

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 5, 2000

TO: K. Fortenberry, Technical Director

FROM: M. Sautman and S. Stokes, Hanford Site Representatives

SUBJ: Activity Report for the Week Ending May 5, 2000

A. K-West Basin Integrated Water Treatment System (IWTS) Testing: In-pool testing was further delayed pending resolution of software issues associated with the IWTS programmable logic controller (PLC). Necessary software changes were completed earlier this week and then successfully validated by the vendor using an emulation set-up. Once the software has been loaded into the PLC, testing in-pool testing will resume. This is the last test remaining prior to the readiness assessment which is now planned for May 22, 2000. (1-C)

B. Project W-314, Tank Farm Restoration and Safety Upgrades: CH2MHill Hanford Group (CHG) has completed its corrective actions related to the welding quality assurance issues and released work on safety class/significant equipment and systems. (1-C)

C. Use of flexible transfer lines for transfer of high level waste(HLW): As a result of the S-103 transfer line leak, CHG Operations has determined that transfers from the S and SX farms will be accomplished using above ground transfer lines. This type of transfer line was successfully used during the SY-101 transfers that occurred earlier this year. CHG's decision results from the fact that they could not determine, with sufficient assurance, that leaks of this type would not be repeated. The S and SX tank farms are the only farms with the particular configuration that lead to the S-103 leak. The Site Representatives will follow-up on the ALARA analysis, transfer pipe configuration, and shielding/field controls used to safely accomplish these transfers. (3-A)

D. Uranium/Thorium Storage: The Site Reps completed a review of uranium and thorium storage at Hanford (excluding material covered by Rec. 94-1). The vast majority of the >1800 MT inventory consists of unirradiated fuel assemblies, oxides, bulk pieces, sources, and other stable forms. One possible exception is 260 30-gallon drums containing depleted uranium metal turnings, chips, and fines that are considered to be possibly pyrophoric. These drums were excavated from the 618-4 burial ground and are being stored outside pending a decision by the Department of Energy (DOE) on how to stabilize them. The Site Rep examined the current condition of the drums, reviewed the procedure for handling drums, and discussed with DOE, Bechtel, and Environmental Protection Agency personnel past problems that Fernald has experienced with pyrophoricity and overpressurization. Although the drum contents have been sampled, the current reactivity of the uranium metal was not determined. The drums were originally filled with mineral oil to inhibit any reactions and mineral oil was added recently if it had leaked out. The headspace gas in some drums was found to exceed the lower explosive limit. The excavated drums are now vented and overpacked, but another 900 or so drums are to be removed later. The procedure requires the use of a grounding system, non-sparking tools, and infrared thermometers. Contingencies address the possibility of a temperature increase, explosion, and breaching. Work is to be stopped if the drums are bulging. (3-A)

cc: Board members

