

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 19, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending September 19, 2003

Weapons Engineering Tritium Facility (WETF): WETF is proceeding systematically and appears to be on track for full Technical Safety Requirement (TSR) implementation in November.

Radioactive Liquid Waste Operations: On Wednesday, the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) discovered a leak at a weld in the receipt and storage tank for TA-55 transuranic (TRU) caustic waste – the highest activity waste stream entering this facility. About 300 gal of waste leaked into secondary confinement, which is equipped with an automatic sump pump. There was no environmental release. Tank level appears to coincide with the leak site and is at about two-thirds tank capacity (2500 gal). TA-55 has secured discharges going to this tank.

The site rep understands that waste neutralization, transfer, and receipt procedures are under review. The tank is about two decades old. A thorough tank integrity inspection and an operations and maintenance review appear to be warranted. An extended period without caustic waste receipt capacity could lead to a liquid waste backlog in TA-55 and mission impacts. The RLWTF is an aging facility being considered for replacement (site rep weekly 10/11/02).

Radioactive Solid Waste Operations: DOE and LANL have committed to shipping about 2,000 drums of higher-wattage TRU waste from TA-54 to WIPP by the end of FY04. This effort – referred to as the "Quick-to-WIPP" initiative – will result in a significant risk reduction for TA-54 once it is completed (site rep weeklies 11/1/02, 7/18/02). Progress was slow early this year but is improving. As of Thursday, LANL had shipped 1312 drums to WIPP this fiscal year, including 140 of the higher wattage drums. LANL is currently making about 3 WIPP shipments per week and expects to be making 4 per week by January. Cost per drum has dropped about 4-fold due to efficiency improvements. About 300 of the higher-wattage drums are problematic because they need to be repackaged, requiring close coordination on authorization basis, work planning, and operations. Overall, this risk reduction effort appears poised for success if fully-resourced.

LANL has about 2,400 m³ of TRU waste that is oversized (e.g., gloveboxes) and has been stored in about 300 fiberglass-reinforced wooden crates for years. While the total source-term is lower than the drums discussed above, issues with the integrity of these boxes (one collapsed a few months ago) and with combustible loading make these a concern. Last summer (2002), LANL started up the Decontamination and Volume Reduction System (DVRS) as a radiological facility to begin processing the crates and putting the waste into a form suitable for WIPP. The site rep understands that DVRS operations have been curtailed and that DVRS is unfunded for FY-04. This is unfortunate for two reasons. First, DVRS provides a pathway for addressing the crate integrity and combustible material concerns. Second, DVRS requires manually intensive operations that would benefit from allowing an appropriate learning curve for the workforce – a benefit that could be lost from curtailing operations.

Critical Experiments Facility (TA-18): TA-18 has nearly completed installing the safety class temperature scram systems in SHEBA and Planet and is about to begin testing. In a July 9th letter, the Board raised questions about the ability of these systems to perform their intended function, how their designs are reviewed, and how they will be verified when installed. Per the Board's letter before removing interim controls, NNSA needs to provide a report to the Board that demonstrate that the temperature scram systems will operate reliably and effectively to prevent overheating assemblies. A well-conceived testing program could assist in addressing these issues.