Security-Related Information – Withhold Under 10 CFR 2.390 USEC Proprietary Information



July 22, 2011 AET 11-0039

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

#### American Centrifuge Lead Cascade Facility

Docket Number 70-7003; Materials License Number SNM-7003

Response to Request for Additional Information Regarding the Revision to the Decommissioning Program for the American Centrifuge Lead Cascade Facility (TAC No. L33103) – Security-Related Information and USEC Proprietary Information

# INFORMATION TRANSMITTED HEREWITH IS PROTECTED FROM PUBLIC DISCLOSURE AS CONFIDENTIAL COMMERCIAL OR FINANCIAL INFORMATION AND/OR TRADE SECRETS PURSUANT TO 10 CFR 2.390 AND 9.17(a)(4)

Dear Ms. Haney:

#### Purpose

The purpose of this letter is to provide USEC Inc. (USEC) responses to the U.S. Nuclear Regulatory Commission's (NRC) request for additional information (RAI) related to the Decommissioning Program for the American Centrifuge Lead Cascade Facility (Lead Cascade) for review.

#### Background

On January 28, 2011 (Reference 1), USEC submitted proposed changes to Chapter 10.0 of the License Application and the Decommissioning Funding Plan (DFP) for the Lead Cascade to the NRC for review and approval. On May 24, 2011 (Reference 2), the NRC issued a RAI regarding the revision to the DFP.

Document herewith contains Security-Related Information – Withhold Under 10 CFR 2.390 USEC Proprietary Information When separated from Enclosures 4 and 5 this letter is uncontrolled.

NMSSOI

USEC Inc.

6903 Rockledge Drive, Bethesda, MD 20817-1818 Telephone 301-564-3200 Fax 301-564-3201 http://www.usec.com Ms. Catherine Haney July 22, 2011 AET 11-0039, Page 2

## **Discussion**

Enclosure 1 of this letter provides USEC's RAI responses. Proposed changes associated with Chapter 10.0 of the License Application and the DFP for the Lead Cascade are provided in Enclosure 2 of this letter. Changes provided within Enclosure 2 are designated with a revision bar in the right hand margin. A draft Surety Bond Rider and draft Standby Trust Agreement for the American Centrifuge Lead Cascade Facility are provided in Enclosure 3 of this letter. Labor Rate and Overhead Rate Calculation Files are provided in Enclosure 4 of this letter. A draft Certification of Financial Assurance for the American Centrifuge Lead Cascade Facility is being provided in Enclosure 5 of this letter.

Enclosure 4 of this letter contains USEC Proprietary Information; therefore, USEC requests that this information be withheld from public disclosure pursuant to 10 *Code of Federal Regulations* (CFR) 2.390(a)(4). An affidavit required by 10 CFR 2.390(b)(1)(ii) is provided as Enclosure 6 of this letter. Enclosure 5 contains Security-Related information; therefore, USEC requests that this enclosure be withheld from public disclosure pursuant to 10 CFR 2.390(d)(1).

# <u>Action</u>

Within 60 days following approval of the proposed changes, USEC will, in accordance with Materials License Condition 15, submit a final executed financial assurance instrument for the approved decommissioning cost estimate to the NRC.

# **Contact**

If you have any questions regarding this matter, please contact me at (301) 564-3470 or Terry Sensue at (740) 897-2412.

Sincerely,

Peter J. Miner Director, Regulatory and Quality Assurance

Enclosures: As Stated

cc: J. Calle – NRC RII J. Downs – NRC HQ D. Hartland – NRC RII O. Siurano – NRC HQ B. Smith – NRC HQ

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## References:

- 1. USEC letter AET 11-0001 from P.J. Miner to C. Haney (NRC) regarding Submittal of Revision to the Decommissioning Program for the American Centrifuge Lead Cascade Facility, dated January 28, 2011
- 2. NRC letter from O. Siurano-Perez to P.J. Miner (USEC) regarding Request for Additional Information Regarding the Revision to the Decommissioning Funding Plan for the American Centrifuge Lead Cascade Facility (TAC No. L33103), dated May 24, 2011

Document herewith contains Security-Related Information – Withhold Under 10 CFR 2.390 USEC Proprietary Information When separated from Enclosures 4 and 5 this letter is uncontrolled.

