

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 18, 2003

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending July 18, 2003

Waste Treatment Plant: Bechtel National Inc. (BNI) has submitted their Authorization Basis Amendment Request (ABAR) for redefining safety classification and defense-in-depth (DinD) methodologies. Besides switching to safety class (SC) and safety significant (SS) classifications, the ABAR proposes the following changes:

1. Limiting SC structures, systems, and components (SSCs) to those that address unmitigated radiological releases that result in SL-1 consequences to the public. Safety design class used to apply to SSCs that protected workers and the public from radiological and chemical accidents that exceeded exposure standards or which would prevent a criticality.
2. The cutoffs for defining severity level 1-4 accidents for co-located workers would be raised from 100, 5, and 1 rem to 100, 25, and 5 rem. However, >5 rem to the public would still define SL-1 accidents, which is more conservative than the 25 rem used in DOE-STD-3009.
3. Rather than applying the single failure criterion to SL-1 events and considering it for SL-2 events, it would be required for SC controls and be considered for SS controls. This would impact controls driven by SL-1 accidents for co-located workers that are SL-2/3/4 for the public.
4. Dose consequence analyses for facility workers would be qualitative. Accidents that only have facility worker consequences would not be assigned a severity level.
5. DinD requirements for the number of required physical and/or independent barriers are eliminated for direct radiation hazards and controls that protect facility workers. Safety evaluations/ABARs can be used to justify not meeting DinD requirements for SSCs that protect co-located workers and the public.

Office of River Protection (ORP) senior managers indicate that they still desire to transfer more authorization basis approval authority to BNI once BNI improves the quality of their safety evaluations (see 6/20/03 report). However, recent events continue to indicate problems with implementing the current process, much less one with less oversight. For instance, ORP inspectors issued a finding last week because BNI had conditionally released installing structural steel prior to obtaining a change to the Safety Requirements Document or obtaining a Decision to Deviate from the Authorization Basis. Furthermore, an ORP review of a BNI-approved Authorization Basis Change Notice (ABCN) found that a concrete expansion anchor and anchor bolts implementing standard had been erroneously modified by the ABCN without receiving preapproval of the change by DOE. This error was a procedural one; the change itself was later found to be acceptable. (I-C)

Spent Nuclear Fuel Project (SNFP): As a result of the engineering and nuclear safety issues identified recently with the Sludge Water System (SWS), Fluor Hanford (FH) has instituted continuing independent oversight of these organizations as a compensatory measure pending causal analyses and corrective actions. It is expected that these measures will remain in effect during the SWS Operational Readiness Reviews (ORR). This is similar to the senior supervisory watches put in place by SNFP as a compensatory measure following the unsatisfactory performance of the operations organization during the ORRs for fuel processing. In that case the compensatory measure remained in effect until FH and DOE Richland jointly determined that it was no longer necessary. (III-A)