DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 29, 2005

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: T. D. Burns Jr. and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending July 29, 2005

Am-241 Contamination Event: On Monday, LANL determined that a staff member in the Sigma Complex (TA-3-66 – a radiological facility) had become contaminated with Am-241 eleven days earlier while unpacking vials of uranium nitride from TA-55. During the period that contamination was undetected, the employee unknowingly spread contamination both in the facility and off-site, including his home. LANL is pursuing surveying and decontamination activities both on and off-site, including surveying the nearly two hundred people who work in Sigma and their work-spaces. As of Thursday, about a dozen people were placed on special bioassay monitoring; initial bioassay results should be available in mid-August. LANL has secured affected areas and is initiating an investigation.

Critical Experiments Facility (TA-18): Also on Monday, LANL determined that the fissile content of four recently re-packed 110 gal drums had not been reviewed by the criticality safety group and that these drums exceeded the criticality limit by factors of up to 2.25. This was discovered during a criticality review to support shipping the drums. Local posting refers to guidance given elsewhere for the type of material involved. There are similarities between this event and problems observed during simulated fissile material handling for the TA-55 pad ORR (site rep weekly 7/8/05); together, they indicate issues with procedure clarity, training, supervision, and oversight of fissile material handling.

Federal Oversight: Ineffective assessment processes – both federal and contractor – contributed to the decision last summer to suspend LANL operations (site rep weekly 12/31/04). The resumption reviews provided breadth-and-depth perspective on the state of operations; however, the quality of that picture will decay with time without a mature contractor assessment system. To compensate for this, NNSA had planned to increase federal staffing at LASO by 20 % in FY-06, including increased field presence by facility reps and subject matter experts. Those plans have been cancelled. LASO now plans to rely highly on a mature contractor assurance system that currently does not exist at LANL and that will take some time to develop regardless of the outcome of the contract competition. The federal approach to oversight of LANL now appears counter to the reality that challenges are growing; LANL is a unique national institution in transition, particularly from the standpoints of mission, safety, security, infrastructure, business practices, and the unprecedented contract change.

Radiological Facilities: Since 1997, NNSA has approved downgrading more than a dozen nuclear facilities to radiological facility status, including at least two facilities where NNSA credited ANSI source encapsulation as permitted by the applicable DOE standard (STD-1027). From review of the available information for these two facilities (TA-35-2, TA-35-27), it is not clear that these sources would maintain their integrity at end of life in a major facility fire, which could result in unanalyzed on-site and off-site consequences. If these were designated as nuclear facilities, LANL would be required to develop and implement engineered and administrative controls to address such scenarios; this same rigor appears warranted for these radiological facilities. Furthermore, the level of oversight by both LANL and LASO drops precipitously for facilities that are categorized as radiological. Increased attention to radiological facilities lab-wide appears warranted to ensure that residual risks are identified and are addressed appropriately (site rep weeklies 1 /21/05, 9/24/04).

Administrative: This is the last weekly report for Burns, who is leaving the federal service and relocating to the Washington D.C. area. It has been an honor to work for the Board and a privilege to serve at LANL.