



December 22, 2011  
GDP 11-0033

Ms. Catherine Haney  
Director, Office of Nuclear Material Safety and Safeguards  
Attention: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**Paducah Gaseous Diffusion Plant (PGDP)  
Docket No. 70-7001  
Certificate No. GDP-1  
Transmittal of Changes to the Decommissioning Funding Program Description and  
Depleted Uranium Management Plan and Financial Assurance for Calendar Year 2012**

Dear Ms. Haney:

Enclosures 1 and 2 provide revisions to the Paducah Gaseous Diffusion Plant (PGDP) Decommissioning Funding Program Description (DFP) and Depleted Uranium Management Plan (DU Plan) for calendar year 2012, respectively. The United States Enrichment Corporation (USEC) will incorporate the DFP and DU Plan changes into a revision to the Application.

Conditions to USEC's Certificate of Compliance for PGDP require submittal of a revised financial instrument by December 31<sup>st</sup> of each year, should the current funding level require revision. Enclosure 3 contains a non-proprietary copy of the Westchester Fire Insurance Company rider increasing the amount of the associated Bond from \$30,800,000 to \$40,900,000. This rider, in combination with USEC's existing financial assurance, provides sufficient funding to cover USEC's decommissioning liabilities for calendar year 2012.

Enclosure 4 contains a non-proprietary copy of Schedules A, B, and C of the Standby Trust Agreement. The executed originals of the Westchester Fire Insurance Company rider and Schedules A, B, and C of the Standby Trust Agreement will be provided to the NRC Project Manager by separate letter (USEC letter GDP 11-0034).

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Table 1 in the DU Plan in this revision contains changes from the DU Plan submitted by USEC on July 25, 2011, (GDP 11-0016) and approved by NRC on December 8, 2011. The changes are:

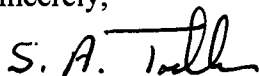
- A CY 2011 increase of 179 MTU DU generated due to production schedule changes
- A CY 2011 increase of 3 MTU other DU due to a decrease of DU sold to fuel fabricators
- A CY 2012 increase of 162 MTU DU generated due to an increase in forecasted production
- A CY 2012 decrease of 5 MTU other DU due to an expected increase of DU sold to fuel fabricators

Consistent with the calendar year 2011 DFP update, USEC has developed the calendar year 2012 DU disposal unit cost for PGDP by applying the methodology established during the licensing activities associated with USEC Inc.'s American Centrifuge Plant (ACP), and escalating the unit costs to 2012 dollars. Enclosure 5 provides the analysis of the DU disposal costs for PGDP.

The volumes of PGDP low level and mixed radioactive waste and cost basis have been adjusted slightly from that provided in the July 25, 2011, DFP revision based on CY 2011 experience. The DFP labor cost estimate associated with disposition of radioactive waste was calculated with the same methodology provided to NRC by USEC's June 16, 2011, letter (GDP 11-0015) using 2012 labor rates.

Should you have any questions, please contact me at (301) 564-3250. Commitments contained in this submittal are noted in Enclosure 6.

Sincerely,



Steven A. Toelle  
Director, Regulatory Affairs

Enclosures:

1. GDP Decommissioning Funding Program Description
2. GDP Depleted Uranium Management Plan
3. Westchester Fire Insurance Company Rider
4. Standby Trust Schedules A, B, and C
5. Analysis of Depleted Uranium Disposal Costs For PGDP
6. Commitments Contained in this Submittal

cc: J. Calle, Chief, Fuel Facility Inspection, NRC Region II  
M. Miller NRC Senior Resident Inspector, PGDP  
T. Liu, Project Manager, NRC HQ

PGDP Decommissioning Funding Program Description

## **DECOMMISSIONING FUNDING PROGRAM DESCRIPTION**

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## 1.0 INTRODUCTION

As a condition of certification, 10 Code of Federal Regulations (CFR) 76.35(n) requires the United States Enrichment Corporation (USEC) to submit, as part of its application for an NRC certificate of compliance:

A description of the funding program to be established to ensure that funds will be set aside and available for those aspects of the ultimate disposal of waste and depleted uranium, decontamination and decommissioning, relating to the gaseous diffusion plants leased to the Corporation by the Department of Energy, which are the financial responsibility of the Corporation.

Section 76.35(n) also requires USEC to establish financial surety arrangements to provide the requisite funding. The funding mechanism must ensure availability of funds for activities required to be completed both before and after the return of the gaseous diffusion plants to the Department of Energy (DOE) in accordance with the July 1, 1993 Lease Agreement between DOE and USEC (Lease Agreement). The funding program must also contain a basis for cost estimates used to establish funding levels, and means of adjusting such cost estimates and associated funding levels over the duration of the lease. Finally, USEC is not required to provide funding for “those aspects of decontamination and decommissioning . . . assigned to the Department of Energy under the Atomic Energy Act of 1954, as amended.”

In accordance with 10 CFR 76.35(n), USEC hereby submits a description of its program to ensure adequate funds are available for the disposal of waste and the disposition of depleted uranium generated at PGDP and for which USEC is financially responsible under the Atomic Energy Act (AEA).

## 2.0 SCOPE OF USEC'S DECOMMISSIONING FINANCIAL RESPONSIBILITY

USEC began to operate the Paducah (PGDP) plant on July 1, 1993, in accordance with the AEA, as amended, and the July 1, 1993 Lease Agreement. Prior to July 1, 1993, DOE operated the plant for about 40 years. Section 1403(d) of the AEA provides that “[t]he payment of any costs of decontamination and decommissioning . . . with respect to conditions existing before the transition date [July 1, 1993], in connection with property of the Department leased under subsection (a), shall remain the sole responsibility of the Department.” Accordingly, USEC is not financially responsible for, and this Program Description does not provide funding assurance for, decontamination or decommissioning costs associated with any operations at PGDP prior to July 1, 1993.

Furthermore, PGDP, including the Leased Premises, will ultimately be decommissioned by DOE, which is solely responsible for the conduct of decontamination and decommissioning activities at the plant, and which also bears sole financial responsibility for the bulk of these activities. Section 4.6 of the Lease Agreement states that:

Except as provided in Section 4.5(c) of this Lease, the Department will be responsible for and will pay the costs of all Decontamination and Decommissioning, including the costs of Decontamination and Decommissioning of the Leased Premises, the Leased Personalty, any personal property found on the Leased Premises, regardless of ownership, and any Capital Improvement.

In addition, Section 4.3(b) of the Lease Agreement states that “[t]he Corporation shall be entitled, should it choose, to leave any of its personal property (including personal property contaminated by radioactive materials) on the Leased Premises at the end of the Lease Term for Decontamination and Decommissioning by the Department.”

