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United States
Enrichment Corporation

February 24, 1997

Mr. Randall M. DeVault
Regulatory Oversight Manager
US Department of Energy
3 Main Street
Oak Ridge, Tennessee 37830

Dear Mr. DeVault:

United States Enrichment Corporation (USEC) - Portsmouth Gaseous Diffusion Plant (PORTS) - Docket No. 70-7002 - Proposed Resolution to Cell Treatment Coolant System Pressure

The purpose of this letter is to request DOE review of proposed changes to the FSAR to resolve the cell treatment coolant system pressure issue.

In accordance with your letter dated January 15, 1997 (RG-70-7002/97-0017), we have discussed the planned changes to the SAR/FSAR for resolving the cell treatment issue with the NRC. The enclosure to this letter outlines the proposed changes to SAR Section 4.1.1.2.2 (Case C-13), FSAR Section 5.1.1.2.2 (Case C-13), and the Basis Statements for TSR Sections 2.2.3.5 and 2.7.3.4. The proposed FSAR changes outlined in the enclosure supersede those provided to you in our November 1, 1996 letter.

A copy of the classified Unreviewed Safety Question Determination supporting the proposed changes to the FSAR is available at the site for review.

If you have any questions or require additional information on this subject, please call Mr. Ron Gaston (614) 897-2710.

Sincerely,

RL Woolley

Robert L. Woolley
Nuclear Regulatory Assurance and Policy Manager

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Enclosure: SAR, FSAR, and TSR Basis Changes to Resolve Cell Treatment Coolant System Pressure Issue, RAC 97X0076 (R0) (2 pages total)

cc: DOE Site Safety Representative, PORTS
Mr. R. C. Pierson, NRC
NRC Resident Inspector - PORTS

SAR, FSAR, and TSR Basis Changes to
Resolve Cell Treatment Coolant System Pressure Issue
RAC 97X0076 (R0)

The following changes will be made to the SAR, FSAR, and TSR Basis Statements to resolve the cell treatment coolant system pressure issue:

1. FSAR Section 5.1.1.2.2, Case C-13, items 2, 3, and 5 will be revised to read as follows:

   2. Removing all liquid coolant and evacuating the coolant system to limit the amount of coolant available for a reaction if there were a coolant leak. The vacuum requirement for the X-27 and X-29 size equipment is between 18 and 30 inches of Hg. The larger equipment has no specific requirement other than taking the system below atmosphere so that any pools of liquid will vaporize and be removed.

   3. Periodic monitoring of the cell with an infrared analyzer to detect any coolant or fluorocarbons which would indicate a coolant leak or oil in the cell.

   5. Sampling the cell to assure presence of free ClF_3 and avoid the formation of the more reactive Cl_2 which will react with the aluminum in the cell ($AlCl_3$). (See Section 5.1.1.8.2 for the oxidizing effects of ClF_3.) The probability of an exothermic reaction in a cell during ClF_3 treatment has been reduced to low because of improved procedures.

2. SAR Section 4.1.1.2.2, Case C-13, item 2 will be revised to read as follows:

   2. Removing all liquid coolant and evacuating the coolant system to limit the amount of coolant available for a reaction if there were a coolant leak. The vacuum requirement for the X-27 and X-29 size equipment is between 18 and 30 inches of Hg. The larger equipment has no specific requirement other than taking the system below atmosphere so that any pools of liquid will vaporize and be removed.

3. The Basis Statement for TSR Section 2.2.3.5 will be revised to read as follows:

   Basis:

   In the event of a leak from the coolant system to the process gas, the failure to control the concentrations of coolant and ClF_3/F_2 within the cell can form explosive mixtures that in the presence of an ignition source could over pressure the cell and

SAR, FSAR, and TSR Basis Changes to
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release toxic materials. The draining of coolant includes the evacuating of the coolant system to between 18 and 30 inches of Hg for the X-27 and X-29 size equipment. The other equipment sizes have no specific coolant evacuation requirement other than for the system pressure to be below atmospheric pressure. The indications of an exothermic reaction are usually rapid pressure spikes and/or a rapid increase in temperature. A leaking block valve between a F/S that has a leaking cooler and the host cell could allow coolant and treatment gases to mix and therefore potentially form a highly exothermic reaction mixture [SAR 4.1.1.2.2 Case C-13].

4. The Basis Statement for TSR Section 2.7.3.4 will be revised to read as follows:

Basis:

In the event of a leak from the coolant system to the process gas, the failure to control the concentrations of coolant and ClF_3/F_2 within the cell can form explosive mixtures that in the presence of an ignition source could over pressure the cell and release toxic materials. The draining of coolant includes evacuating of the coolant system to between 18 and 30 inches of Hg for the X-27 and X-29 size equipment. The other equipment sizes have no specific coolant evacuation requirement other than for the system pressure to be below atmospheric pressure. The indications of an exothermic reaction are usually rapid pressure spikes and/or a rapid increase in temperature [SAR 4.1.1.2.2 Case C-13].