# Enclosure 1 of AET 11-0039

USEC Responses to Request for Additional Information for the American Centrifuge Lead Cascade Facility

> Information contained within does not contain Export Controlled Information

> > Reviewer: <u>G. Peed</u> Date: <u>07/19/2011</u>

# USEC Inc.'s (USEC) Responses to Request for Additional Information for the American Centrifuge Lead Cascade Facility

The USEC Inc. (USEC) responses to the Requests for Additional Information (RAIs) do not alter the justification or significance determination as presented in Enclosure 1 of USEC letter AET 11-0001 dated January 28, 2011.

<u>Comment 1</u>: Revise or justify the labor rates used in the cost estimate (NUREG-1757, Volume 3, Appendix A).

NUREG-1757, Volume 3, Appendix A, Table A.3.12, recommends that the decommissioning cost estimate (DCE) identify labor costs by labor category. Table C3.19 of the decommissioning cost estimate describes the labor categories used for the site-specific estimate. Table D3.12 of the decommissioning cost estimate provides the worker unit cost estimates, and states that "Constant \$/hr unit pay for Average Exempt or Non-Exempt employee. Labor Rates by Classification were used to determine labor dollars." Therefore, it appears that an exempt and non-exempt rate is used to estimate the labor cost associated with the various labor categories.

Hourly wage rates and their source do not appear to be provided for each individual labor category used in the cost estimate. In addition, the method for developing the exempt and non-exempt rates is unclear. The staff requests USEC to clarify the individual wage rates and the method used to develop the exempt/non-exempt wage rates.

#### USEC Response:

The exempt and non-exempt rates from Table D3.12 of the Decommissioning Funding Plan (DFP) for the Lead Cascade Facility (Lead Cascade) were used to estimate the labor costs associated with the various labor categories for each of the major decommissioning tasks depicted in Table D3.13 of the DFP for the Lead Cascade.

The hourly wage rates provided within Table D3.12 are an average hourly rate for exempt and non-exempt personnel. To arrive at these hourly wage rates, in-depth calculations were developed using the individual labor classification salaries for exempt and non-exempt personnel, which are based upon local prevailing wage rates (i.e., based upon 2010 Industry Compensation Survey for key labor classifications as stated in assumption 4 of Table D3.12). In addition, these in-depth calculations, using the individual labor classification salaries, were used to arrive at the total labor dollars used in Table D3.13 of the DFP for the Lead Cascade.

These in-depth calculation files related to the methodology of the labor rates are being provided within Enclosure 4 of this letter for your review. Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

<u>Comment 2</u>: Revise the labor rates used in the cost estimate to include overhead (NUREG-1757, Volume 3, Appendix A).

NUREG-1757, Volume 3, Appendix A, recommends that "[1]icensees should provide justification for the overhead rates assumed in the cost estimate."

Footnote 1 to Table C3.18 states that the "subtotal includes labor/materials/overhead allocations costs." However, the amount allocated to overhead is unclear. Table D3.12, the Worker Unit Cost Schedule, states that overhead is 0% of the labor cost. While the labor rates presented appear to include fringe benefits, the allocation to the base labor rate and fringe benefits is unclear. Therefore, the DCE does not clearly present an amount allocated to overhead or an overhead rate.

To verify that the DCE reasonably reflect third-party labor costs associated with decommissioning, the staff requests USEC to revise the labor rates in Table D3.12 to specify the overhead used in the DCE.

#### **USEC Response:**

The labor costs associated with all decommissioning tasks and activities include wages and benefits for third-party contractor staff performing decommissioning-related tasks, overhead costs, and contractor profit. Profitability is covered by applying 15 percent on all decommissioning costs except Other Indirect Costs (i.e., NRC fees, lease payments, taxes) and outside services associated with waste disposal as depicted in Note 3 of Table C3.18.