However, USEC does have certain specific financial responsibilities with respect to some of these activities. Under Section 4.4(c) of the Lease Agreement, USEC is “responsible for the ultimate treatment and disposal of any waste generated by the Corporation, and for which the Department is not responsible . . . .” Under this provision, USEC is financially responsible for, and this Program Description addresses, the disposal of low-level radioactive waste (LLRW) and “mixed” hazardous and radioactive waste generated by USEC at PGDP after the date of privatization, July 28, 1998.<sup>1</sup>

In addition, as discussed above, Section 4.6 of the Lease Agreement provides that the Department will pay the costs of all decontamination and decommissioning, “[e]xcept as provided in Section 4.5(c) of this Lease . . . .” Section 4.5(c) authorizes USEC to remove any capital improvement at PGDP, but “if such removal increases the costs of the Department for the Decontamination and Decommissioning

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<sup>1</sup> A more detailed description of USEC’s plans to manage and dispose of LLRW and mixed waste generated at PGDP is provided in the Radioactive Waste Management Program, which is included as part of the certificate of compliance application.

of the Leased Premises to which any such Capital Improvement was attached, the Corporation will pay any such increase in Decontamination and Decommissioning costs.” At this time, USEC does not anticipate removing any capital improvement from the plant site. Therefore, no financial assurance for Decontamination and Decommissioning cost increases arising out of such removal is currently being provided.

Finally, USEC is generating depleted uranium as a result of its operation of PGDP. Section 3109(a)(3) of the USEC Privatization Act (passed April 1996) states that:

All liabilities arising out of the disposal of depleted uranium generated by the Corporation between July 1, 1993 and the privatization date shall become the direct liabilities of the Secretary [Secretary of Energy].

Therefore, this Program Description also describes USEC's funding program to ensure funds are available for the ultimate disposition of the depleted uranium generated by USEC's operations after July 28, 1998.<sup>2</sup>

As described in the Depleted Uranium Management Plan, USEC has established agreements with the DOE that affect USEC's liability associated with the disposal of depleted uranium generated by USEC. These agreements are the "Memorandum of Agreement Between the United States Department of Energy and the United States Enrichment Corporation Relating to Depleted Uranium," dated June 30, 1998, the "Agreement Between the U.S. Department of Energy ("DOE") and USEC Inc. ("USEC")," dated June 17, 2002, and the "Cooperative Agreement Between Department of Energy and USEC Inc. Concerning the American Centrifuge Demonstration Project," dated March 23, 2010.

The "Memorandum of Agreement Between the United States Department of Energy and the United States Enrichment Corporation Relating to Depleted Uranium," dated June 30, 1998 provided for the transfer to DOE of 2,026 48G cylinders containing approximately 16,674,000 Kg of depleted uranium generated by USEC's operations. In accordance with the agreement, USEC made the required full payment of over \$50M to DOE, covering the entire quantity of depleted uranium to be transferred. Therefore, the liability to dispose of the full amount of USEC's depleted uranium specified in the agreement now rests with DOE, further reducing the quantity of depleted uranium to be ultimately disposed of by USEC. Within these major parameters of the agreement, USEC and DOE agreed to implement the actual transfer of the material on a schedule covering the period of FY 1999 through 2004.

The "Agreement Between the U.S. Department of Energy ("DOE") and USEC Inc. ("USEC")," dated June 17, 2002, provided, in part, for the DOE taking title of depleted uranium from USEC operations during USEC's fiscal years 2002 and 2003 and one-half the amount of depleted uranium generated during USEC's fiscal years 2004 and 2005. Therefore, as a result of this June 17, 2002 agreement, USEC's liability associated with the disposal of USEC generated depleted uranium was reduced by the quantity of depleted uranium specified in this June 17, 2002 agreement.

The "Cooperative Agreement Between Department of Energy and USEC Inc. Concerning the American Centrifuge Demonstration Project," dated March 23, 2010, transferred title to 13,312,411 kg of DU from USEC to DOE to enable USEC to release encumbered funds to support continued development and demonstration of the American Centrifuge technology.

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2 The Depleted Uranium Management Plan describes in greater detail USEC's plans for the management and disposition of depleted uranium.

The quantity of depleted uranium associated with these agreements, and the transfer schedule for this material, is specified in Table 1 of the Depleted Uranium Management Plan.

In addition to USEC's enrichment operations, USEC also performs contract work for the DOE and DOE contractors. To compensate USEC for incurred costs associated with these contracts, DOE has taken title to depleted uranium further reducing USEC's liability for the disposal of depleted uranium. The quantity of depleted uranium, and the transfer schedule for the depleted uranium associated with the compensation for these contracts, is specified in Table 1 of the Depleted Uranium Management Plan.

### 3.0 DECOMMISSIONING COST ESTIMATE

In accordance with 10 CFR 76.35(n), USEC has estimated the costs associated with the disposal of LLRW and mixed waste, and the disposition of depleted uranium generated by its operations. These costs are not considered decontamination and decommissioning costs, but rather production costs since they are incurred during the operation and maintenance of the plant. These cost estimates are cumulative, and are calculated one year in advance. The estimated cost for CY 2012 for the disposal of waste and for the disposition of depleted uranium generated by USEC is as follows:

Low Level and Mixed Waste.....	\$ 3.84 M
Depleted Uranium.....	\$176.16 M
Labor Cost.....	\$ 0.70 M
CY12 Cost.....	\$180.70 M

To account for uncertainties associated with either the estimated volumes or costs associated with the above cost estimates, a contingency factor of 25% is applied to the CY 2012 cost, which is consistent with the recommendations in the NRC's guidance on preparing Decommissioning Funding Plans (NUREG-1757). After application of the 25% contingency, USEC's total projected decommissioning funding liability for CY 2012 is \$ 225.9 million.

The bases for these cost estimates are described below in their respective subsection. USEC's cost estimates will be reviewed annually and revised, as necessary, to reflect any change in USEC's projected liability.

### 3.1 LOW LEVEL AND MIXED WASTE DISPOSAL

USEC generates many types of LLRW and mixed (hazardous and radioactive) waste at PGDP as described in the Radioactive Waste Management Program (RWMP). For the most part, all wastes are routinely treated on-site or treated and disposed of off-site as the wastes are generated. There is a quantity of LLRW that will remain on-site at the end of CY 2012. The LLRW

in storage includes waste that is being processed for off-site disposal. These wastes are being stored in compliance with USEC's Certificate of Compliance. USEC's LLRW and mixed waste decommissioning liability is calculated as the sum of the liability associated with the cost of disposal of that amount of waste estimated to be generated during the calendar year plus the liability associated with the estimated amount of waste that remains in storage at the end of the calendar year. Disposal costs include an additional percentage to cover taxes, processing fees, and transportation costs, but do not include labor, which is addressed in Section 3.3.

