DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 17, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending July 17, 2009

Board staff members T. Barker, J. Blackman, and B. Caleca and outside experts J. Stevenson and N. Vaidya were on-site to review the Waste Treatment Plant structural design and construction.

Tank Farms: The contractor discovered several anomalies in the valve pit in AP Farm and subsequently prohibited the use of any of the valves in the pit for waste transfers. The valves provide a safety-significant function for preventing misroutes during waste transfers. Three valves have residue on them that may have been caused by leaks during transfers within the last few years. There is an estimated gallon of standing liquid present on the floor of the pit, but bulk leakage is designed to drain back to the tank. The valve pit has safety-significant leak detection, but it did not actuate. Dried solids in the area of the pit drain suggest that the waste level may have been sufficiently high that the leak detector should have actuated. The contractor will perform a functional test on the leak detector to determine if it is operable.

Funnels used to guide remote manual valve operators and/or the valve stems on two other valves in the pit are damaged. Additionally, cables used for instrumentation have become entangled with the mechanical interlocks on two other sets of two valves. The cables were likely moved onto the valves during painting of the pit floor several years ago but not removed when the job was completed. Additionally, a pool of liquid, believed to be condensation, was found below the encasement for a waste transfer pipe connected to a valve pit in AW Farm.

Plateau Remediation Contractor: DOE completed its Phase I assessment of ISMS. The team concluded that there were no deficiencies that would prevent approval, but approval is contingent on the contractor addressing the seven opportunities for improvement (OFIs). The OFIs included weaknesses in skill-based work planning and the role of supervisors and rigor of hazard identification. There was also an OFI because the implementing procedures do not demonstrate independence between the Radiological Control and the line organization.

Waste Treatment Plant: The Office of River Protection conducted surveillances of two vendors that are providing safety-related equipment and indentified technical issues in the implementation of the commercial grade dedication (CGD) process. One of the vendors was fabricating HEPA filter housing units and the other was fabricating activated carbon bed absorber units, and both were using NQA-1 CGD processes. Both vendors did not adequately identify critical characteristics based on design criteria that supported the safety function of the equipment. Additionally, the acceptance criteria and methods to verify acceptability were not adequately demonstrated. ORP noted other issues, including inadequate configuration control. The contractor is working on a plan that addresses short- and long-term corrective actions.

River Corridor Closure Project: Twice this week workers at 100D/DR entered into a high radiation area (HRA) without wearing the required dosimetry. In both cases, the dosimetry was being worn but was inadvertently dislodged and the workers entered the HRA without it. Contractor management recognizes the similarity of these events with the event last week in which a lapel air sampler was not worn (see Activity Report 7/10/09). It appears that the events this week were caused by inadequate attention to detail.