

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 27, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers, Jr.

SUBJECT: Los Alamos Report for Week Ending October 27, 2006

Waste Operations: Last week, Area G discovered one 55-gal drum and 37 85-gal drums that are unvented; the safety basis requires drums to have filtered vents to prevent flammable gas buildup. Area G has equipment but no authorized process for venting drums and is developing a path forward.

Radioactive Liquid Waste Treatment Facility (RLWTF): RLWTF continues to prepare to replace the leaking caustic waste receipt tank during November. Yesterday, ultrasonic inspection determined that the existing tank's side wall is structurally adequate but that the tank top has indications of weaknesses that may affect load path during lifting. LANL is reviewing the situation.

Chemistry and Metallurgy Research Building (CMR): CMR is continuing fire watches and has proposed a Justification for Continued Operation (JCO) to address wing-to-wing flash-over potential.

LANL's investigation report on the June hood fire indicates that it was due to a spill of a pyrophoric liquid, most likely tri-ethyl aluminum, from a cylinder that originated in TA-21 (DP Site) sometime in the past and was probably moved first to TA-54 and then to CMR; the cylinder's actual history is unknown; it was incorrectly assumed to contain uranium hexafluoride. Causal factors that LANL identified center on control of chemicals and incomplete implementation of integrated work management (IWM) – two longstanding issues at the laboratory (site rep weekly 6/16/06).

Criticality Safety: NNSA's team of criticality safety experts was on site this week to determine the status of the LANL criticality safety program. As of Oct 1st, LANL has walked down and triaged about half the lab's 564 fissile material operations, including all those considered to be high or moderate risk; while walk-downs of the remaining ~300 lower risk operations have slowed, LANL considers that they constitute no serious safety issues. Separately, the NNSA Site Office has assigned a competent individual responsibility for the LANL program and hopes to accelerate his qualification.

The NNSA team's preliminary conclusions are that criticality safety risks here are now well understood and are being well controlled using interim processes, as opposed to the situation a year ago; the strong field presence of LANL experts and the new database of interim criticality safety documentation appear noteworthy; LANL has much to do to establish a compliant program, which could take 2 to 3 years; that said, budgetary decisions made within the last week increase the lab's criticality safety program funding by about 20 % for FY-07, which is encouraging. The NNSA team expects to issue a report in November, and LANL expects to issue an updated schedule for corrective actions in December (site rep weeklies 9/8/06, 8/4/06, 3/10/06, 1/13/06, 12/16/05).

Radiological Facilities: The site rep understands that LANL is considering moving sources from TA-18 to TA-35-2/27 in the near future to support downgrading TA-18 from a Hazard Category 2 (HC-2) nuclear facility. In 2000, TA-35-2/27 was downgraded from HC-2 to a radiological facility by crediting encapsulation for roughly 1 kCi of sealed sources (i.e., 20 times the HC-2 threshold). As discussed in a Board letter (6/26/06), the technical basis for automatically crediting encapsulation to contain nuclear material during a fire is questionable; exacerbating this situation by increasing the inventory without further analysis and controls may be ill-advised (site rep weeklies 2/3/06, 7/29/05).