Estimated waste generation volumes are based on historical waste generation. Each individual LLRW and mixed waste stream has a different estimated volume and a different disposal cost. For the year, the different volumes of waste generated and their disposal cost estimates are averaged to establish an average disposal cost. USEC's cost estimate is based on the weighted average cost to manage waste. The disposal cost estimate for each waste stream in the weighted average cost is based upon existing contract prices, and historical cost of containers and transportation.

Except for those mixed wastes and LLRW that are stored on-site, as noted above, USEC anticipates that its waste disposal activities will be such that LLRW and most mixed waste generated in any given year will be disposed of within that year, or shortly thereafter. USEC funds this disposal cost out of accrued cash generated from operations. The decommissioning liability associated with the waste that remains in storage at the end of the calendar year at PGDP will be calculated based on the estimated volume of waste in storage at the end of the calendar year.

### **3.1.1 Low Level Radioactive Waste Disposal**

USEC anticipates generating a total of approximately 88,200 ft<sup>3</sup> of LLRW from routine operations and projects at the Paducah plant for CY 2012. USEC has assumed disposal of Paducah's LLRW at various commercial disposal facilities at an average weighted cost of \$35/ft<sup>3</sup>. The disposal cost for LLRW generated by USEC at the Paducah plant for CY 2012 is therefore estimated to be:

$$\text{Paducah LLRW: } 88,200 \text{ ft}^3 \times \$35/\text{ft}^3 = \$3.087 \text{ million for the year}$$

The cost of disposal of USEC's LLRW for CY 2012 is \$3.087 million.

### **3.1.2 Mixed Waste Disposal**

USEC anticipates generating a total of approximately 90ft<sup>3</sup> of mixed waste at Paducah plant in CY 2012. The current average cost estimate for disposing of this mixed waste product at Paducah is \$1,700/ft<sup>3</sup>. The disposal cost for this mixed waste generated at Paducah plant for CY 2012 is therefore estimated to be:

$$\text{Paducah Mixed Waste: } 90 \text{ ft}^3 \times \$1,700/\text{ft}^3 = \$0.153 \text{ million for the year}$$

The cost of disposal of USEC's mixed waste for CY 2012 is \$0.153 million.

### **3.1.3 Deleted**

### 3.1.4 Low-Level Radioactive Waste in Storage

As described earlier, there is an amount of LLRW that will remain in storage at the end of CY 2011. This waste will be disposed at a later date at an estimated cost of \$35/ft<sup>3</sup>. This disposal cost is determined based on the weighted average cost for this particular waste stream. At Paducah, this LLRW volume is estimated to be 17,000 ft<sup>3</sup>.

The disposal cost for this LLRW that will remain on-site at Paducah at the end of CY 2012 is estimated to be:

$$\text{Paducah LLRW in storage: } 17,000 \text{ ft}^3 \times \$35/\text{ft}^3 = \$0.595 \text{ million}$$

Therefore, the cost to dispose of the LLRW in storage in a subsequent calendar year is \$0.595 million.

### 3.2 Depleted Uranium Disposition

The estimate of decommissioning liability for depleted uranium is based on the generation of depleted uranium as described in the Depleted Uranium Management Plan. USEC's examination of the available information has identified that the unit cost to dispose of tails could range between \$3.99/kilogram (kg) uranium (U) to \$4.53/kg U, depending on a number of factors and assumptions. The unknown factors include: escalation rate(s) of various construction cost components; de-escalation rate(s) of future operating costs (to present day dollars); volume of tails disposed; revenue/avoided disposal cost from sale of conversion products (e.g., hydrogen fluoride) or higher assay tails (tail stripping); construction and operations budget contingencies; allocation of decontamination and decommissioning costs (between USEC and DOE); and DOE oversight costs.

USEC has developed the depleted uranium disposal cost estimate for PGDP based on a methodology and supporting data provided by DOE in support of USEC Inc.'s American Centrifuge Plant (ACP) licensing activities. This DOE methodology and supporting data enabled the development of a specific analysis for the ACP for the purposes of ACP decommissioning funding. The unit cost for disposal of ACP



generated depleted uranium was developed based upon costs associated with processing of the ACP depleted uranium at the DOE's Portsmouth DUF<sub>6</sub> Conversion Facility. USEC used the same methodology and supporting data provided by DOE in support of the ACP licensing activities to develop a PGDP-specific cost estimate to process USEC depleted uranium located at PGDP at the DOE's Paducah DUF<sub>6</sub> Conversion Facility. Based on the information provided by DOE, USEC determined that \$4.53/kgU (in 2012 dollars) is a reasonable depleted uranium disposal unit cost for the purposes of decommissioning funding of USEC's depleted uranium located at PGDP.

Based on the Depleted Uranium Management Plan, USEC's projected maximum liability at the end of CY 2012 for the disposition of depleted uranium generated by PGDP operations is 38,887,000 kilograms (refer to Table 1 in the Depleted Uranium Management Plan).

Total estimated disposal cost, in 2012 dollars, for depleted uranium is then calculated as follows:

<b>Projected Quantity (kgU)</b>	<b>Unit Cost (\$/kgU)</b>	<b>Disposal Cost (\$)</b>
38,887,000	4.53	176,158,110

The total estimated disposal cost for depleted uranium, after rounding, is \$176.16 million.

The above cost estimate includes processing as well as transportation and disposal of any by-product related to processing of the depleted uranium. There are no costs for transporting USEC's depleted uranium inventory to the DOE's Paducah DUF<sub>6</sub> conversion facility as this facility is co-located with PGDP.

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### **3.3 Labor Costs**

To account for labor costs associated with disposal of USEC generated waste, USEC has included provisions for a crew comprised of 1 first line manager, 2 technical staff, 1 health physics technician and 6 waste operators. The labor costs are calculated assuming the crews are available for a six month duration. Labor costs were estimated based on the 2012 PGDP labor rates. To account for this work being performed by a third party, an overhead rate on direct staff labor of 110%, plus 15% profit on labor and its overheads, was applied. Based on these assumptions, the labor costs associated with disposal of USEC generated waste is \$704,822.

### **4.0 REVIEW AND ADJUSTMENT OF DECOMMISSIONING COSTS AND FUNDING LEVELS**

USEC will review the decommissioning cost estimates and associated funding levels over the duration of the lease and adjust them when necessary. These adjustments will take into account such factors as changes in volume and cost estimates, changes in plant conditions, and changes in expected decontamination and decommissioning procedures. USEC will conduct such reviews in October of each year.

### **5.0 DECOMMISSIONING FUNDING MECHANISM**

USEC utilizes payment surety bond(s) and/or letter(s) of credit in conjunction with standby trust agreement(s) to ensure that sufficient funds will be available for waste disposal and depleted uranium disposition as set forth in this Program Description. The instruments are derived from Appendix A, NUREG-1757 Volume 3, "Consolidated NMSS Decommissioning Guidance, *Financial Assurance, Recordkeeping, and Timeliness*", dated September 2003. Non-executed versions are included in this Plan. Executed documents are submitted to the NRC for review as they are revised and reissued.

