

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

May 22, 1998

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
**FROM:** J. Kent Fortenberry / Joe Sanders  
**SUBJECT:** SRS Report for Week Ending May 22, 1998

Kent Fortenberry was at DNFSB Headquarters this week.

**Mixed Oxide Fuel (MOX) Irradiation in the Advanced Test Reactor (ATR) at INEEL** - An experimental program to irradiate MOX fuel in the ATR began earlier this year. The principal purposes of this testing are to evaluate the irradiation of MOX fuel prepared with 5% weapons-grade plutonium (WG) and investigate gallium's impact on the zircalloy cladding. This program is funded by DOE-MD and involves the following laboratories: LANL (produce the MOX pellets and seal the fuel capsules), INEEL (provide irradiation services), and ORNL (provide test hardware and perform post-irradiation examinations). Nine capsules were fabricated from WG plutonium recovered using the ARIES process. During fuel preparation, several of the capsules were produced from MOX in which the plutonium underwent Thermally-Induced Gallium Removal (TIGR) processing while the others did not. The net reduction in gallium concentration for the sintered pellets was minimal (~0.7 vs. ~2.0 ppm) because most of the remaining gallium volatilized during the sintering process. Capsules will be removed and examined at burnups of approximately 8, 20 and 30 GWd/MTHM. The final report is expected in mid-2002. Other testing being considered includes irradiating MOX fuel to higher burnups (55-65 Gwd/MTHM) and irradiating other fuel types for comparative purposes (e.g., reactor-grade plutonium and aqueous-purified WG plutonium).

**GAO Review of the In-Tank Precipitation Facility (ITP)** - The Ranking Minority Member, House Committee on Commerce, Subcommittee on Oversight and Investigations requested that GAO perform a review of ITP and answer several questions including why it took so long to decide that ITP would not function properly, how much the ITP project has cost, how the contractor's award fee was affected, how the waste cleanup process is being affected, and the path forward for salt/supernate disposition. The site reps met with the GAO reviewers to discuss the Board's mission and involvement with ITP.

**NRC Pilot Study on Regulating the Receiving Basin for Offsite Fuel (RBOF)** - Representatives from the NRC met with DOE, WSRC, and the South Carolina Department of Health and Environmental Control (SCDHEC) this week to discuss plans for the pilot study to regulate RBOF. A facility tour and discussions including overall facility design and Authorization Basis (AB) status were conducted. RBOF has an approved Authorization Agreement. The facility is currently operated under a Basis for Interim Operation. However, a SAR and TSRs are currently in the DOE approval process and should be implemented this Summer. The following is a tentative schedule of events for this pilot study:

6/25	Public Meeting (local)
7/20 - 24	Phase I Review (5-10 reviewers and will include an inspection and policy meetings)
8/24 - 28	Phase II Review (followup from Phase I Review)
9/21 - 25	Phase IIa Review (additional followup, as necessary)
Mid Nov.	Final report.