

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 21, 2004

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending May 21, 2004

**Authorization Basis (AB):** LANL nuclear facilities have declared several potential inadequacies in safety analysis (PISAs) recently. CMR declared a PISA on lack of controls for gasoline, fuel oil, and high explosive shipments near CMR. Such controls are assumed to be in place by the current AB. Radioactive Liquid Waste Treatment Facility (RLWTF) and Waste Characterization, Reduction, and Repackaging Facility (WCRRF), both in TA-50, have declared PISAs related to institutional welding issues (site rep weekly 4/16/04). TA-55 has declared PISAs on both discrepant Type A shipping drums and the bench-scale Pu-238 aqueous recovery operation (both discussed below). TA-18 and TA-55 have each declared PISAs related to container breach scenarios. It is positive that these issues are being reported; however, it may be worthwhile for NNSA and LANL to review them collectively to determine if there are systemic, institutional issues possibly related to the age of some of these ABs (i.e., time between reviews/updates), and the functionality and effectiveness of the selected controls.

**Plutonium Facility (TA-55):** NNSA has approved the corrective action plan (CAP) in response to the Pu-238 uptake event last August (site rep weekly 2/20/04). The CAP assigns actions to both NNSA and LANL; because of interdependencies, both must complete their actions on time for success. Last Tuesday (5/11), TA-55 declared a PISA on the bench-scale Pu-238 aqueous scrap recovery process. TA-55 recently resumed this process based on a hazard analysis submitted with the TA-55 AB update package two years ago but not yet approved (site rep weekly 5/7/04). Questions center on applicability of approved controls for the full-scale line (not yet started up) to the bench-scale process.

NNSA and LANL have established a joint team to re-review the two-year-old proposed TA-55 AB update (site rep weekly 3/12/04). NNSA intends to preserve independence by having separate personnel involved in the final approval review. Any additional updates would be incorporated into the NNSA safety evaluation report instead of revising the submitted safety analysis report. While expeditious, it would be less confusing if the AB was made complete and current prior to approval so that the safety analysis report and technical safety requirements were stand-alone documents.

**Transportation:** As a result of drop tests on DOT 7A packages, NNSA and LANL have imposed restrictions for on-site shipment of 55 gal drums containing fissile material (site rep weekly 11/7/03). Drums weighing 300 lbs or less are compliant to 49 CFR 173.465 requirements. Heavier drums can be shipped subject to a road closure and vehicle speed restrictions (35 mph). NNSA recently reported that about 65 % of the waste drums on site exceed 300 lbs; most of these are solidified waste; and about 6 % (~1,200 drums) both exceed 300 lbs and are in a dispersible form. LANL is evaluating the safety basis implications, such as for TA-54 Area G where the drums are considered safety-class. LANL is also preparing a plan to minimize generation of the heavier, non-solidified drums.

**Radiation Protection:** On May 5<sup>th</sup>, NNSA directed LANL to recalculate personnel internal dose estimates for the last year using the biokinetics model and reference man weighting factors from ICRP 30 and 26, respectively. The ICRP 30/26 approach was developed in the early 1980s, and a newer model and weighting factors are available (ICRP 60/66). However, the Radiation Protection rule (10CFR835) mandates use of ICRP 26. LANL had started to use the newer model with the older weighting factors (a possible data-to-model compatibility issue) and is planning to evolve to ICRP 60/66. The issues here may be applicable to other sites. An update to 10CFR835 may be warranted.