The estimate contained within Table D3.12 of the DFP for the Lead Cascade incorporates labor rates, which are based upon the local wages for each of the relevant labor classifications (i.e., based upon 2010 Industry Compensation Survey for key labor classifications as stated in assumption 4 of Table D3.12). To determine the appropriate overhead rate, USEC specifically identified various indirect cost components that would be needed to support the projected level of effort as indicated in the NUREG-1757, Volume 3, Appendix A, Section A.21, which states:

The term "overhead" typically includes costs that are not directly traceable to any particular product produced or project conducted by the firm. Thus, overhead typically includes "period" costs such as insurance, utilities, rent, supplies, property taxes, depreciation, and the costs of any wages, salaries, and benefits incurred as a result of the corporation's officers and "support staff" (e.g., accounting staff, legal staff, janitorial staff, security staff). To spread such costs across multiple products or projects fairly, firms usually calculate an "indirect" overhead rate that is applied to all direct labor hours (i.e., on those labor hours that are directly associated with particular products or projects). Licensees should provide justification for the overhead rates assumed in the cost estimate. The cost associated with the indirect support is based on USEC's experience at the Portsmouth Gaseous Diffusion Plant during calendar year 2010. Since the relevant cost of indirect support was specifically identified for each annual period, the overhead rate, as a percentage of direct cost, varies for each period.

These in-depth calculation files related to the methodology of the overhead rates are being provided within Enclosure 4 of this letter for your review. Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

## <u>Comment 3</u>: Provide a basis for unit costs (NUREG-1757 Volume 3, Appendix A.3.1).

NUREG-1757, Volume 3, Appendix A.3.1 recommends that "the labor estimates, material costs, and other factors of the cost estimate should have a clear and reasonable basis." In this regard, the staff was not able to identify a clear basis for the following costs:

- Table C3.14:
  - Unit disposal costs, including the disposal rates, transportation rates and shipping rates, labor rates, etc.
- Table C3.15:
  - o Centrifuge Dismantling Equipment;
  - o Cutting Machine;
  - o Degreasers;
  - o Decontamination Tanks;
  - o Blast Cabinets;
  - o B-25 Containers; and
  - o 55-gallon Barrels.
- Table C3.16:
  - Analytical Unit Cost

In some instances, these unit costs appear to be below the unit costs previously relied on. The staff requests USEC to provide a basis (e.g., contract rate, quote, or other source of unit costs) for its unit costs.

#### USEC Response:

To ensure the DFP and decommissioning cost estimate meet current requirements, they were updated in accordance with NUREG-1757 guidance instead of NUREG-1727, on which the Lead Cascade estimate was previously based. Table C3.14 (previously Table 3.7) was radically changed from the previous format of the decommissioning cost estimate to meet NUREG-1757. Secondly, the previous version of this table described the centrifuge waste disposal in two components: 1) machine – internals and 2) machine – casings. The table did not previously describe the waste details into 'solids' or 'liquids' or 'classified' or 'unclassified'. Furthermore, the waste disposal methodology described was essentially to cut the machines up into pieces that could be disposed in B-25 boxes. Therefore, the unit cost for the previous version of this table aligned around B-25 boxes

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and shipments. Based upon the NUREG-1757 guidance, USEC reworked the entire estimate, including the waste disposal methodology and listed these revised assumptions. One of these assumptions identified was to utilize the casing as a waste disposal cask. USEC developed this new cost estimate utilizing other similar licensee based experiences that occurred concurrently during the original license development timeframe and actual equipment costs incurred to determine the amount of labor and equipment costs that would be needed to adequately perform the decommissioning efforts. The proposed new unit costs are aligned around specified unit costs in \$/ft<sup>3</sup>. The current waste methodology was detailed into the specific waste types (i.e. solids - liquids and classified - non-classified). Waste type #4 Classified Waste (Machine - Casing and Internals) depicts the use of casings as a waste disposal cask system. In this regard, the unit costs listed in Table C3.14 of the DFP for the Lead Cascade were developed as specified in the fourth bulleted assumption (i.e.,  $[D^1] = \text{Unit Cost}^1$ ) or in the second subtable fifth bulleted assumption (i.e.,  $[K^3] = Unit Cost^3$ ) describing each components makeup (waste type) in \$/ft<sup>3</sup>. This proposed new format more closely aligns and resembles the NRC-approved DFP for the American Centrifuge Plant (ACP).

