DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 15, 2002

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending February 15, 2002

Critical Experiments Facility (TA-18): Flattop, a spherical benchmark critical assembly, has been shutdown since February 2000, except for one special DOE-approved test. Last month, LANL submitted to DOE a positive Unreviewed Safety Question Determination (USQD) involving a Flattop interlock that is described in the safety basis but does not exist. The interlock was intended to prevent resetting the SCRAM unless the three control rods are fully retracted (their minimum reactivity position). As is, an inexperienced operator could quickly reset the control system after a SCRAM, move the safety blocks in while control rods are partially inserted, and cause an unanticipated criticality, albeit with lower reactivity than existed before the scram. Rather than install the interlock, LANL proposes adding a TSR administrative control that cautions operators not to reset the SCRAM before the control rods are fully retracted. DOE action is forthcoming.

The site rep understands that this discrepancy was first recognized in February 2000; that the missing interlock was one of eight Flattop discrepancies described 19 months ago (July 2000) in a LANL evaluation of the authorization basis design configuration; and that Flattop has operated once during this period (August 2000), which was for a special test to resolve a safety basis question on the reactivity insertion rate of the safety blocks. DOE and LANL are pursuing questions raised by these events, including timeliness and coordination among safety basis activities. Site rep weeklies, dated 1/11/02 and 2/1/02, discusses related issues.

Facility Management: LANL is pursuing standardization of practices and consolidation of facility management units. Overall, these developments are positive; however, the resulting realignments and other changes will have safety implications. As part of this effort, clarifying and strengthening the facility manager's role may be appropriate. A facility manager is in a unique and challenging position that, in many organizations, carries responsibility for all activities within the facility. His or her chances of success improve if the facility's boundaries are well-defined and manageable in scope. The facility manager then needs necessary and sufficient authority to meet these responsibilities, as well as full organizational support from above and below. Reenforcing the facility manager's role can improve efficiency and effectiveness, which will also improve safety.

Work Controls: LANL is piloting an expanded skill of the craft (SOC) approach for work control that will reduce the requirement for task hazard analyses (site rep weekly 9/14/01). LANL defines SOC work as discrete tasks to be done by either a qualified craftsman with the expertise to identify and control the hazards or by workers using a written procedure that specifies the hazards and controls. No separate, formal task hazard analysis is done when work is authorized as SOC.

The expanded approach moves away from authorizing SOC tasks by specific task type to controlling it by worker qualification (i.e., a controlled qualification criteria checklist). Preliminary feedback from the pilot includes: "facility coordinators find the [SOC approach] much more efficient to be able to provide input to the process by simply declaring work to be SOC; the craft and/or zone management then concur or amend as necessary." While some craft work can probably be safely and efficiently performed using this approach, there also appears to be cases where a simple craft evolution might have unforeseen consequences on operations and safety unless it is properly reviewed and controlled.