**PAYMENT SURETY BOND - NON--EXECUTED VERSION**

Date bond executed: \_\_\_\_\_

Effective date: \_\_\_\_\_

Principal: United States Enrichment Corporation  
6903 Rockledge Drive  
Bethesda, MD 20817

Type of organization: Delaware Chartered Corporation

NRC certificate of compliance number: GDP-1

Name and address of facilities: Paducah Gaseous Diffusion Plant

Amount(s) for decommissioning  
activity guaranteed by this bond: Estimated at [insert amount]

Surety(ies) [name(s) and business address(es)]

Type of organization: [insert "proprietorship," "joint venture," "partnership" or "corporation"]

State of incorporation: \_\_\_\_\_ (if applicable)

Surety's qualification in jurisdiction where facility is located.

Surety's bond number \_\_\_\_\_

Total penal sum of bond: \$ \_\_\_\_\_

Know all persons by these presents, That we, the Principal and Surety(ies) hereto, are firmly bound to the U.S. Nuclear Regulatory Commission (herein called NRC), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS, the NRC, an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 76, applicable to the Principal, which require that the holder of a certificate of compliance for a gaseous diffusion plant, or an applicant for a certificate of compliance for such a facility provide financial assurance that funds will be available when needed for those aspects of the ultimate disposal of waste and disposition of depleted uranium, decontamination and decommissioning of such a facility which are the financial responsibility of such holder or applicant (collectively, "decommissioning");

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of decommissioning of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility;

Or, if the Principal shall fund the standby trust fund in such amount(s) after an order to begin facility decommissioning is issued by the NRC or a U.S. district court or other court of competent jurisdiction;

Or, if the Principal shall provide alternative financial assurance and obtain the written approval of the NRC of such assurance, within 30 days after the date a notice of cancellation from the Surety(ies) is received by both the Principal and the NRC, then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the NRC that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund established by the Principal with [name of trustee] pursuant to the Standby Trust Agreement dated [date].

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the NRC provided, however, that cancellation shall not occur during the 90 days beginning on the date of receipt of the notice of cancellation by both the Principal and the NRC, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the NRC and to Surety(ies) 90 days prior to the proposed date of termination, provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond from the NRC.

If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

In Witness Whereof, the Principal and Surety(ies) have executed this financial guarantee bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies).

Principal: United States Enrichment Corporation

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate Seal]

Corporate Surety(ies)

[Name and address]

State of incorporation: \_\_\_\_\_

Liability limit: \$ \_\_\_\_\_

[Signature(s)]

[Name(s) and title(s)]

[Corporate Seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety(ies) above.]

Bond premium: \$ \_\_\_\_\_

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**IRREVOCABLE STANDBY LETTER OF CREDIT NO. [INSERT NUMBER]  
NON-EXECUTED VERSION**

This Credit Expires [*insert date*]

Issued To: U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. \_\_\_\_\_ in your favor, at the request and for the account of the United States Enrichment Corporation, 6903 Rockledge Drive, Bethesda, MD 20817, Certificate Number GDP-1, Docket Number 70-7001, up to the aggregate amount of [*insert dollar amount in words*], U.S. dollars \$\_\_\_\_\_, available upon presentation of:

- (1) your sight draft, bearing reference to this Letter of Credit No. \_\_\_\_\_, and
- (2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the U.S. Nuclear Regulatory Commission."

This letter of credit is issued in accordance with regulations issued under the authority of the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. NRC has promulgated regulations in title 10, Chapter I of the *Code of Federal Regulations*, Part 76, which require that a holder of, or an applicant for, an NRC certificate of compliance issued under 10 CFR Part 76 provide assurance that funds will be available when needed for decommissioning.

This letter of credit is effective as of [*insert date*] and shall expire on [*insert date at least 1 year later*], but such expiration date shall be automatically extended for a period of [*insert time period of at least 1 year*] on [*insert date*] and on each successive expiration date, unless, at least 90 days before the current expiration date, we notify both you and the United States Enrichment Corporation, by certified mail, as shown on the signed return receipts or overnight courier. If the United States Enrichment Corporation is unable to secure alternative financial assurance to replace this letter of credit within 30 days of notification of cancellation, NRC may draw upon the full value of this letter of credit prior to the then current expiration date. The bank shall give immediate notice to the applicant and NRC of any notice received or action filed alleging (1) the insolvency or bankruptcy of the financial institution or (2) any violation of regulatory requirements that could result in suspension or revocation of the bank's charter or license to do business. The financial institution also shall give immediate notice if the bank, for any reason, becomes unable to fulfill its obligation under the letter of credit unless a court order or other applicable law prevents the giving of such notice.



Whenever this letter of credit is drawn on, under and in compliance with the terms of this letter of credit, we shall duly honor such draft upon its presentation to us within 30 days, and we shall deposit the amount of the draft directly into the standby trust fund of the United States Enrichment Corporation in accordance with your instructions.

Each draft must bear on its face the clause: "Drawn under Letter of Credit No. \_\_\_\_\_, dated \_\_\_\_\_, and the total of this draft and all other drafts previously drawn under this letter of credit does not exceed [*insert amount of letter of credit*]."

[*Signature(s) and title(s) of official(s) of issuing institution*]  
[*Name, address, and phone number of issuing institution*]  
[*Date*]

This credit is subject to [*insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code"*].

**STANDBY TRUST AGREEMENT - NON--EXECUTED VERSION**

TRUST AGREEMENT, the Agreement entered into as of [date] by and between the United States Enrichment Corporation, a Delaware chartered corporation, herein referred to as the "Grantor," and [name and address of a national bank or other Trustee acceptable to the U.S. Nuclear Regulatory Commission], the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 76. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 76, certificate of compliance provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a surety bond in combination with a letter of credit to provide such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a surety bond and/or letter of credit this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Decommissioning" means those aspects of the ultimate disposal of waste and disposition of depleted uranium, decontamination and decommissioning of the Paducah Gaseous Diffusion Plant (GDP) which are the financial responsibility of the Grantor.
- (b) The term "Grantor" means the United States Enrichment Corporation and any successors or assigns thereof.
- (c) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Costs of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in Certificate of Compliance Number GDP-1 issued pursuant to 10 CFR Part 76.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan. The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

a. A certificate duly executed by the Secretary of the Grantor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and

b. A certificate attesting to the following conditions:

(1) that decommissioning is proceeding pursuant to an NRC-approved plan.