- Table C3.15 of the DFP for the Lead Cascade did not exist in the previous format of the decommissioning cost estimate. As stated within Note 1 of Table C3.15 of the DFP for the Lead Cascade, it is anticipated that the centrifuge dismantling equipment would be the existing specialized tooling and lifting fixtures for handling various machine components; therefore, no additional decommissioning costs would be incurred for this existing equipment. As for the remaining equipment/supplies listed within Table C3.15 and further described in the associated notes below the table, the unit costs were derived by obtaining existing manufacturer's current quotes for these types of equipment listed. Examples of the common manufacturer identified items and their respective quotes used in the development of the DFP for the Lead Cascade are available at the site for review.
- Table C3.16 of the DFP for the Lead Cascade unit cost is a provided value from a local analytical laboratory to capture their labor, materials consumed, inspections, and overheads for specified services (uranium isotopic analysis by alpha spectrometry including performance analysis) as defined in the seventh bulleted assumption (i.e., Analytical Unit Cost). The rest of this table depicts the development of the sample factor to define the estimate cost as defined in the sixth bullet.

Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

#### <u>Comment 4</u>: Verify computations and calculations.

In its review, the staff identified a few, potential inconsistencies with respect to calculations:

- Table C3.14 states that the Total Unclassified Waste Disposal Cost for Miscellaneous Total Compacted Equipment Solid Waste is \$226,670. However, it appears that the calculation should result in \$231,393.
- C-18 [correct reference is Table C3.14] of the DCE, for the Assumption labeled "[K<sup>3</sup>]," the Radiological Characterization Equipment unit cost is identified as \$.078/ft<sup>3</sup>. It appears this is a typographical error, and the unit cost might be \$0.78/ft<sup>3</sup>, as presented in the Assumption labeled "[K<sup>4</sup>]".
- Table C3.18, Total Decommissioning Costs, reports "Indirect Services" at \$1.60M. In its calculations, the staff finds this figure to be \$1.62M, however, this different may be due to rounding.

The staff requests USEC to verify the computations in the cost estimate and correct any inconsistencies.

#### USEC Response:

A review of the NRC's comments was completed with respect to identified estimate calculation inconsistencies.

- USEC agrees that this was a calculation error. The Total Unclassified Waste Disposal Cost for Miscellaneous Total Compacted Equipment Solid Waste has been changed to \$231,393, the Total Unclassified Waste Disposal Cost sub-total has been changed to \$244,230, and the Grand Total has been changed to \$1,861,009. Rounding of the Grand Total was not affected by this change. Enclosure 2 of this letter provides proposed changes to Table C3.14 of the DFP for the Lead Cascade.
- USEC agrees that this is a typographical error within the assumptions provided for Table C3.14; however, this typographical error does not affect the outcome of the calculation since the correct value of \$0.78/ft<sup>3</sup> was used in the calculation. The assumption labeled [K<sup>3</sup>] for Table C3.14 has been changed to reflect the correct value of \$0.78/ft<sup>3</sup>. Enclosure 2 of this letter provides proposed changes for Table C3.14 of the DFP for the Lead Cascade.
- The actual calculated value is \$1,600,348, which rounds and depicted in millions as \$1.60M as accurately reflected within Table C3.18 of the DFP. Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

# <u>Comment 5</u>: Clarify the assumptions with respect to the decommissioning methods relied on and their associated costs (NUREG-1757, Appendix A.3.1 and A.3.1.3).

NUREG-1757, Volume 3, Appendix A.3.1 states that "[t]he site-specific cost estimate required for a DFP should represent the licensee's best approximation of all direct and indirect costs of decommissioning its facilities under routine facility conditions." NUREG-1757, Volume 3, Appendix A.3.1.3 states that "key assumptions in the cost estimate should be identified and adequately justified."

