

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 29, 2008

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/David Kupferer/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending February 29, 2008

A. ORNL Building 3019/Uranium-233 Operations. In mid-February, Isotek declared a Potential Inadequacy in the Safety Analysis based on non-conservative assumptions associated with lifting and handling in Building 3019 (see the 2/15/08 site rep. report). Isotek subsequently declared an Unreviewed Safety Question. Revised calculations to determine the impact of a load drop have not been completed. Last week, Isotek submitted a Justification for Continue Operations (JCO) to DOE-ORO to support completing the campaign to receive traps containing uranium-233 hexafluoride from the Molten Salt Reactor Experiment (MSRE) at ORNL. The JCO recommends new Specific Administrative Controls for limiting lift heights and requiring that the crane operator be qualified. In addition, the critical lift program has been identified as a safety basis administrative program. Isotek recommends that DOE-ORO accept the risk for the receipt of the remaining MSRE traps (about 8). Following the MSRE trap campaign, all heavy-load lifting and handling activities will again be suspended. DOE-ORO approved the JCO this week.

B. Hazardous Material Delivery and Storage/Feedback and Improvement. On February 13th, five large tanks for propane storage were delivered to the Highly Enriched Uranium Materials Facility (HEUMF) construction site. Each tank was then filled (from a tanker truck) with about 800 gallons of propane. The tank filling was performed without nuclear safety screening to address any impact to nearby nuclear facilities, particularly Buildings 9212 and 9215. Previously, propane (used for facility heating) was delivered to HEUMF in much smaller containers. The Plant Shift Superintendent office had alerted Building 9212 and Building 9215 management of the tanks on February 14th, noting that one of the tanks was on the east side of HEUMF in direct line-of-sight to Buildings 9212 and 9215. The tank on the east side of HEUMF was then moved to the north side of HEUMF out of direct line-of-sight of any nuclear facilities. While the tank had been moved, no formal critique had been called to evaluate the lack of nuclear safety screening regarding filling of the tanks at the HEUMF construction site. Following inquiry by YSO late last week, B&W conducted a critique of the event on Tuesday. Lack of clear roles, responsibilities and prompting mechanism(s) for appropriate nuclear safety screening of hazardous material delivery to a construction site such as HEUMF was evident during the critique. B&W follow-up investigation is in progress.

C. Near Miss During Heavy Machine Movement. A near miss occurred on Thursday when B&W hoisting and rigging personnel were moving a swager machine previously used for depleted uranium operations. Hoisting and rigging personnel lifted the 11-ton swager machine from a loading dock to a flatbed truck. A few minutes after placement on the flatbed, the swager machine began to slide. One individual immediately recognized the movement and called for all personnel to move away. The swager machine slowly slid off of the flatbed and fell to the ground with a minor spread of contamination. During the critique on Friday, B&W determined that the work package called for radiological controls personnel to provide on-scene direction for contamination control on the flatbed (e.g., use of plastic sheeting); however, other specific requirements or guidance governing the machine placement and configuration on the flatbed were not evident. The machine placement configuration including use of plastic sheeting as well as flatbed incline and load placement on the flatbed were noted by B&W personnel as factors requiring further investigation.