

May 27, 2011

Mr. Steven A. Toelle
Director, Nuclear Regulatory Affairs
U. S. Enrichment Corporation
2 Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE
DECOMMISSIONING FUNDING PROGRAM DESCRIPTION AND DEPLETED
URANIUM MANAGEMENT PLAN AND FINANCIAL ASSURANCE FOR
CALENDAR YEAR 2011, PADUCAH GASEOUS DIFFUSION PLANT AND
PORTSMOUGH GASEOUS DIFFUSION PLANT (TAC NOS. L32763 AND L32764)

Dear Mr. Toelle:

The U.S. Nuclear Regulatory Commission's (NRC's) staff reviewed the December 23, 2010 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML103630204) revisions to the Decommissioning Funding Program Description and Depleted Uranium Management Plan and Financial Assurance for Paducah Gaseous Diffusion Plant and Portsmouth Gaseous Diffusion Plant, submitted by the United States Enrichment Corporation. Based on the review to date, the staff has identified that additional information is needed before final action can be taken on your submittal.

Your response to the request for additional information, specified in the enclosure, should be provided to the NRC within 10 business days from the date of this letter.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the NRC's Rules of Practice, a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System component of the NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If there are any questions regarding this action, please contact me at 301-492-3217 or via e-mail to Tilda.Liu@nrc.gov.

Sincerely,

/RA/

Tilda Y. Liu, Senior Project Manager
Conversion, Deconversion
and Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 70-7001
Certificate No. GDP-1

Enclosure:
As stated

cc w/enclosure:

Mr. Vernon Shanks, USEC-Paducah
Paducah Gaseous Diffusion Plant
PO Box 1410
Paducah, KY 42001

Mr. Randall M. DeVault
U.S. Department of Energy – Oak Ridge
PO Box 2001
Oak Ridge, TN 37832

If there are any questions regarding this action, please contact me at 301-492-3217 or via e-mail to Tilda.Liu@nrc.gov.

Sincerely,

/RA/

Tilda Y. Liu, Senior Project Manager
Conversion, Deconversion
and Enrichment Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 70-7001
Certificate No. GDP-1

Enclosure:
As stated

cc w/enclosure:

Mr. Vernon Shanks, USEC-Paducah
Paducah Gaseous Diffusion Plant
PO Box 1410
Paducah, KY 42001

Mr. Randall M. DeVault
U.S. Department of Energy – Oak Ridge
PO Box 2001
Oak Ridge, TN 37832

DISTRIBUTION:

FCSS r/f RPrzygodski, FSME, MMiller, R-II RRussell, R-II
 RPrince, R-II DHartland, R-II JCalle, R-II

ML111390254

OFFICE	FCSS/FMB		FCSS/CDEB		FCSS/CDEB	
NAME	LAllen		TLiu		DMorey	
DATE	5/19/11		5/26/11		5/27/11	

OFFICIAL RECORD COPY

**Decommissioning Funding Program Description and
Depleted Uranium Management Plan and Financial Assurance for
United States Enrichment Corporation Gaseous Diffusion Plants**

RAI 1

Clarify the scope and basis of the disposal rates for Low Level Radioactive Waste, Low Level Radioactive Waste in storage, mixed waste, and mixed waste in storage.

Title 10 of the *Code of Federal Regulations* (10 CFR) 76.35(n), in part, states that "[t]he funding program must contain a basis for cost estimates used to establish funding levels." In this regard, the staff requests: (1) a basis for the waste disposal rates relied on, (2) a justification for the reduction in certain waste disposal rates, and (3) clarification of the scope of activities included in the various waste disposal rates.

(1) Basis for Waste Disposal Rates Requested

Sections 3.1.1 to 3.1.4 of the United States Enrichment Corporation's (USEC's) submittal discusses, in part, estimated volumes and disposal rates of Low Level Radioactive Waste (LLRW), mixed waste, mixed waste in storage, and LLRW in storage, respectively. With respect to disposal rates, Sections 3.1.1, 3.1.2 and 3.1.4, respectively, state that the assumed disposal rates are based on "various commercial disposal facilities," "current average cost estimate," and a "weighted average cost."