Page 10-3 of the DCE states that "[t]here are two locations that have been identified for the machine Decontamination Service Area. A final determination has not been made concerning which option to utilize. The precise cost for each of these options will be determined later."

As such, suggesting multiple decommissioning scenarios and stating that the associated costs would be determined at a later time implies that the cost estimate may not represent the best estimate for decommissioning and decontamination at the time it was prepared. Therefore, the staff requests USEC to either revise the DCE so that it represents the best estimate for decommissioning or, if the DCE currently represents the best estimate, revise the DCE to provide more affirmative statements regarding the basis of the cost estimate.

#### **USEC Response:**

It is correct that two potential locations have been identified for the machine Decontamination Service Area (DSA). As stated within the first bulleted assumption of Section 10.0 of the License Application, machine dismantling and decontamination activities would occur in the X-7726 facility which is the first option; therefore, offering the best decommissioning cost estimate at this time. As committed within the fourth paragraph of Section 10.0, updates on cost and funding will be provided periodically as costs or funding mechanisms change significantly. Therefore, a new decommissioning cost estimate would be submitted for NRC review and approval, should the assumptions of this estimate change in the future. Likewise, a third-party contractor may chose to develop the DSA identified as option two as part of their Decommissioning Plan, which would also contain current decommissioning cost estimates to include current radiological contamination at the Lead Cascade and any new criteria or assumptions selected at that time.

Section 10.0, fifth paragraph, of the License Application for the Lead Cascade has been revised to remove the following text "Each option has some benefits. A final determination has not been made concerning which option to utilize. The precise cost for each of these options will be determined later." Also, Section 10.0, seventh paragraph, first bullet, has been revised as follows: "Machine dismantling and decontamination activities would occur in the X-7726 facility (i.e., option one), which are concurrently utilized for machine assembly and disassembly activities today.". Enclosure 2 of this letter provides proposed changes for the Chapter 10.0 of the License Application for the Lead Cascade.

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# <u>Comment 6</u>: Clarify the assumptions with respect to the disposal of centrifuges (NUREG-1757, Appendix A.3.1 and A.3.1.3).

NUREG-1757, Volume 3, Appendix A.3.1 recommends that "the labor estimates, material costs, and other factors of the cost estimate should have a clear and reasonable basis." NUREG-1757, Volume 3, Appendix A.3.1.3 states that "key assumptions in the cost estimate should be identified and adequately justified."

Page 10-6 of the DCE states that "[t]he centrifuge machine casing is to be utilized as the internally contaminated waste disposal 'cask.' This eliminates the purchase of other expensive, but approved waste disposal process equipment and minimizes the total waste disposed. This method also simplifies the waste disposal process and minimizes decontamination efforts."

It's unclear whether the above is an acceptable means for disposing of the centrifuges. The staff requests clarification in this regard.

#### **USEC Response:**

The U.S. Department of Energy (DOE) and the United States Enrichment Corporation, as the performing contractor, utilized this machine disposal methodology to remove over 1,100 centrifuges remaining in the X-3001 Process Building prior to sub-lease by USEC's current American Centrifuge Project as a viable waste disposal pathway. Sealed centrifuge machine casings proved to be an exceptional disposal 'cask'. Therefore, USEC has prior experience and utilized this similar base experience as the basis for the decommissioning cost estimate's centrifuge machine disposal methodology. Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

# <u>Comment 7</u>: Clarify the assumption regarding disposal of uranium hexafluoride (NUREG-1757, Appendix A.3.1, A.3.1.2.2, A.3.1.3).

NUREG-1757, Volume 3, Appendix A.3.1 recommends that "the labor estimates, material costs, and other factors of the cost estimate should have a clear and reasonable basis." NUREG-1757, Volume 3, Appendix A.3.1.2.2 states that non-labor cost items such as, but not limited to, "disposal costs" should be included in the DCE. NUREG-1757, Volume 3, Appendix A.3.1.3 states that "disposal of radioactive materials at zero costs should be supported by relevant information."