(2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and

(3) that the NRC has been given 30 days' prior notice of the Grantor's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed 10 percent of the outstanding balance of the Fund unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor, or other persons as specified by the NRC, from the Fund for expenditures for required activities in such amount as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity

and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal Government, and in obligations of the Federal Government such as GNMA, FNMA, and FHLM bonds and certificates or State and Municipal bonds rated BBB or higher by Standard and Poor's or Baa or higher by Moody's Investment Services; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary to allow duly authorized withdrawals at the joint request of the Grantor and the NRC or to reinvest in securities at the direction of the Grantor;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine

certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, where so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this standby trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the standby trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NRC, shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor. (See Schedule C.)

Section 13. Successor Trustee. Upon 90 days notice to the NRC, the Trustee may resign; upon 90 days notice to NRC and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor Trustee shall have the same powers and duties as those conferred upon the

Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the NRC, and the present Trustee by certified mail 10 days before such changes becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the grantor's orders, requests, and instructions. If the NRC issues orders, requests, or instructions to the Trustee these shall be in writing, signed by the NRC, or its designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor, or the NRC, hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instruction from the Grantor and/or the NRC, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor, or the NRC, issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the United States.

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

ATTEST:

[Insert name of Grantor]  
[Signature of representative  
of Grantor]  
[Title]

[Title]  
[Seal]

[Insert name of Trustee]  
[Signature of representative  
of Trustee]  
[Title]

ATTEST:  
[Title]  
[Seal]

United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE A

This Agreement demonstrates financial assurance for the following cost estimates for the following licensed activities:

U.S. NUCLEAR  
REGULATORY  
COMMISSION  
CERTIFICATE OF  
COMPLIANCE NUMBER

GDP-1

NAME AND  
ADDRESS OF  
LICENSEE

United States Enrichment Corporation  
6903 Rockledge Drive  
Bethesda, Maryland 20817

5600 Hobbs Road  
Paducah, Kentucky 42001

COST ESTIMATE FOR  
REGULATORY ASSURANCES  
DEMONSTRATED BY THIS  
AGREEMENT

[Insert amount of agreement]

The cost estimates listed here were submitted to the NRC on [insert date]

The Total Cost of decommissioning the GDP, assuming no liability for decontamination, is as per the decommissioning cost estimate on file with the NRC.

United States Enrichment Corporation \_\_\_\_\_

Trustee \_\_\_\_\_



United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE B

AMOUNT:  
AS EVIDENCED BY:

United States Enrichment Corporation \_\_\_\_\_

Trustee \_\_\_\_\_

United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE C

Trustee will be paid [insert amount] annually for services being provided under the standby trust agreement. This fee will apply whether or not payment has been made to the standby trust fund.

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PGDP Depleted Uranium Management Plan

# **DEPLETED URANIUM MANAGEMENT PLAN**

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**LIST OF EFFECTIVE PAGES**

<u>Pages</u>	<u>Revision</u>
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iii	RAC 11C028
iv	130
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**2.0 DEPLETED URANIUM PRODUCTION ESTIMATES..... 1**

**3.0 MANAGEMENT AND DISPOSITION PLAN.....2**

**4.0 ITEMS ADDRESSED BY COMPLIANCE PLAN..... 4**

**TABLE 1 ..... 5**

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## 1.0 INTRODUCTION

Under 10 Code of Federal Regulations (CFR) 76.35(m), the United States Enrichment Corporation (USEC) is required, as part of its application for a certificate of compliance, to provide:

“A description of the program, as appropriate, for processing, management, and disposal of mixed and radioactive wastes and depleted uranium generated by operations. This description must be limited to processing, management, and disposal activities conducted during operation of the facilities while under lease to the Corporation. The application must also include a description of the waste streams generated by enrichment operations, annual volumes of depleted uranium and waste expected, identification of radioisotopes contained in the waste, physical and chemical forms of the depleted uranium and waste, plans for managing the depleted uranium and waste, and plans for ultimate disposition of the waste and depleted uranium before turnover of the facilities to the Department of Energy under the terms of the lease agreement between the United States Enrichment Corporation and the Department.”

In accordance with 10 CFR 76.35(m), this plan describes USEC's program for the management and disposition of the depleted uranium (DU) produced as part of the enrichment activities at the Paducah (PGDP) Gaseous Diffusion Plant (GDP) and formerly at the Portsmouth (PORTS) GDP. USEC's program for the processing, management, and disposal of mixed and radioactive wastes is described in the Radioactive Waste Management Plan submitted as part of this application.

## 2.0 DEPLETED URANIUM PRODUCTION ESTIMATES

The production of depleted uranium will continue throughout the period that enrichment activities are conducted at PGDP. The production rate of depleted uranium is a function of the demand for enriched uranium, the portion of that demand supplied by the Russian enriched uranium, and the operating mode of the plant (determined by power load, power costs, enrichment levels, and other factors). USEC's projected depleted uranium production estimates cover the period of the Nuclear Regulatory Commission (NRC) Certificate of Compliance. The estimates are provided in Table 1, along with the amount of depleted uranium that USEC is responsible for, taking into account the factors discussed in Section 3.0 below.

The funds set aside for the disposition of depleted uranium will be based on the actual production rates of depleted uranium at the plant during the period that the plant is operated under the USEC/DOE Lease Agreement. USEC's funding plan for the disposition of depleted uranium is described in the Decommissioning Funding Program Description submitted as part of this application.

### 3.0 MANAGEMENT AND DISPOSITION PLAN

The depleted uranium is currently being stored as solid uranium hexafluoride ( $UF_6$ ) in carbon steel cylinders at PGDP (cylinder storage is described in PGDP SAR Section 3.7.2). The cylinders meet specific design requirements and special procedures and handling equipment are used for DU cylinder handling, movement, and stacking. USEC can continue to store depleted uranium in the solid state in these cylinders for an extended period without undue risk. In addition, cylinder inspections are conducted, as described below, to provide evidence of continued cylinder integrity.

The cylinders used for the storage of depleted uranium are inspected prior to being filled. After filling, the cylinder is cooled and then moved to a cylinder yard and stacked in place. After the cylinder is stacked in position, a baseline (initial) storage inspection is conducted at which point any damage to the cylinder is identified. If the cylinder is damaged, supervision is notified promptly and the damage evaluated for any actions required; the range of actions are to be commensurate with the cylinder damage. After the initial inspection, the cylinders are inspected every four years thereafter (except for any cylinders identified in the initial inspection as requiring a more frequent inspection); the condition of each cylinder is documented using a cylinder inspection data sheet.