The staff finds that such references are unclear with regard to which disposal facilities' disposal rates are relied on for the purposes of estimating LLRW and mixed waste disposal costs. The staff requests the basis (e.g., published rates, quotes, contract language) and supporting calculations for USEC's assumed LLRW and mixed waste disposal rates.

(2) Justification for Reduction in Waste Disposal Rates Requested

Section 3.1.1 and 3.1.4 of USEC's submittal, respectively, state that the assumed disposal rate for Portsmouth's LLRW and LLRW in storage is \$55/ft³. The staff finds that this rate is significantly lower than the \$74/ft³ rate stated in USEC's April 6, 2010, cost estimate for calendar year 2010 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML101180070). Similarly, Section 3.1.2 of USEC's submittal states that the assumed disposal rate for mixed waste at Paducah is \$1,200/ft³. The staff finds that this rate is lower than the \$1,500/ft³ rate stated in USEC's April 6, 2010, cost estimate for calendar year 2010 (ADAMS Accession Number ML101180070). The staff requests a justification for the reduced disposal rates.

(3) Clarification of the Scope of Activities Included in the Disposal Rates

Section 3.1 of USEC's submittal, in part, states that the "[c]ost of disposal includes disposal cost, container cost, and transportation costs." However, it is unclear whether labor (e.g., labor to load containers onto a truck or railcar) is included in the disposal rates states in Sections 3.1.1, 3.1.2, 3.1.3, and 3.1.4. In this regard, the staff requests clarification as to whether labor is included in the waste disposal rates, and a disaggregation of the waste disposal rates such that the costs of disposal, container, transportation, and other costs are separately stated.

RAI 2**Justify the decreased volume of LLRW in storage at Portsmouth GDP.**

Section 3.1.4, Low Level Radioactive Waste in Storage, of USEC's submittal, in part, states that "6,500 ft³ of LLRW for which USEC does not currently have a disposal outlet will remain in storage at Portsmouth." The staff finds that this volume is lower than the 7,800ft³ stated in USEC's April 6, 2010, cost estimate for calendar year 2010 (ML101180070). Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that "[t]he funding program must contain a basis for cost estimates used to establish funding levels." In this regard, the staff requests a basis for the reduced volume of LLRW in storage with no current disposal outlet.

D-RAI 3**Clarify the basis for the labor costs provided in Section 3.3 of USEC's submittal.**

In the Request for Additional Information (RAI) in connection with USEC's April 6, 2010, submittal, the staff requested, in part, for an updated labor cost estimate. The staff noted that these costs appeared to be over 10 years old. In its response to the staff's RAI, USEC committed to updating the labor cost estimate in its annual update due by the end of calendar year 2010. In its current submittal, USEC increased the labor cost estimate from \$500,000 to \$553,890; but the supporting calculations—part of the proprietary portion of the submittal—are unclear. Specifically:

- the source of the labor rates is not provided,
- it is unclear whether labor categories such as health physicist and radiation safety officer are included, and
- it is unclear whether these labor rates are based on the costs of a third party.

Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that "[t]he funding program must contain a basis for cost estimates used to establish funding levels." In this regard, the staff requests a basis for the labor cost estimate.

RAI 4**Confirm that any credit for salvage value is not included in the cost estimate.**

Section 3.0 of the Depleted Uranium Management Plan states that "[t]here are a number of existing and potential uses for depleted uranium, including use in radiation shielding material...it is possible that increased energy costs may make recovery of additional ²³⁵U from the depleted uranium economically feasible in the future...."

Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that "[USEC] shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and decontamination and decommissioning activities, which are the financial responsibility of [USEC]." NUREG-1757, Volume 3, Appendix A.3.1.3 states that "[t]he cost estimate should clearly state that it does not take credit for any *salvage value* that might be realized from the sale of potential assets...during or after decommissioning" (emphasis in original). The inclusion of salvage value may result in an underestimate of

decommissioning costs. In this regard, the staff requests that USEC confirm that the cost estimate does not take credit for any salvage value that might be realized from the sale of potential assets.

RAI 5

Clarify the update periodicity of “Plant Construction” and “Plant Decontamination and Decommissioning (D&D) cost” stated in Tables 1 and 2 of “Analysis of Depleted Uranium Disposal Costs for the Gaseous Diffusion Plants.”