Section 3.0, page 5 of the DCE states that "[t]here are no decommissioning costs associated with the disposition of [uranium hexafluoride]  $UF_6$  since the Licensee intends to utilize this material in future enrichment operations."

In this regard, should USEC become unable to decommission the site, It's unclear whether the costs of disposing the  $UF_6$  remaining at the site is included. The staff requests clarification as to why the disposal of  $UF_6$  is not included in the DCE.

### **USEC Response:**

As stated within Section 10.2.1 of the License Application for the Lead Cascade, any uranium hexafluoride (UF<sub>6</sub>) tails material remaining at the facility will be transferred to an authorized facility at decommissioning and its ultimate disposition will be accounted for by the receiving facility (i.e., Paducah Gaseous Diffusion Plant in Paducah, Kentucky). Therefore, it is a reasonable assumption that no decommissioning activities or costs associated with the disposition of UF<sub>6</sub> would be warranted. Based upon the above, no changes need to be made to the DFP or Chapter 10.0 of the License Application for the Lead Cascade.

#### **<u>Comment 8</u>**: Clarify the scope of recordkeeping plans (10 CFR 70.25(g).

10 CFR 70.25(g)(3)(iii) requires Part 70 licensees to maintain records regarding "All areas outside of restricted areas where current and previous wastes have been buried as documented under 10 CFR 20.2108..." It is unclear whether Section 6.0, Record Keeping Plans Related to Decommissioning Funding, of the DCE includes this requirement. The staff requests clarification whether such records are maintained and appropriately included in the DCE.

## **USEC Response:**

This requirement was inadvertently omitted from the DFP and Chapter 10.0 of the License Application for the Lead Cascade. This requirement was added as a new sub-bullet in Section 6.0 of the DFP and Section 10.7 of the License Application which states "Areas outside of restricted areas where current and previous wastes have been buried as documented under 10 CFR 20.2108." Enclosure 2 of this letter provides proposed changes for Section 6.0 of the DFP and Section 10.7 of the License Application for the Lead Cascade.

# <u>Comment 9</u>: Clarify the method of decontaminating ductwork (NUREG-1757, Volume 3, Appendix A.3.1.3).

NUREG-1757, Volume 3, Appendix A.3.1.3 states that "key assumptions in the cost estimate should be identified and adequately justified."

An assumption to Table C3.5 states that "the ventilation ductwork is <u>essentially decontaminated</u> to a 'free release criteria' and remains in the building..." (emphasis added). What is meant by "essentially decontaminated" and the method for decontaminating and conducting surveys during the final status survey is unclear. The staff requests clarification in this regard.

#### **USEC Response:**

USEC intends to meet all requisite conditions to satisfy the NRC 'Free Release' criteria. Final radiological surveys will be performed in accordance with the Radiation Protection and Waste Management program requirements to confirm that the areas meet the 'Free Release' criteria stated in Section 4.8.2.4 of License Application for the Lead Cascade.

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USEC's methodology is to survey the ventilation ducting and when radioactive material/contamination is identified, then steps will be taken to clean and decontaminate. The word "essentially" has been removed from the second bulleted assumption provided within Table C3.5 because it is USEC's intention to identify and clean all necessary areas as stated in Section 4.8.2.4 of License Application for the Lead Cascade. The first bulleted assumption has been revised to state "Service module structural steel is not considered waste. These items are to be removed, disassembled, decontaminated to NRC 'Free Release' criteria (see Section 4.8.2.4 of License Application for the Lead Cascade,) and stored for later disposition or other use. Centrifuge machines are considered waste and accounted for in Table C3.14." Enclosure 2 of this letter provides proposed changes for the assumptions listed in Table C3.5 of the DFP for the Lead Cascade.

<u>Comment 10</u>: Clarify the basis for determining the area of contaminated floors (NUREG 1757, Volume 3, Appendix A.3.1.3).

NUREG-1757, Volume 3, Appendix A.3.1.3 states that "key assumptions in the cost estimate should be identified and adequately justified."

