Department of Energy
National Nuclear Security Administration
Washington, DC 20585

May 15, 2008

The Honorable A. J. Eggenberger
Chairman, Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Suite 700
Washington, DC 20004-2901

Dear Mr. Chairman:

I am responding to your letter to Thomas D'Agostino, dated January 17, 2008. One of the key goals of the revision and implementation of 10CFR 830 Documented Safety Analysis at the Y-12 National Security Complex was to ensure a conservative hierarchy of safety controls to prevent and mitigate the hazards in Y-12 nuclear facilities. I appreciate the Defense Nuclear Facilities Safety Board's (DNFSB) vital role in providing oversight of the methodology used in developing safety basis and your resultant follow-up on concerns with the values being used for several factors supporting safety analysis at Y-12. As noted in your letter, we have been working with your staff to clarify the appropriate use of airborne release fractions (ARF) for accident analysis at Y-12, and the development of a plan to apply this methodology to existing and new facilities at Y-12. You were briefed on these activities on April 29, 2008.

In a recent DNFSB staff review of the Uranium Processing Facilities (March 13), B&W Y-12, LLC (B&W Y-12), and the Y-12 Site Office (YSO) conducted discussions on the applicability and selection of ARF and respirable fractions (RF) for Non-reactor Nuclear Facilities in addition to other accident analysis factors. Feedback from the review was encouraging and progress was made in developing a path forward to address concerns with the Y-12 site's selection of ARF and RF values. Y-12 will use the bounding value for ARF and RF from DOE-HDBK-3010-94, *Airborne Release Fractions/Rates and Respirable Functions for Nonreactor Nuclear Facilities,* (i.e. 1E-3 and 1.0 respectively, for uranium) and will address the unique burning characteristics of bulk uranium metal by applying a damage ratio. Appropriate damage ratio selections will have a supported technical basis that could include using the data from the experiments cited in the handbook. In addition, Y-12 has drafted a nuclear safety research and development proposal to conduct new bulk uranium burn testing. Such testing, when conducted, could better define the technical basis of a Uranium ARF and allow updating site accident analysis parameters and potentially the Department of Energy handbook.

Based on the results of the briefing and the staff discussions, B&W Y-12 and YSO also came to agreements on several other parameters required to conservatively estimate accident consequences. The enclosure outlines the overall approach for the selection of other accident

analysis factors to be used at Y-12 for the development of nuclear facility Documented Safety Analyses.

I appreciate the efforts of your staff as we proceed to develop a path forward at Y-12 to clarify the use of bounding airborne release fractions and other parameters applied in accident analyses at Y-12.

If you have any questions, please contact Michael Thompson at (202) 586-6058.

Sincerely,

Robert L. Smolen
Deputy Administrator for Defense Programs

Enclosure:
Addendum

cc w/enclosure:
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