DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 19, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman
SUBJ: Activity Report for the Week Ending March 19, 2004

Waste Treatment Plant (WTP): Even with several modifications, the Pretreatment (PT) vessel vent process system cannot accommodate the airflow of more than one of the lag storage and blend vessels (total of 5 non-Newtonian tanks in PT) running at full sparge. In order to address this and also reduce air compressor requirements, engineers plan to operate sparge tubes and pulse jet mixers (PJM) on an intermittent basis following a design basis event and possibly venting into the C5 (black cell) ventilation system. As researchers near completion of their original scope of work, there are differing opinions regarding to what degree additional testing vice engineering analysis should be used to support the remaining design and safety analysis work. For instance, mixing tests to date have focused on continuous operation of sparge tubes and PJMs, not intermittent operation. The staff is concerned that senior management's reported desire to stop further testing may make it difficult to develop a defensible justification for the use of intermittent mixing and address any resulting operational issues. Engineers also believe that some of the Important-to-Safety (ITS) controls discussed in last week's report may not warrant ITS classification which would reduce some of the impacts to the design. The development of the recommended configuration to address hydrogen in the High-Level Waste Concentrate Receipt Vessels is still encountering significant challenges with the vessel vent capacity and space for the waste recirculation pumps. (III)

The Board's staff has expressed concern with Bechtel National Inc.'s (BNI) proposed methodology for justifying not fireproofing some structural steel. In addition, BNI has been evaluating the credibility of a seismic-induced fire because some fireproofing and many fire barriers are not expected to withstand a seismic event. In order to possibly address these concerns, BNI is doing some very preliminary research to see if seismic-interlocks might be able to preclude fires by shutting off power, and thus eliminating ignition sources, following a seismic event. BNI is also considering adding additional fire sprinklers and fire barriers around the lower sections of structural steel and classifying the entire sprinkler system as ITS to reduce the impacts of non-seismic fires on the structural steel's strength. These ideas are barely beyond the conceptual stage and much work needs to be performed to see if they are even feasible. (III)

Spent Nuclear Fuel Project (SNFP): In last week's report, the expectation that Fluor Hanford (FH) would identify the root causes as well as corrective actions and compensatory measures for deficiencies prior to resuming operations was discussed. However, FH decided to only apply corrective actions for the direct causes of the accident and resumed operations Monday morning. A site rep review of the implementation of the Hoisting and Rigging Manual identified several potential issues with conduct of operations, maintenance, and Integrated Safety Management associated with the K-Basin monorail system. Subsequent to discussions on these concerns with SNFP and FH regulatory compliance, an independent assessment of the situation was initiated by FH. (IV)