

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 11, 2009

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending September 11, 2009

W. Linzau was off-site this week. Board staff member R. Raabe was on-site to observe a value engineering session on loading sludge into containers for transport to the central plateau.

Radiochemical Processing Laboratory (RPL): Driven by a 20-year life extension of the hazard category (HC)-2 RPL, the contractor is implementing major changes in the DSA and TSR. The format of the DSA will now be consistent with DOE-STD-3009. The major TSR control will be a Specific Administrative Control on the inventory of radioactive material, but the TSR limits will not apply to material deemed to be in robust forms. The material exempt from the new LCO limits and accident analysis includes the entire radioactive inventory in Isotopic Heat Sources (IHSs) and some of the material in Type B shipping containers and Tritium Producing Burnable Absorber Rods (TPBARs). The Pu-238 in the IHSs is not included in the inventory because the DSA notes the IHSs are resistant to vaporizing or fracturing into respirable-sized particles. Similar justifications are used for much of the inventory in the shipping containers and TPBARs.

The new accident analysis concludes that the exposure to the maximally exposed off-site individual (MOI), 1,900 feet away from the facility, is 4.0 rem TEDE from particulates and 3.3 rem TEDE from gases. DOE-STD-1189 notes that doses at this level would require consideration of safety-class (SC) controls, but this standard is not invoked by the contract, and there are no SC controls. Some safety-significant (SS) systems in the facility, such as the radioactive exhaust ventilation system (REVS), are being downgraded from SS, but the REVS will be maintained as a vital safety system. The current DSA identified the REVS as SS because it is a significant contributor to defense-in-depth.

Office of River Protection (ORP): ORP issued a revision to the River Protection Project System Plan and concluded that waste from the single-shell tanks should be retrieved by 2041 and all tank waste should be treated by 2045. The model used to develop these dates assumes: the Waste Treatment Plant is operational by December 2019; a second Low Activity Waste (LAW) facility will be operational in 2021; and a new Aluminum Removal Facility (ARF) will be operational in 2022. Once the ARF is operational, it would pre-treat all waste going to the Pretreatment (PT) facility in order to reduce the amount of vitrified waste and the time required to complete the mission. R&D work for the ARF will be funded in FY2010 and FY2011.

U Canyon D&D: On consecutive days personnel exceeded the void limits in radiological work permits (RWPs) but did not stop work as required by procedures.

Tank Farms: The contractor determined the PISA associated with double-valve isolation (see Activity Report 9/4/09) is an unreviewed safety question.

100K Project: The contractor completed the demolition of the K East Basin and is finalizing plans for retrieving the contaminated soil below the former structure. Controls on the slope of the excavation will ensure the adjacent K East Reactor building is not adversely impacted by the remediation efforts.