DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 14, 2001

TO: J. K. Fortenberry, Technical Director
FROM: D. F. Owen, RFETS Site Representative
SUBJECT: RFETS Activity Report for the Week Ending December 14, 2001

Pressurized Steam System Near Miss. In Building 374, a work crew was troubleshooting a large hydraulically-operated pressure reducing valve in a 100-140 psi utility steam system when the valve stem packing was expelled and a puff of steam was released to the room. Fortunately, no personnel were injured. The site rep. has the following observations based on initial information available:

- This is a large, complex valve, and the troubleshooting effort was not intended to breach the steam system. The crew was attempting to remove the valve actuator from the valve body but in the process removed the valve packing gland fasteners allowing for steam pressure to eject the valve stem packing material and release steam. The task instructions provided no more detail to accomplish the actuator removal than "Uncouple the actuator from the 100# reducing valve."
- This effort was planned with no valve technical manual, valve drawings or other valve design information being referenced (and apparently not readily available).
- The Job Hazard Analysis for this effort identified a steam leak as a potential hazard requiring a control of "double valve isolation by LO/TO [lockout/tagout] to penetrate actual system." This control, however, was not implemented as the stated intention was not to breach the steam system. A single valve isolation (but not under a formal LO/TO) was in effect, fortunately, due to on-scene actions by facility utility personnel, but not as a result of work planning.

Fact-finding and development of corrective actions is in progress by RFETS management. The site rep. considers this near miss will likely show deficiencies in execution of many of the functions of Integrated Safety Management. The site rep. will continue follow-up.

Recommendation 94-1. DOE-RFFO informed the site rep. that Kaiser-Hill has completed processing of all liquids (actinide and reagent) removed from Building 771, thereby completing this effort ahead of the March 2002 milestone in DOE's 94-1 Implementation Plan.

Use of Engineered Controls. The site rep. observed recent efforts by Building 771 and Building 371 to further advance use of engineered controls for deactivation activities at RFETS. For removal of raschig rings from several drained tanks, Building 771 has developed a ventilated, glovebox-like enclosure around a portion of the tank to allow for a hole cut and conduct of raschig ring removal. In Building 371, a vacuum tool has been developed (site rep. report of July 6th) to improve the efficiency and safety of raschig ring removal in numerous, large tanks. This vacuum tool has been shown to greatly reduce the radiological airborne environment for workers (and allow for lower levels of personal protective equipment) than with use of manual scooping tools. For dismantlement of various piping and components, a new, large, confinement tent is being completed in Building 771. The new tent will incorporate improved, larger, downdraft work tables and downdraft features are included in the tool storage and wastebox areas, all to minimize airborne contamination in the tent and facilitate component size reduction. (3-B)