

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2001

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers, Jr.  
**SUBJECT:** Los Alamos Report for Week Ending December 21, 2001

Staff member C. Coones was on site this week reviewing the TA-55 fire suppression system.

**Plutonium Handling and Processing Facility (TA-55):** The TA-55 fire suppression system is safety significant because it protects workers and provides defense-in-depth for safety class systems. The staff has observed that a number of questions linger on the system (e.g., site rep weekly 12/7/01). Recently, DOE and LANL have been working to address these. DOE and LANL agree that more information is needed on the sprinkler system, fire pumps, and storage tanks, and that timely resolution is required to support the TA-55 Authorization Basis resubmittal in April 2002.

At this time, DOE and LANL believe that there are no imminent safety concerns that warrant operational restrictions. Current information indicates that 2 of about 20 sprinkler heads in the most hydraulically remote north-side room would have major flow degradation (~18%) and 3 others would have slight degradation (3%). The symmetrically located south-side room may also have a similar number of heads with degraded flow, but that remains to be evaluated. Transient combustibles in these spaces are low, based on monthly surveillance. Three of the four fire pumps deliver required flow at pressure. The fourth will be tested within the next few weeks. Questions on pump suction head, minimum storage tank level, and HEPA filter cooldown spray requirements all need to be addressed.

LANL believes that there are no design impacts on the fire loop replacement project as a result of updating internal fire suppression requirements. LANL has asked the project to update the flow analyses, using the revised assumptions, and determine the pump characteristics that could be the basis for the new Technical Safety Requirements. The staff believes that flow analyses of interim configurations, such as during system tie-in and pump house upgrades, are also warranted to ensure adequate interim fire suppression is available.

**Decontamination and Volume Reduction System (DVRS):** This week, DOE withheld concurrence with LANL categorizing DVRS as a low hazard, radiological facility (site rep weekly 12/14/01). Both the chemical and radiological hazards require further assessment. DOE observations included the following: (a) the proposed categorization was incorrectly based on mitigated consequences (e.g., it credited fire suppression); (b) the analysis did not consider accident consequences from explosive hazards that LANL indicated may be present; (c) cited radiological inventories were inconsistent; (d) significant, non-conservative uncertainties may exist in the currently projected container inventories, possibly by up to an order of magnitude based on comparisons of historical records to modern assay results; and (e) worker hazards, such as falling into the shear bailer, were not addressed. Based on these observations, it appears that there may be a further reduction from earlier estimates of the number of containers that can be processed before the facility transitions up to Hazard Category 3.

DOE requested LANL to resolve these issues and hold a formal comment disposition meeting in January to expedite hazard categorization.