

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

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March 13, 2007

The Honorable Thomas P. D'Agostino  
Acting Administrator  
National Nuclear Security Administration  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0701

Dear Mr. D'Agostino:

The National Nuclear Security Administration's (NNSA) current plan for safely conducting enriched uranium operations essential to national security relies upon continued operation of the 60-year-old 9212 Complex at the Y-12 National Security Complex. The Defense Nuclear Facilities Safety Board (Board) is concerned that continued operations in the aging 9212 Complex involve significant safety risks to workers and the public. NNSA's long-term plan is to replace this facility with a new Uranium Processing Facility (UPF). This proposed UPF is currently in the early stages of design and it is likely that the 9212 Complex will continue to operate for 15 or more years. To ensure public health and safety in the interim, the Board believes that an annual assessment of operations in the 9212 Complex should be performed to verify that its systems, structures, and components remain in an acceptable, reliable, and safe condition.

NNSA has identified numerous structural deficiencies that prevent the 9212 Complex from meeting current requirements for Hazard Category 2 facilities. Much of the building structure and internal systems (e.g., electrical and fire protection systems) cannot withstand required Performance Category-3 seismic loads, and portions of the building and systems cannot withstand lesser Performance Category-2 loads. Other facility systems and components (e.g., process systems) continue to deteriorate and increase operational safety risk. As a recent example, in early February 2007, several liters of acid solution containing highly enriched uranium leaked from flanged seals in a set of product storage vessels for the secondary extraction system. Degraded seals in the secondary extraction system had been known sources of prior leakage.

The Board and NNSA have previously discussed risk reduction at the 9212 Complex. In correspondence dated April 20, 2005, and November 28, 2005, the Board agreed that NNSA should aggressively pursue its plan to achieve near-term risk reduction in the 9212 Complex by (1) reducing material-at-risk (e.g., uranium solutions, oxides, and metals), and (2) completing

maintenance-related repairs. In addition, the Board requested that NNSA identify the modifications that would be implemented to support continued safe operations should the UPF project be delayed.

NNSA initiated a review to identify facility improvements necessary to ensure continued safe operation and briefed the Board on the results of this review on December 14, 2006. The recommended actions primarily aim to improve the facility's operational reliability, and would improve safety mainly by reducing material-at-risk. The review did not, however, adequately address the systematic and extensive upgrades that would be required to operate this facility for an extended period of ten or more years. NNSA has noted, and the Board agrees that major structural and process modifications would be impractical because of the cost involved and the likelihood that construction could significantly disrupt important national security missions. Recognizing these fiscal constraints and national security requirements, the Board advocates a regimen of increased vigilance and close observation to regularly assess the physical condition of the 9212 Complex (beyond the normal annual safety basis evaluation) as a means of ensuring reliable and safe operation. However, the Board remains concerned that the 9212 Complex may reach a point in the near future where adequate safety cannot be assured without significant investments to upgrade safety systems.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that NNSA provide: (1) a briefing, within 6 months of receipt of this letter on how NNSA will annually assess the adequacy of the 9212 Complex to support continued safe operations, and (2) an annual report and briefing to the Board on both the progress toward completion of the UPF project and the results of the annual assessment of the 9212 Complex. The first annual report and briefing should be provided within 1 year of receipt of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "A. J. Eggenberger". The signature is fluid and cursive, with a large initial "A" and "E".

A. J. Eggenberger  
Chairman

c: The Honorable J. Clay Sell  
Mr. Theodore D. Sherry  
Mr. Mark B. Whitaker, Jr.