Table C3.5(A) of the DCE identifies the dimensions of buildings and contaminated floors. Note 4 to this table states that "Percentages/Areas listed are total facility areas considered and the realistic probability of floor space needing potential decontamination. Anticipated areas of decontamination is much less, but this value was used to determine resources necessary." In some cases, the floor areas identified as contaminated are a fraction of the entire floor area. While this might be acceptable, the method for determining contaminated/clean floor areas is not clear. The staff requests clarification in this regard.

#### **USEC Response:**

The Lead Cascade areas are on a routine survey frequency as described in Section 4.7.1 of the License Application for the Lead Cascade. The routine survey program involves surveys of the facility to determine workplace radiological conditions, effectiveness of contamination control measures, and proper identification and posting of radiological hazards. Routine survey frequencies are established based on the stability of operations as demonstrated by the consistency of survey results. Areas within the facility are categorized and scheduled for survey commensurate with their relative radiological hazard and contamination potential. Survey frequencies are based on area occupancy, potential for spread of contamination, and process knowledge.

Removable contamination currently exists on the internal of some piping/components within the Lead Cascade. These piping/components and Fixed Contamination Areas are readily identified by Radiation Protection postings as established in American Centrifuge procedures. These areas are posted for contaminated piping/components not that the area itself is contaminated. Since USEC maintains such high standards for cleanliness, the amount anticipated to need decontamination services is prorated during decommissioning. Therefore, USEC has defined

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three radiological anticipated areas/equipment contamination categories: 1) no anticipated or expected radiological area, 2) no anticipated or little expected radiological area, and 3) some anticipated or some expected radiological area based upon the relationship of the area with radiological material or process. For instance, Table C3.5(A) lists the entire process building as 303,680 ft<sup>2</sup>. USEC does not anticipate the entire building to become contaminated; at worst, only the area specified as the "Lead Cascade [train 3 area]," which is the identified 25,260 ft<sup>2</sup> (category 3). This assumption is very conservative. Another example in Table C3.5(A) is associated with X-3012 building. The entire building footprint is listed as 48,240 ft<sup>2</sup>. It is further described how much of this is the "Maintenance Shop" area and a "prorated" amount (listed as 60 percent), because some this space is office space (category 1), some is corridor, but near shop areas (category 2). This was conservatively estimated to be approximately 60 percent of total X-3012 area. Therefore, the total X-3012 area potentially needing to be decontaminated (worst case) is the "Maintenance Shop" for 11,700 ft<sup>2</sup> and 60 percent of the entire building at 28,950 ft<sup>2</sup>. This area (ft<sup>2</sup>) is totaled and labor is estimated in man-days to address this effort and is shown in Table C3.8 of the DFP for the Lead Cascade.

Note 4 of Table C3.5(A) has been revised to state "Percentages/Areas listed are total facility areas considered and the realistic probability of floor space needing potential Decontamination, based upon relationship of area with radiological material or process. Anticipated areas of decontamination are much less, but this value was used to determine resources necessary." Enclosure 2 of this letter provides proposed changes for Table C3.5(A) of the DFP for the Lead Cascade.

# <u>Comment 11</u>: Provide draft financial instruments that USEC intends to rely on as financial assurance. (10 CFR 70.25)

10 CFR 70.25 requires licensees to obtain financial assurance for the full amount of the cost estimate. The amount of the cost estimate may increase after the resolution of the preceding comments.

Page 13 of the DCE states that "[u]pon acceptance of this cost estimate and finalization of the specific funding instruments to be utilized, the Licensee will supplement its application to include the executed documentation." In order to potentially minimize duplication of effort and expense, the staff recommends that USEC provide proposed, final draft instruments (e.g., surety bond rider, revised Standby Trust schedules, etc) for review along with its responses to the above comments. The staff will also review the executed instruments that USEC submits to NRC.

