

Peter S. Winokur, Chairman  
Jessie H. Roberson, Vice Chairman  
Joseph F. Bader  
Sean Sullivan

DEFENSE NUCLEAR FACILITIES  
SAFETY BOARD

Washington, DC 20004-2901



January 28, 2014

The Honorable Ernest Moniz  
Secretary of Energy  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary Moniz:

The Defense Nuclear Facilities Safety Board (Board) is closing Board Recommendation 2010-2, *Pulse Jet Mixing at the Waste Treatment and Immobilization Plant (WTP)*. The Recommendation expressed concerns with the Department of Energy's (DOE) previous technical approach to resolve safety-related pulse jet mixing issues. Since 2010, DOE has developed an entirely new approach, which was presented to the Board in a briefing that accompanied the Deputy Secretary's September 11, 2013, letter to the Board. Based on this new approach, the Board finds that the individual sub-recommendations to Recommendation 2010-2 are no longer relevant.

The underlying safety-related pulse jet mixing issues remain unresolved and include:

- Accumulation of fissile material at the bottom of the vessels, potentially leading to criticality;
- Generation and accumulation of hydrogen resulting from the accumulation of solids, potentially leading to explosions;
- Accumulation of solids that interfere with the pulse jet mixer control system, causing frequent overblows (discharge of air from the pulse jet mixer) that may lead to equipment damage; and
- The ability to obtain representative samples as a prerequisite for meeting safety-related aspects of the Waste Acceptance Criteria and management of criticality hazards.

A more complete list of open WTP safety issues is contained in the Board's Periodic Report to Congress dated December 26, 2013. The Board will continue to review and monitor the design and construction of WTP and will advise as necessary to ensure the adequate protection of the public health and safety.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter S. Winokur".

Peter S. Winokur, Ph.D.  
Chairman

c: Mrs. Mari-Jo Campagnone  
Mr. David Huizenga  
Mr. Kevin W. Smith