

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2003

**TO:** J. K. Fortenberry, Technical Director  
**FROM:** D. F. Owen, RFETS Site Representative  
**SUBJECT:** RFETS Activity Report for the Week Ending February 7, 2003

**Plutonium Stabilization and Packaging System (PuSPS).** RFETS has completed approximately 1,350 DOE-STD-3013 containers (not counting those in a reject/rework status). Kaiser-Hill now estimates that as many as 1,950 DOE-STD-3013 containers will be required to complete the RFETS metal and oxide packaging campaign.

PuSPS operations personnel reported that some sparking was observed with a batch of less-than-80% oxide that had been through the furnace stabilization cycle this week. The sparking is similar to another instance of sparking observed in a oxide batch in early January and discussed in the site rep. report of January 10<sup>th</sup>. The sparking only occurred when striking the oxide with a steel tool to breakup clumps of oxide as part of obtaining a proper moisture measurement sample. The main difference with this instance being that the oxide contained only plutonium (with other contaminants), not uranium plus plutonium. As with the prior instance, RFETS did not believe that this is a pyrophoric reaction, but the batch was resent through the stabilization cycle. RFETS is adding this instance to a technical review paper being developed on this issue. The paper is expected to be completed within the next few weeks, at which time other (non-sparking) tools may be authorized for use.

On Thursday, the site rep. observed PuSPS oxide material preparation activities (feed receipt through furnace loading). While no procedural steps were observed to be missed, the site rep. did not consider that the reader-performer protocol as established by Building 371 management for these operations was being consistently followed. The site rep. discussed this observation with DOE-RFFO personnel and Building 371 management. Building 371 management indicated that they would reemphasize their expectations for use of the reader-performer protocol to PuSPS operations personnel. (3-A)

**Building 776/777 Deletion of Authorization Basis (AB) Criticality Controls.** As reported on December 24<sup>th</sup>, DOE-RFFO had approved deleting criticality controls (i.e., criticality accident alarms and associated surveillances) from the Building 776/777 AB subject to the condition that defined prerequisites were completed. In mid-January, Building 776/777 had declared the prerequisites were met and began operations under the revised AB. One of the prerequisites called for transuranic (TRU) waste containers packed prior to April 2002 to meet certain mass limits based on a whole container, 95%-confidence assay scan. Late last week, Building 776/777 management determined that two waste containers exceeded the required mass limits based on whole container, 95%-confidence assay scan data (personnel had relied on other, less conservative scan values). A subsequent search of the facility by independent teams discovered two additional TRU waste containers not meeting the prerequisite. Kaiser-Hill has removed the containers from Building 776/777. Kaiser-Hill determined that a key lessons-learned for other major RFETS plutonium buildings that are planning to delete AB criticality controls is to perform an independent verification of completion of the defined prerequisites. (1-C)