DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 20, 2007

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJECT: Activity Report for the Week Ending April 20, 2007

Staff members E. Elliott, S. Lewis, S. Stokes, and J. Troan were on-site to review various issues at the Waste Treatment Plant, Tank Farms, Solid Waste Operations Complex (SWOC), and Plutonium Finishing Plant.

Aerosol Generator Fire: CH2M Hill Hanford Group (CHG) personnel were unable to reproduce the flash flame in an aerosol generator (see Hanford Activity Report 4/6/2007) even though various postulated failure modes were introduced. The vendor claimed that the only way a flame could have resulted was a loss of nitrogen or a buildup of loose carbon. The presumed cause of the flash flame was the release of a piece of hot carbon that had accumulated in the heater box. Workers had not performed maintenance on this type of test equipment since 2003 because the operating manual did not require it, although it had been periodically performed before then. A technical bulletin from the vendor identifies a need to periodically clean the heater. The affected equipment, a TDA-5B, was reported to be the only equipment available to test the efficiency of HEPA filters when the airflow is greater that 1,000 cubic feet per minute. CHG identified the following actions to prevent recurrence: performing the vendor-suggested preventive maintenance (PM) and adding it to the periodic PM program, requiring a supervisor to be present when the equipment is used, developing and implementing a formal operating procedure for the test equipment, and using two nitrogen bottles with independent regulators as an engineered control to minimize the probability of a loss of nitrogen.

Washington Closure Hanford (WCH): WCH requested a delay in their declaration of readiness for the Integrated Safety Management System (ISMS) Phase II verification until October 30, 2007. The ISMS Phase II verification was contractually required to be completed by May 26, 2007. WCH provided the Richland Operation Office (RL) with compensatory measures to be taken until the ISMS Phase II verification is completed. These measures focus on deferring high risk work until after verification and providing senior management oversight for medium risk work. Some of the activities categorized as high risk are the remediation of the 618-7 burial grounds and excavation and sorting at the 118-K-1 burial ground. RL is currently composing a response to the request.

Criticality Safety: The scope of a criticality problem with waste drums at SWOC (see Hanford Activity Report 3/16/07) has increased. The assessment team conducted additional detailed reviews of the Criticality Safety Evaluation Reports because of the initial finding. During the detailed reviews, Fluor Hanford did a comparison of the measured fissile mass in drums and historical values and the historical values were determined to be biased low. Fluor Hanford plans to resume moving some waste containers with low fissile material in the near future while they resolve problems associated with containers with higher fissile mass. Two members of the Criticality Safety Support Group (CSSG) were on-site to review actions being taken to address the criticality safety problems.