

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending December 8, 2000

Americium-Curium (AmCm) Stabilization: On Wednesday, WSRC issued a Stop Work Order to the vitrification equipment vendor due to unsatisfactory progress (site rep weekly 11/17/00). WSRC is negotiating with the vendor with the goal of restarting the design effort in early January.

Last week, The DOE Inspector General (DOE-IG) issued a report that concluded that AmCm stabilization is not likely to be completed until well after the Secretary's 94-1 commitment date (December 2005). Furthermore, the DOE-IG recommended that this project be funded by a budget line item instead of from operating expenses. The DOE-IG report states that delays will prolong safety risks, escalate costs, and hinder F-Canyon decommissioning.

The DOE-IG assessment of potential schedule impact is driven by a DOE requirement, imposed last July, that the vitrified AmCm product be qualified for a geologic repository. In September, a WSRC study observed that, historically, it takes 4 to 5 years to develop and obtain approval of such a qualification program, including specifications, a glass compliance plan, an in-process measurement plan, and other elements. WSRC stated that the key to success is equipment qualification testing, but it will be challenging to develop the testing protocols before January 2002, when vendor equipment cold runs had been scheduled to begin. DOE-EM and DOE-RW personnel are meeting on site next week to better define repository requirements and minimize schedule impacts.

Readiness Assessments (RAs): WSRC started the RA for dissolving Sterling Forest Oxide in H-Canyon on Monday and suspended it on Thursday. It appears that neither the facility nor the RA team was ready to begin this RA. Once it began, problems were observed with procedures and conduct of operations that are similar to those seen in H-Canyon and HB-Line a year ago (site rep weekly 12/10/99). In this and other recent assessments (e.g., KAMS), the RAs may have become more a "management-assist" than appropriate. Increased attention may be warranted on the RA team composition (i.e., independence), the RA plan (including criteria and approaches), and the facility declaration of readiness (including verified procedures, trained operators, and checked-out equipment). In recent months, there have also been fewer DOE RAs that followed up on WSRC RAs – a trend that should be reconsidered. For H-Canyon, WSRC now plans to conduct a broader scope RA in mid-January, covering the Sterling Forest Oxide dissolution and head end operations.

HB-Line: In September, WSRC suspended mixed scrap processing in HB-Line because sample analyses indicated that dissolver hydrogen concentration could exceed the Authorization Basis (AB) limit for some material (site rep weekly 9/15/00). This week, WSRC submitted a revised AB package to DOE-SR to support resuming this activity. The proposed controls are intended to ensure hydrogen concentration does not exceed 25% of the Lower Flammability Limit (LFL) during normal conditions and does exceed LFL otherwise (i.e., with loss of purge ventilation). The vessel vent system will be used to provide purge with a safety significant alarm on dissolver vacuum to indicate loss of purge flow. In addition, the AB requires an engineering evaluation of scrap material to ensure these controls are adequate. Materials that may exceed the hydrogen concentration limits will not be processed.