DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 24, 2003

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending January 24, 2003

Waste Treatment Plant: While Bechtel National Inc.'s (BNI) concrete consultant initially believed the cracks at the High-Level Waste Facility were due to plastic shrinkage, he now believes they are settlement cracks after examining them and reviewing weather records. Consultants working for both the Board and Office of River Protection had previously reached this same conclusion. BNI's consultant believes that while the cracks are not desirable, they will not cause any impacts on the structural behavior of the concrete. Compressive strength and slump data for these placements meet specifications. He also doubts whether any of the cracks would reach the rebar 2" below the surface, but the Site Rep has not heard any commitments to confirm this yet. ORP's consultants question whether the code's use of a 1.3 factor for increasing embedment length for top bar is adequate in light of the extent of subsidence shown by the pattern cracking. BNI believes that they are meeting the code and that there are no contractual requirements to go beyond the code. BNI's consultant strongly recommended that BNI implement the standard practice of performing a late revibration of the concrete to prevent future formation of settlement cracks. However, the Site Rep did not hear any commitment to postpone future placements until the necessary procedure changes can be made to incorporate this recommendation which is a concern since additional cracks were found this week at the Pretreatment Facility. At this time, ORP is waiting for BNI to complete their evaluation and recommend a path forward. (I-B, C)

Plutonium Finishing Plant (PFP): Filtrate solutions accumulate in a large, geometrically unfavorable, underground tank outside of PFP until they are transferred to tank farms. Nondestructive analysis performed on the heel remaining after a recent transfer indicated an upper range for the plutonium content that exceeded the mass limit and left only a single contingency (i.e., no moderation from organics) for criticality safety purposes. This is a bit surprising since the measured value exceeded the previous holdup amount plus the total plutonium in the solutions that had been transferred into this tank. Recovery actions are ongoing.

T Plant: There was an inadvertent movement of the T Plant crane during maintenance activities the previous week. There was a potential for injury to workers located on the crane maintenance platform as well as the bridge of the crane. Following a slight movement of the crane due to accidental movement of the controls, the crane operator had an electrician open a switch on a power panel in the crane cab to deenergize the crane. The 1930's era panel did not work properly and the crane remained energized, so when the levers were subsequently repositioned, the bridge movement occurred. Work continued without notifying facility management of the issue. While the facility self identified this information in the critique process, this occurrence is the latest example of continuing operation problems in the facility despite improvements in the formality of operation driven by the failed readiness reviews for spent fuel removal. (III-A)

cc: Board Members