

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 18, 2005

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** R. Todd Davis/Donald Owen, Oak Ridge Site Representatives  
**SUBJECT:** Activity Report for Week Ending February 18, 2005

A. Warehouse Criticality Safety/Conduct of Operations. On Tuesday, during a vault to vault transfer of material, Warehouse operations personnel noted that criticality safety mass limits (both vault and overall facility limits) for the containers being transferred were exceeded (double contingency was maintained). The operation was stopped and criticality safety personnel were contacted and provided guidance for initial response actions. Initial investigation showed that at least 25 other containers that had been received at the Warehouse since mid-January 2005 exceeded the mass limits. Full evaluation of the extent of this condition is in progress by BWXT and YSO.

BWXT investigation to date has determined that a contributing factor was that the container loading limit for the particular material form and container size was increased in mid-2004 for the generating facility; however, the corresponding limit was not revised for Warehouse storage. The 25 containers noted above were loaded to comply with the increased limit in the generating facility but those loadings exceeded the Warehouse limit. In discussion with the site rep., BWXT criticality safety personnel stated that the analysis supporting a revised Warehouse limit has not been started. There was no requirement for the generating facility to ensure that the Warehouse could accept and store the containers.

Applicable procedures required two verifications that the containers met criticality safety requirements: one before the containers are offloaded from the on-site transfer vehicle and another before storing the material in the vaults. Investigation on the implementation of these verifications is ongoing by YSO and BWXT. Information obtained to date indicates a lack of operations personnel knowledge and precision in accomplishing the two required verifications, and a lack of readily available data to accomplish the verifications. The level of detail in the procedures to accomplish the verifications is also under review.

On-site transfers of nuclear material to the Warehouse have been suspended pending review of this event by BWXT. YSO management has requested that BWXT management review the event, causal factors and corrective actions with YSO prior to resuming on-site transfers. As this event was determined not to meet external reporting criteria dealing with criticality safety, BWXT reported this event as a Significance Category 4 Management Concern. Significance Category 4 reports require no follow-on reporting of investigation results and corrective actions. The significance of the investigation results and level of corrective actions likely to be required may warrant upgrading the significance category for this event.

B. Purification Facility Emergency Exercise. As a part of the startup preparations for the Purification Facility, BWXT conducted an emergency preparedness exercise that simulated a release (spill) of acetonitrile (ACN). The drill included relocation of the Technical Support Center (TSC) to a remote location due to simulated habitability concerns. During the drill, a Material Safety Data Sheet (MSDS) was used to develop the spill response; however, the MSDS that was used on-scene was different than the MSDS used at the remote TSC location. This led to confusion over the appropriate course of action. A specific emergency response plan that identifies actions for an ACN spill has not been developed. Command and control concerns were also identified during the exercise. Additional emergency preparedness drills/exercises will be conducted prior to facility startup.