



Department of Energy
Ohio Field Office
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

October 20, 1999

Mr. Jack Parrott
U.S. Nuclear Regulatory Commission
MS T8F37
Washington, DC 20555-0001

SUBJECT: U.S. Nuclear Regulatory Commission (NRC) Review of Safety Analysis Report for Low-Level Waste Processing and Support Activities, WVNS-SAR-002, Revision 3, Safety Evaluation Report Restriction, General Purpose Cell

REFERENCE: Letter 1571:95 (38059), G. C. Comfort, Jr. to T. J. Rowland, "NRC Review of Safety Analysis Report for Low-Level Waste Processing and Support Activities, WVNS-SAR-002, Revision 3," dated September 13, 1995

Dear Mr. Parrott:

The purpose of this letter is to formally request NRC concurrence on the West Valley Demonstration Project (WVDP) approach for the lifting of the General Purpose Cell (GPC) Safety Evaluation Report restriction. The proposed approach was presented to you on June 16, 1999, at the WVDP.

On September 13, 1995, the NRC issued a letter (Reference 1) to the WVDP documenting their review of WVNS-SAR-002, Revision 3, Draft G. In the letter, the NRC documented their concern over criticality issues with the GPC and stated that "... complete characterization of material within the GPC and a criticality analysis of all proposed activities within the GPC be completed prior to the onset of those activities (clean up)." The WVDP must satisfactorily resolve NRC concerns regarding the potential for criticality during decontamination activities in the GPC prior to the initiation of decontamination work in this cell.

Characterization of potential fuel-bearing material in the Head-End Cell (HEC) may be accomplished through sampling and analysis or process knowledge. The WVDP proposes the use of process knowledge to develop an evaluation basis fuel for the criticality analysis. The evaluation basis fuel to be used is unirradiated, five weight percent U-235 enriched fuel. The evaluation basis fuel is based on the initial assembly characteristics of the fuel, using approved burn-up codes, reactor power history, shipping manifests, and NFS processing records. The evaluation basis fuel has a number of conservatisms: (1) 98 percent of the fuel processed had an initial U-235 enrichment of five weight percent or less; (2) only five percent of post-irradiated fuel had a U-235 equivalent enrichment greater than three weight percent; (3) direct radiation levels and radioactivity concentrations measured during 1986 characterization activities indicate

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the material has been irradiated; and (4) NFS documented only one spill of unprocessed fuel in the GPC, which occurred in the first reprocessing campaign.

The evaluation basis fuel will be used to perform the criticality analysis which when completed will be incorporated into a revision to the Safety Analysis Report (SAR). The revised SAR will document the proposed decontamination activities and will evaluate the hazards associated with the activities. The SAR will be submitted to the NRC for review and approval.

Your concurrence on this approach is requested by November 17, 1999, so that the actual criticality analysis can begin in November 1999. Submittal of the revised SAR to the NRC for review and approval is currently planned for September 2000.

If you have any questions, please contact John Drake at (716) 942-4993.

Sincerely,

A handwritten signature in black ink, appearing to read "BAM" with a flourish underneath. To the right of the signature, the text "for BAM" is written in a smaller, cursive hand.

Barbara A. Mazurowski, Director
West Valley Demonstration Project

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