Initial and quadrennial inspections are conducted on full cylinders that are normally single or double stacked. These inspections, conducted from ground level, with or without visual aids, are made using the following criteria:

- Cylinders positioned incorrectly (e.g., with valves in other than top center position); this often is an indication of potential stacking damage.
- Improperly stacked cylinders with potentially damaging contact (e.g., lifting lug resting on cylinder body, stiffening ring resting on stiffening ring, other criteria as described in the inspection procedure).
- Dents, bulges, cracks, metal loss, apparent by visual inspection, on the longitudinal and circumference welds.
- Dents, bulges, cracks, gouges, stacking damage, excessive scale or rust, apparent by visual inspection, on the cylinder shell.
- Bends, cracks or breaks from shell, impact damage, gouges, apparent by visual inspection, on the stiffening rings.
- Tears, dents, cracks, excessive scale or rust, or plugged weep hole, apparent by visual inspection, on the cylinder skirt (or valve protector).

Depleted uranium in the form of solid  $UF_6$  is suitable for conversion to other chemical forms. For example, the solid  $UF_6$  could be converted to  $U_3O_8$ ,  $UF_4$ , or uranium metal. There are a number of

existing and potential uses for depleted uranium, including use in radiation shielding material, armor-piercing projectiles, and counterweights. It is possible that increased energy costs may make recovery of additional  $^{235}\text{U}$  from the depleted uranium economically feasible in the future and that other potential uses may also be identified. No credit for any salvage value has been taken, however, in determining USEC's decommissioning funding liabilities. The conversion of the depleted uranium to one of these other forms in the near term could either foreclose other uses and disposition options because of the difficulty of processing some of these uranium compounds and the lack of processing facilities, or increase the cost of the ultimate disposition.

Moreover, the amount of depleted uranium that will be produced by USEC in the near term will be relatively small in comparison with the DOE's existing depleted uranium inventory. DOE is currently storing approximately 500,000 MTU of depleted uranium as solid  $\text{UF}_6$  in approximately 60,000 cylinders stored at various locations on the DOE portions of the GDP plant sites. USEC presently anticipates that the bulk of its inventory of depleted uranium will ultimately be dispositioned in the same manner as the larger DOE depleted uranium inventory.

In the meantime, USEC has established agreements with the DOE that affect USEC's liability associated with the disposal of depleted uranium generated by USEC. These agreements are the "Memorandum of Agreement Between the United States Department of Energy and the United States Enrichment Corporation Relating to Depleted Uranium," dated June 30, 1998, the "Agreement Between the U.S. Department of Energy ("DOE") and USEC Inc. ("USEC")," dated June 17, 2002, and the "Cooperative Agreement Between Department of Energy and USEC Inc. Concerning the American Centrifuge Demonstration Project," dated March 23, 2010.

The "Memorandum of Agreement Between the United States Department of Energy and the United States Enrichment Corporation Relating to Depleted Uranium," dated June 30, 1998 provides for the transfer to DOE of 2,026 48G cylinders containing approximately 16,674,000 Kg of depleted uranium generated by USEC's operations. In accordance with the agreement, USEC made the required full payment of over \$50M to DOE, covering the entire quantity of depleted uranium to be transferred. Therefore, the liability to dispose of the full amount of USEC's depleted uranium specified in the agreement now rests with DOE, further reducing the quantity of depleted uranium to be ultimately disposed of by USEC. Within these major parameters of the agreement, USEC and DOE agreed to implement the actual transfer of the material on a schedule covering the period of FY 1999 through 2004. Table 1 reflects the transfer.

The "Agreement Between the U.S. Department of Energy ("DOE") and USEC Inc. ("USEC")," dated June 17, 2002, provided, in part, for the DOE taking title of depleted uranium from USEC operations during USEC's fiscal years 2002 and 2003 and one-half the amount of depleted uranium generated during USEC's fiscal years 2004 and 2005. Therefore, as a result of this June 17, 2002 agreement, USEC's liability associated with the disposal of USEC generated depleted uranium was reduced by the quantity of depleted uranium specified in this June 17, 2002 agreement. The quantity of depleted uranium associated with this agreement is reflected in Table 1.

In 2010, DOE and USEC entered into the "Cooperative Agreement Between Department of Energy and USEC Inc. Concerning the American Centrifuge Demonstration Project," dated March 23, 2010, to provide support for the continued development and demonstration of the American Centrifuge technology. DOE agreed to accept title to 13,312,411 kg of DU to enable USEC to release encumbered funds. The quantity of Depleted Uranium associated with the agreement is reflected in Table 1.

In addition to USEC's enrichment operations, USEC also performs contract work for the DOE and DOE contractors. To compensate USEC for incurred costs associated with these contracts, DOE has taken title to depleted uranium further reducing USEC's liability for the disposal of depleted uranium. The quantity of depleted uranium associated with the compensation for these services is reflected in Table 1.

In addition to the foregoing outlets, USEC will, to the extent practicable, continue to market depleted uranium for uses in military applications, counterweights, and shielding applications. Efforts may also be made to develop other commercial uses that could include shielding for high-level waste storage and shipping casks, or multipurpose canisters being developed for the DOE high-level waste program.

The remaining inventory will continue to be stored as solid  $UF_6$  until it can be processed in accordance with the disposition strategy established by DOE for its inventory.

The estimated cost of conversion and disposition of the depleted uranium is provided in the Decommissioning Funding Program, along with a description of the funding mechanisms that will be used to address USEC's funding liabilities.

#### **4.0 ITEMS ADDRESSED BY COMPLIANCE PLAN**

Section deleted.

**Table 1. Estimated amount of depleted uranium (DU) generated by USEC and its disposition, in metric tons uranium (MTU) for PORTS and PGDP combined.**

Year	DU Generated by USEC <sup>1</sup>	Other DU <sup>4</sup>	Estimated net cumulative USEC DU <sup>2</sup>	USEC DU at PGDP	USEC DU at PORTS
July 28, 1998- Dec. 31, 2010	-	-	31,416 <sup>3</sup>	31,017	399
CY2011	5,419	(406)	36,429	36,429	0
CY2012	2,463	(5)	38,887	38,887	0
CY2013	0	0	38,887	38,887	0

Notes:

1. Projections are provided through the expiration date of the NRC Certificate of Compliance.
2. DOE retains liability for depleted uranium generated prior to USEC's privatization (July 28, 1998) per USEC Privatization Act (Public Law 104-134, Sec 3109, paragraph (a)(3)).
3. Reflects the cumulative amount of DU since USEC's privatization (July 28, 1998) for which USEC is responsible for disposition.
4. Includes depleted uranium refeed to the cascade or sold.

