

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 27, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending March 27, 2009

Tank Farms: On two consecutive days WRPS workers and supervisors failed to follow a procedure for obtaining a slurry sample from the 242-A Evaporator. Verbatim compliance with this procedure is required and the procedure clearly indicates that any change requires approval of the ALARA Joint Review Group. On both days workers, supervisors, and shift managers intentionally deviated from the procedure when equipment problems were encountered until DOE facility representatives questioned the unacceptable behavior.

100 K Project: Normal electrical power was lost to all 100 Area facilities during switchyard testing by Electrical Utilities (EU) personnel. The switchyard is located in the 100 K Area and the testing required removing one of the two normal sources of 230kV power. The EU work document had a step to notify the K West Shift Manager of the work scope, but the phone number in the work package was incorrect. Rather than determining the correct phone number or walking across the street to inform the K West Shift Manager, the EU workers and supervisors chose to continue the testing. A subsequent unexpected actuation of a protective relay opened the breaker to the remaining power source. The K West Shift Manager noticed the workers by the switchyard after the power was lost and subsequent imprecise communications between the Shift Manager and EU personnel resulted in power being restored to the 100 Areas before the 100 K Area was ready to restore power. The premature power restoration led to restarting the previously running and standby service water pumps, which resulted in a water hammer that separated an eight-inch mechanical coupling and caused a service water system leak. The vulnerability of the service water system and pump design was known for at least 18 months when a similar event occurred, but the design error had not been corrected.

Plutonium Finishing Plant (PFP): A drum containing fissile material tipped over, resulting in an injury to the worker who was moving it. The worker was using a five-wheeled dolly to move the drum through an area with a large (one-inch) expansion joint in the concrete. Workers knew of the tendency for the wheels of the aging dollies to bind as well as for the wheels to stick as they moved over uneven surfaces. Suggested corrective actions for a similar event last year included using two people when moving the drums over uneven surfaces. Supervisors were present as a single worker was moving this drum over the uneven area, a wheel caught in the joint, and the worker was pulled over the heavy drum as it fell.

Building 327: A worker entered a high radiation area (HRA) in the basement of Building 327 without the required electronic dosimeter (ED), but this was not noticed by the HRA guard. Various levels of supervision and management took actions, including bringing the ED to the worker and notifying the supervisor in the HRA of the error, but the worker was allowed to continue working even though the total dose received was indeterminate.

Technical Staff Qualification: The site rep observed the final qualification walk-through for the Richland Operations Office (RL) Fire Protection Safety System Oversight (SSO) Engineer in the 2706-T Facility. The SSO Engineer was knowledgeable of the safety-significant (SS) system and appropriate questions were asked by RL managers. Completing the walk-through in a facility with a larger SS fire protection system, such as PFP, could have been more challenging.