these proposed improvements should significantly enhance the ability of the system to perform its safety function.

The Board understands that the primary approach being taken to improve the safety posture of HS-Pu storage is to ensure all such material is packaged in safety-class containers by June 2010. However, the Board disagrees with NNSA's assertion that all the non-safety-class containers presently stored in the vault water baths can currently survive for at least 18 months in air. There is no engineering data to support such a claim for 40 of these containers. While future analysis may support this position, the fact that the necessary data do not currently exist underscores the need to safely and aggressively pursue actions to improve the robustness of HS-Pu containerization.

The LANL contractor briefed the Board on May 20, 2009, on its plans to correct weaknesses noted by the Board with respect to the process used to identify and resolve operability issues for all vital safety systems. These plans included revising the vital safety system assessment (VSSA) and system health reporting procedures, increasing the number of qualified cognizant system engineers, augmenting the LANL staff with more experienced assessment personnel, and providing standardized training for performing VSSAs. The Board understands that LASO's goal is for LANL to complete the VSSAs and implement system health reporting for all vital safety systems by September 30, 2009.

The Board and its staff will continue to closely follow the progress of NNSA and LANL in meeting the scheduled milestones and commitments to correct the deficiencies in the vault water bath system, improve HS-Pu containerization, and strengthen the process to identify and resolve vital safety system operability issues at LANL.

Sincerely,

A handwritten signature in black ink, appearing to read "A. J. Eggenberger". The signature is written in a cursive style with a large, sweeping initial "A".

A. J. Eggenberger  
Chairman

c: Mr. Mark B. Whitaker, Jr.