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Enclosure 3  
GDP 11-0033

Westchester Fire Insurance Company Rider

**RIDER**

Executed in Duplicate (2)

To be attached to and form part of:

Bond Number  
dated 12/31/2009

issued by the WESTCHESTER FIRE INSURANCE COMPANY

on behalf of  
(Principal) UNITED STATES ENRICHMENT CORPORATION

and in favor of  
(Obligee) U.S. NUCLEAR REGULATORY COMMISSION

Now therefore, it is agreed that in consideration of the premium charged, the attached bond shall be amended as follows:

**The bond amount shall be increased as follows:**


**FROM: \$30,800,000.00**

**TO: \$40,900,000.00**

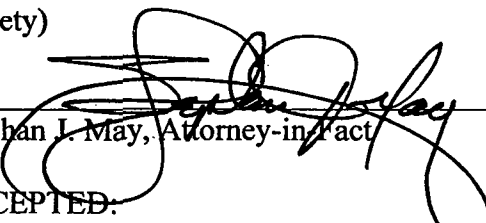
This Rider is to be Effective this 31st day of December, 2011

Signed, Sealed & Dated this 20th day of December, 2011

UNITED STATES ENRICHMENT CORPORATION

By:   
(Principal) *STEPHEN S. GREENE, VICE PRESIDENT, FINANCE & TREASURER*

WESTCHESTER FIRE INSURANCE COMPANY

(Surety)  
By:   
Stephan J. May, Attorney-in-Fact

ACCEPTED:  
U.S. NUCLEAR REGULATORY COMMISSION  
(Obligee)

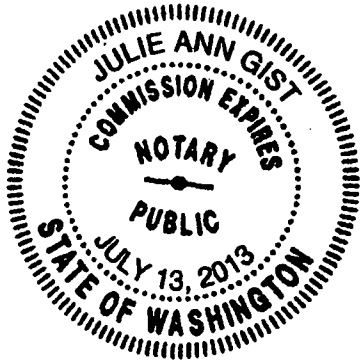
By: \_\_\_\_\_

NOTARY ACKNOWLEDGMENT

State of Washington

County of King ss:

On this 20<sup>th</sup> day of December, 2011, before me personally came Stephan J. May to me known and known to me to be the person who is described in and who executed the foregoing Agreement; and acknowledge(s) to me that he executed the same.



Julie Ann Gist  
(Signature of Notary Public)

My commission expires July 13, 2013

# Power of Attorney

## WESTCHESTER FIRE INSURANCE COMPANY

Know all men by these presents: That WESTCHESTER FIRE INSURANCE COMPANY, a corporation of the Commonwealth of Pennsylvania pursuant to the following Resolution, adopted by the Board of Directors of the said Company on December 11, 2006, to wit:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such persons written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

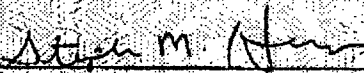
FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

Does hereby nominate, constitute and appoint Christopher M Spicher, Julie Gist, Mark Atkins, Sandra L Ropka, Stephan J May, all of the City of Seattle, Washington, each individually if there be more than one named, its true and lawful attorney-in-fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding Seventy Five million dollars & zero cents (\$75,000,000.00) and the execution of such writings in pursuance of these presents shall be as binding upon said Company, as fully and amply as if they had been duly executed and acknowledged by the regularly elected officers of the Company, at its principal office.

IN WITNESS WHEREOF, the said Stephen M. Haney, Vice-President, has hereunto subscribed his name and affixed the Corporate seal of the said WESTCHESTER FIRE INSURANCE COMPANY this 23 day of December 2010.

WESTCHESTER FIRE INSURANCE COMPANY:

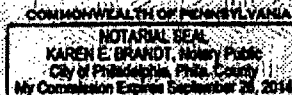


  
Stephen M. Haney, Vice President

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF PHILADELPHIA ss.

On this 23 day of December, AD. 2010 before me, a Notary Public of the Commonwealth of Pennsylvania in and for the County of Philadelphia came Stephen M. Haney, Vice-President of the WESTCHESTER FIRE INSURANCE COMPANY to me personally known to be the individual and officer who executed the preceding instrument, and he acknowledged that he executed the same, and that the seal affixed to the preceding instrument is the corporate seal of said Company, that the said corporate seal and his signature were duly affixed by the authority and direction of the said corporation, and that Resolution, adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia the day and year first above written.




  
Notary Public

I, the undersigned Assistant Secretary of the WESTCHESTER FIRE INSURANCE COMPANY, do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a substantially true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 20th day of DECEMBER 2011.



  
William L. Kelly, Assistant Secretary

THIS POWER OF ATTORNEY MAY NOT BE USED TO EXECUTE ANY BOND WITH AN INCEPTION DATE AFTER December 23, 2012.

**Standby Trust Schedules A, B, and C**

United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE A

This Agreement demonstrates financial assurance for the following cost estimates for the following licensed activities:

U.S. NUCLEAR  
REGULATORY  
COMMISSION  
CERTIFICATE OF  
COMPLIANCE NUMBER

GDP-1

NAME AND  
ADDRESS OF  
LICENSEE

United States Enrichment Corporation  
6903 Rockledge Drive  
Bethesda, Maryland 20817

ADDRESS OF  
LICENSED  
ACTIVITY

5600 Hobbs Road  
Kevil, KY 42053-9685

COST ESTIMATE FOR  
REGULATORY ASSURANCES  
DEMONSTRATED BY THIS  
AGREEMENT

\$225,900,000

The cost estimates listed here were submitted to the NRC on December 22, 2011.

The Total Cost of decommissioning the GDP, assuming no liability for decontamination, is as per the decommissioning cost estimate on file with the NRC.

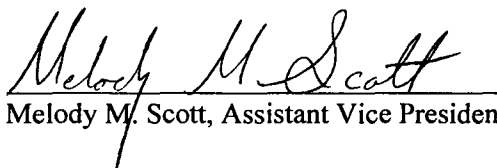
United States Enrichment Corporation



Stephen S. Greene

Vice President, Finance and Treasurer

U.S. Bank N.A.



Melody M. Scott, Assistant Vice President and Account Manager

United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE B

AMOUNT: \$225,900,000

AS EVIDENCED BY:

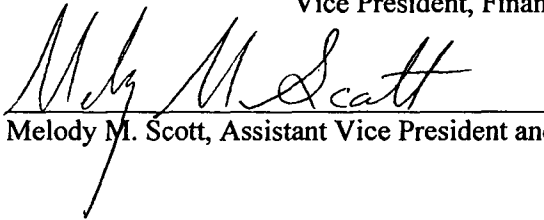
-Westchester Fire Insurance Company Bond Number	\$40,900,000	
-Westchester Fire Insurance Company Bond Number	\$63,300,000	
-SAFECO Insurance Company of America Bond Number	\$39,370,000	
-Argonaut Insurance Company Bond Number	\$15,000,000	
-National Union Fire Insurance Company of Pittsburgh, PA Bond Number		\$67,330,000

United States Enrichment Corporation



Stephen S. Greene  
Vice President, Finance and Treasurer

U.S. Bank N.A.