Tables 1 and 2 to Enclosure 5 of USEC’s submittal include the calculations that USEC relies on for estimating Depleted Uranium (DU) disposal rates. The staff finds the update periodicity of “Plant Construction” costs and “Plant D&D cost” is unclear. Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that the “funding program must contain [a] means of adjusting cost estimates and associated funding levels over the duration of the lease.” In this regard, the staff requests USEC to clarify the frequency with which USEC updates these costs, and the method by which USEC adjusts these costs.

RAI 6

Clarify the 20 percent and 10 percent “contingency” subtracted from “Investment Costs” and “Annual Operating Costs,” respectively, in Tables 1 and 2 of “Analysis of Depleted Uranium Disposal Costs for the Gaseous Diffusion Plants.”

The staff finds that Tables 1 and 2 of Enclosure 5 subtract a 20 percent contingency from “Plant construction” costs and a 10 percent “contingency” from “Plant operations” costs. The staff finds the rationale for subtracting these costs is unclear. Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that “[USEC] shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and D&D activities which are the financial responsibility of [USEC].” The staff finds that these “contingencies” reduce the disposal cost per kilogram of Depleted Uranium Hexafluoride (DUF₆). In this regard, the staff requests a justification for subtracting these “contingencies” from “Plant construction” and “Plant operations” costs.

RAI 7

Clarify the basis for the reduced amount DUF₆ at Paducah, as stated in Table 2 of “Analysis of Depleted Uranium Disposal Costs for the Gaseous Diffusion Plants.”

The staff finds that Table 2 of Enclosure 5 states that 56,856 Metric Tons (MT) of DUF₆ is at Paducah. However, USEC’s prior response to NRC’s RAI (ADAMS Accession Number ML101870334) in connection with its April 6, 2010 submittal states that 57,762 MT of DUF₆ is at Paducah. Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that “[USEC] shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and D&D activities which are the financial responsibility of [USEC].” The staff finds it unclear as to why the amount of DU at Paducah decreased. In this regard, the staff requests a basis for the reduced amount of DUF₆ at Paducah.

D-RAI 8

Provide a basis for the increased amount of DU at Portsmouth, as stated in Table 1 of USEC's Depleted Uranium Management Plan, "Analysis of Depleted Uranium Disposal Costs for the Gaseous Diffusion Plants," and correct the corresponding amount of DUF₆ at Portsmouth stated in Table 1 of "Analysis of Depleted Uranium Disposal Costs for the Gaseous Diffusion Plants."

The staff finds that Table 1 of USEC's Depleted Uranium Management Plan states that 399 MT of DU is at Portsmouth. USEC's previous April 6, 2010, submittal stated that 360 MT of DU is at Portsmouth. The staff was unable to find a clear basis for the increased amount of DU.

Additionally, Table 1 of Enclosure 5 states that 533 MT of DUF₆ is at Portsmouth. The staff finds that this corresponds to approximately 360 MT of DU, which is less than the 399 MT DU stated in USEC's current submittal.

Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that the "[t]he funding program must contain a basis for cost estimates used to establish funding levels." In this regard, the staff requests a basis for the increased amount of DU at Portsmouth. For the accuracy of the record, the staff requests that USEC appropriately update its Table 1 to Enclosure 5 to state the correct amount of DUF₆ at Portsmouth.

D-RAI 9

State whether USEC expects any DU to be returned to USEC, per the U.S. Department of Energy's (DOE) Agreement DE-SC0003997.

As part of USEC's April 6, 2010, submittal, it provided a copy of Agreement DE-SC0003997 that USEC entered into with the DOE. Under this agreement, DOE took title to an amount of USEC's DU. Per Section 9.03 of this Agreement, title to DU previously transferred to DOE may be returned to USEC under certain conditions.

USEC's current submittal does not specifically discuss a return of DU to USEC under Section 9.03 of the Agreement. Title 10 of the *Code of Federal Regulations* 76.35(n), in part, states that "[USEC] shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and D&D activities which are the financial responsibility of [USEC]." If any DU is expected to be returned to USEC, financial assurance would need to be provided for such DU. The staff requests clarification as to whether USEC expects any DU to be returned to USEC per Section 9.03 of the Agreement.