DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 30, 2011

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending September 30, 2011

R. Quirk was off-site this week.

Waste Treatment Plant: The contractor completed a gap analysis that compared the nuclear safety requirements in DOE Standard 3009 and the instructions provided in the project's safety analysis procedures. Several significant gaps were identified, such as the following requirements that are not addressed by the project's procedures: identify safety-related assumptions that will require TSR coverage; evaluate the magnitude of the consequences of beyond design basis accidents; and document pathways for large-scale releases to the environment, and estimate consequences and preventive features for such a release.

The site rep observed a meeting in which the contractor Project Director and his senior managers discussed what is required to construct a DSA compliant with DOE Standard 3009. The Nuclear Safety Manager provided a high-level breakdown of the planned DSA development process while managers asked questions. It was decided that training for the senior managers would be scheduled, and in particular, a session on the development of hazard analysis was requested. In general, it appeared everyone understood that significant effort would be required over the next few years to construct the DSA even though some at the meeting expressed concerns about trying to complete the design while assisting in completion of a 3009-compliant DSA.

618-10 Burial Ground: The contractor has modified their plans to remediate bottles of contaminated liquids that have been found in the burial ground (see Activity Report 7/29/11). They now plan to break open the bottles while submerged in grout in a steel tray placed in the trench. The contractor believes submerging the bottles will reduce the chance of airborne release and mitigate any energetic reactions. They have placed limits on the volume of liquids that can be handled at one time and plan to survey each bottle before processing to look for anomalies. The contractor plans to start testing to demonstrate the proof-of-concept in the next few months.

Plateau Remediation Contractor: The Project Manager for the Waste and Fuels Project completed a review under the Management Observation Program that identified a potential negative trend in the conduct of work. The review focused on events that are caused when operations personnel accept equipment, services, or decisions provided by others that resulted in increased risk to worker safety or injury. The reviewer cited three examples of this trend, including an event in which a worker was injured trying to apply 1,500 foot-pounds of torque to a fastener of a box. Operations, maintenance, and safety professionals agreed that this torque could be applied manually using a standard torque wrench. Only after a worker suffered a serious injury trying to apply the required torque was a hydraulic-driven wrench purchased. The reviewer noted several causes or influences that result in an overwhelming urge to succeed, which causes workers to accept the deficient condition. Management often condones the practice by participating in the expedited resolution of the issue without recognizing they are reinforcing the "make it work" mentality. The reviewer suggested several corrective actions, including better communications and collaboration between designers and operators, and a holistic approach to work planning with an improved process to resolve noted deficiencies.