Melody M. Scott, Assistant Vice President and Account Manager

LETTER OF ACKNOWLEDGEMENT

STATE OF: Virginia

CITY OF: Richmond

On the 20 day of December, 2011, before me, a Notary Public in the for the city and state aforesaid, personally appeared Melody M. Scott, and she did depose and say that she is the Trust Officer of U.S. Bank N.A., Trustee, which executed the above instrument, that she knows the seal of said association, that the seal affixed to such instrument is such corporation seal; that it was so affixed by order of the association; and that she signed her name thereto by like order.



Signature of Notary Public

My Commission Expires: August 31, 2015  
Date  
Commission No 326923

United States Enrichment Corporation  
Standby Trust Agreement

SCHEDULE C

Trustee will be paid \$1,500.00 annually for services being provided under the standby trust agreement. This fee will apply whether or not payment has been made to the standby trust fund.



Analysis of Depleted Uranium Disposal Costs  
For PGDP

**Analysis of Depleted Uranium Disposal Costs  
For PGDP**

The United States Enrichment Corporation (USEC) has developed the depleted uranium disposal cost estimate for the depleted uranium located at PGDP based on a methodology and supporting data provided by the Department of Energy (DOE) in support of USEC Inc.'s American Centrifuge Plant (ACP) licensing activities. This methodology and supporting data was contained in a redacted report prepared by the DOE's consultant LMI (LMI report, Reference 1), detailing its methodology for estimating the unit cost of disposal of depleted uranium at the DOE's DUF<sub>6</sub> Conversion Facilities. The report was initially prepared by the DOE's contractor in response to a request by Louisiana Energy Services (LES) to support its application for the National Enrichment Facility (NEF) but the methodology and underlying information are applicable to PGDP with only minor adjustments.

Using the DOE contractor's methodology, USEC, Inc. developed a depleted uranium disposal cost estimate in support of USEC Inc.'s ACP licensing activities which has been accepted by the Nuclear Regulatory Commission (NUREG-1851, Reference 2). This unit cost for disposal of ACP generated depleted uranium was developed based upon costs associated with processing of the ACP depleted uranium at the DOE's DUF<sub>6</sub> Conversion Facility located in Piketon, Ohio. USEC used the methodology and supporting data provided by DOE in support of the ACP licensing activities to develop a PGDP-specific cost estimate to process USEC depleted uranium located at PGDP at the DOE's Paducah DUF<sub>6</sub> Conversion Facility. Based on the information provided by DOE, USEC determined that \$4.53/kgU (in 2012 dollars) is a reasonable depleted uranium disposal unit cost estimate for the purposes of decommissioning funding of USEC's depleted uranium located at PGDP. The PGDP-specific analysis is attached as Table 1.

These analyses utilized Scenarios 1 and 2 from the LMI report for the LES NEF (referred to as the "new uranium enrichment facility" in the LMI Report) as the base case for the Paducah DUF<sub>6</sub> Conversion Facility cost estimate.

**Reference:**

1. LMI Government Consulting, Report DE523T1, An Analysis of DOE's Cost to Dispose of DUF<sub>6</sub>, Revision 1, July 2005 [Redacted January 31, 2006].
2. NUREG-1851, Safety Evaluation Report for the American Centrifuge Plant in Piketon, Ohio

Table 1  
Attached

**Scenario 1: Process at Paducah in "Base" Plant**

Based on "An Analysis of DOE's Cost to Dispose of DUF6 - Revision 1", LMI, July 2005

		<u>per Kg DUF6</u>	<u>2012 dollars</u> <u>per Kg DUF6</u>
Investment costs			
Plant construction (\$000)	\$ 151,700		
Less: Contingency (20%)	\$ (25,283)		
Plant construction, net of contingency	\$ 126,417		
	DUF6 (MT)		
DOE	421,200		
DOE transferred from USEC - March 2010	19,693		
USEC - Paducah GDP	<u>57,525</u>		
Total	498,418		
Annual Capacity	18,000		
Years to Process	28		
USEC-GDP pro rata share	12%		
USEC pro rata investment cost	\$ 14,590		
Investment cost in equivalent annual value (c)	\$ 831		
Investment equivalent annual cost per Kg DUF6		\$ 0.40	\$ 0.47 (d)
Annual operating costs			
Plant operations	\$ 1.45		
Less: Contingency (10%)	\$ (0.13)		
Plant operations, net of contingency	\$ 1.32	\$ 1.53	(e)
Plant recapitalization costs	\$ 0.28	\$ 0.33	(e)
Transportation to Paducah costs	\$ -	\$ -	
Product disposal	\$ 0.37	\$ 0.43	(e)
Surveillance and maintenance costs	\$ 0.003	\$ 0.003	(e)
Decon & Decommissioning			
Plant D&D cost (\$000)	\$ 57,150		
USEC-GDP pro rata share	12%		
USEC pro rata D&D cost	\$ 6,596		
Equivalent uniform annual cost (c)	\$ 376		
Equivalent annual cost per Kg DUF6		\$ 0.18	\$ 0.21 (d)
Federal administrative charge		\$ 0.08	\$ 0.09
<b>Total per Kg DUF6</b>		<u>\$ 2.63</u>	<u>\$ 3.06</u>
<b>Total per Kg DU</b>		<u>\$ 3.89</u>	<u>\$ 4.53</u>

Assumptions:

- (a) Plant remains in operation until the DOE backlog and USEC-GDP DUF6 are processed.
- (b) USEC-GDP DUF6 is treated concurrently with other DUF6.
- (c) Using LMI methodology, cost includes a 3.5% annual charge applied to both current capital expenditures and future D&D expenditures over the projected life of the plant.
- (d) Cost escalated from 2004 dollars to 2012 dollars based on the following:
  - (i) the Implicit Price Deflator of the Gross Domestic Product --

	<u>IPD-GDP</u>	<u>Annual increase</u>
2004	96.786	
2005	100.000	3.3%
2006	103.231	3.2%
2007	106.227	2.9%
2008	108.582	2.2%
2009	109.729	1.1%
2010	110.992	1.2%

- (ii) CBO's August 2011 estimate of inflation as measured by a forecast of the GDP index --

2011	1.5%
2012	1.2%

- (e) DOE's projected operating costs in 2008 dollars were de-escalated to 2004 dollars by LMI using a DOE-suggested factor of 10.5%, which equals the following annual rates issued by DOE's Office of Engineering and Construction Management in January 2004:

Escalation Rate Assumptions for DOE Projects - Operations and Management:

2005 - 2.7%
2006 - 2.6%
2007 - 2.4%
2008 - 2.4%
Compound Rate - 10.5%

Operating costs in 2004 dollars are escalated to 2008 dollars using these inflation factors, then after 2008 using the factors described in note (d) above.

**Commitments Contained in this Submittal**

USEC will incorporate the DFP and DU Plan changes into a revision to the Application.