



**Department of Energy**  
**National Nuclear Security Administration**  
Washington, DC 20585

March 28, 2008

OFFICE OF THE ADMINISTRATOR

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

Dear Mr. Chairman:

The Department of Energy (DOE) and its predecessor agencies and programs have amassed a large base of knowledge and experience with respect to the prevention and mitigation of Red Oil reactions in nuclear material processing facilities. Since its inception, the Defense Nuclear Facilities Safety Board (the Board) has assisted DOE in documenting and applying that knowledge base to ensure the safety of DOE nuclear facilities. Notably, in November 2003, the Board published DNFSB/TECH-33, "Control of Red Oil Explosions in Defense Nuclear Facilities."

As the Board is well aware, the National Nuclear Security Administration (NNSA) is constructing the Mixed Oxide Fuel Fabrication Facility (MFFF) at the Savannah River Site to produce mixed oxide fuel for commercial nuclear reactors from surplus weapons-grade plutonium oxide. The MFFF includes a solvent extraction process that creates the potential for Red Oil reactions in the facility. The NNSA's contractor, Shaw AREVA MOX Services (MOX Services), has evaluated and applied the experience and knowledge accumulated within the DOE complex in designing the MFFF to prevent or mitigate Red Oil reactions. MOX Services specifically evaluated the contents of DNFSB/TECH-33 during the design of the MFFF solvent extraction process and concurrent safety analyses.

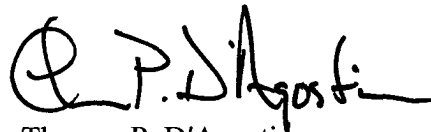
The NNSA program staff has reviewed the MFFF design and determined that appropriate safety features and controls have been incorporated to prevent or mitigate Red Oil explosions. The NNSA is requesting that the Board provide a narrow technical review of the MFFF aqueous processing design with respect to whether the intent of the findings and recommendations of DNFSB/TECH-33 have been adequately incorporated. The NNSA and its contractor will fully cooperate with the Board and provide ready access to such facilities, personnel, and information as the Board considers necessary to complete this review. Please contact Sam Glenn, an employee of the NNSA located at DOE's Savannah River Site, at 803-952-4288 to arrange information requests.



In accordance with Public Law 105-261, the MFFF will be licensed and regulated by the Nuclear Regulatory Commission (NRC) and MOX Services will be the license holder. We understand that the NRC plans to complete this licensing review by 2010 or 2011 depending on the duration of the associated hearing. Red Oil is one safety issue being evaluated by the NRC during the safety review of the license application at the MFFF. We also understand that the NRC will not issue a license until the Commission is satisfied that this issue and other issues are resolved and that all the requirements of 10 CFR 70 are met. Although we are confident that the Red Oil issue can be resolved safely based on decades of operating experience in facilities using similar technology, NNSA would value the Board's assessment of this issue to help us guide MOX Services' resolution of the issue through the licensing process. Please understand that this request is being made to assist the NNSA as the owner of the MFFF and is not intended to prejudice the relationship of the NRC and MOX Services.

If you have any questions, please contact me or Joe Olencz, Associate Assistant Deputy Administrator for Fissile Materials Disposition, at 202-586-4124.

Sincerely,

A handwritten signature in black ink, appearing to read "T. P. D'Agostino". The signature is written in a cursive style with a large initial "T" and "P".

Thomas P. D'Agostino  
Administrator

cc: M. Whitaker, HS-1.1