

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 15, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers / R. T. Davis

SUBJECT: SRS Report for Week Ending September 15, 2000

HLW Contamination Event: On Tuesday, an operator was contaminated during transport of a glove bag frame from F-Tank farm to the waste pretreatment area. The frame had been used during tank sampling activities in a contamination area and had been released about a week earlier (i.e., surveys had been performed to move it to a clean area). However, subsequent surveys of the frame indicated significant transferable contamination (800,000 dpm beta-gamma). WSRC surveys of other operators involved in this activity, as well as routes and vehicles used for the transfer, have not identified any other spread of contamination. WSRC is investigating whether initial surveys of the frame missed the contamination or the frame was contaminated after the surveys were performed. WSRC has identified that an unconditional release procedure (a formal process for releasing material to a clean area) should have been performed. Corrective actions are being pursued.

HB-Line: HB-Line Phase I began processing mixed scrap about two weeks ago based on satisfactory resolution of pre-start readiness assessment findings (site rep weekly 9/1/00). As a part of the safety basis for this activity, WSRC performs testing and analysis of material to ensure the dissolver hydrogen concentration will not exceed 25% of the Lower Flammability Limit (LFL). Last week, sample analysis results indicated that the hydrogen concentration may exceed 25% LFL in the dissolver head space for some material. WSRC completed a draft engineering evaluation to support increasing the concentration limit to 90% LFL. However, DOE-SR concluded this was not appropriate and directed WSRC to pursue other options for this material. WSRC is currently evaluating several options and appears to be leaning towards crediting the safety-significant glove box exhaust system as supplying sufficient air purge to maintain the hydrogen concentration limit. Safety basis changes will likely be required.

Tank 19 Heel Removal: WSRC began installation of transfer pumps into a tank riser last week to prepare tank 19 for closure. A water lance mounted on the bottom of the pump mast is used to move waste (mainly sludge and zeolite) as the mast is installed. However, WSRC has been unable to fully install the mast because the waste is less mobile than expected. The mast is currently about 3 feet above the tank bottom. WSRC is performing a temporary modification to support the mast at its current level and will likely use the installed mixers to mobilize the waste beneath the pump mast so that it can be lowered.

This week, WSRC also finalized safety basis controls associated with the air piston pump that will be used during heel removal. WSRC identified accident scenarios involving aerosolizing waste through the pump eductor that require safety-class controls. Controls include eductor location relative to waste level, monitoring HEPA filter radiation levels, and visual verification of pump performance.