# **USEC Response:**

USEC committed in letter AET 11-0001, dated January 28, 2011, to "within 45 days following approval of the proposed changes, USEC will submit a draft surety bond that provides the financial institute that will underwrite the bond for the approved decommissioning cost estimate to the NRC for review." However, based upon the NRC's request, a draft Surety Bond Rider and draft Standby Trust Agreement for the American Centrifuge Lead Cascade are being provided at this time within Enclosure 3 of this letter for review. The draft Surety Bond Rider also

incorporates the two comments provided by NRC letter dated May 17, 2011, from B. Smith to P. Miner regarding Draft Surety Bond Rider Associated with Request for Transfer of Licenses (TAC No. L33134).

#### <u>Comment 12</u>: Submit a Certification of Financial Assurance (10 CFR 70.25(e))

10 CFR 70.25(e) requires that a "decommissioning funding plan must also contain a certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning."

In this regard, it does not appear that USEC submitted a Certification of Financial Assurance (see NUREG 1757, Volume 3, Appendix A, "Standard Format and Content of Financial Assurance Mechanisms for Decommissioning," Section A.2). In order to potentially minimize duplication of effort and expense, the staff requests USEC to provide a proposed, final draft Certification of Financial Assurance for review. The staff will also review the executed Certification of Financial Assurance that USEC submits to NRC along with the submittal of the executed financial instruments.

### USEC Response:

In order to ensure that the Certification of Financial Assurance is submitted in the future, a Model Certification of Financial Assurance (as depicted within NUREG-1757, Volume 3, Appendix A, Section A.2.4) has been added to Appendix A of the DFP. This change also initiated a change to the Appendix A cover page and Table of Contents. Enclosure 2 of this letter provides proposed changes for the DFP for the Lead Cascade.

Also, as requested, a draft Certification of Financial Assurance for the American Centrifuge Lead Cascade is being provided within Enclosure 5 of this letter for review.

# Enclosure 2 of AET 11-0039

Proposed Changes to Chapter 10.0 of the License Application and Decommissioning Funding Plan for the American Centrifuge Lead Cascade Facility

> Information contained within does not contain Export Controlled Information

> > Reviewer: <u>G. Peed</u> Date: <u>07/19/2011</u>

There are two locations that have been identified for the machine Decontamination Service Area (DSA). Each option has some benefits. A final determination has not been made concerning which option to utilize. The precise cost for each of these options will be determined later.

The first option is to utilize the centrifuge assembly area as the disassembly area. The result would be that the X-7726 facility would become potentially contaminated and would need subsequent decontamination. The first-second machine decontamination option is to utilize the south half of X-3001 building for simplicity, but a machine dismantling stand would have to be fabricated. The rigid mast crane would be used to transport the centrifuge machines from the cascade area to this decontamination area. The second option is to utilize the centrifuge assembly area as the disassembly area. The result would be that X-7726 facility would become potentially contaminated and would need decontamination.

The following assumptions were utilized in this decommissioning plan:

- Machine dismantling and Ddecontamination activities will-would occur in the X-7726 facility (i.e., option one), which are concurrently utilized for machine assembly and disassembly activities today..south half of the X -3001 building where the rigid mast crane can be used for transport and disassembly.
- Although the Commercial Plant can use Lead Cascade equipment (e.g., centrifuge machines), the plan conservatively assumes that this equipment is dismantled and disposed of at the end of the Lead Cascade's useful life. No credit is taken for salvage value of this equipment or materials.
- No Lead Cascade activity and no decontamination liability are anticipated other than the cascade area in the X-3001 building and its associated utility bay area and the machine disassembly area in the X-7726 facility.
- No decontamination effort should be required for the other Lead Cascade leased buildings/facilities: X-7725, X-7726, X-7727H, and X-3012.

•Other non-Lead Cascade equipment in X-3001 in near the vicinity of the cascade area (e.g., DOE centrifuges, service modules, etc.) is removed prior to Lead Cascade operation and the DOE will retain ownership and control for this equipment.

The remaining subsections describe decommissioning plans and funding arrangements, and provide a detailed examination of the decontamination aspects of the program. The information here was developed in connection with the decommissioning cost estimate and is provided for information. Specific elements of the planning may change with the submittal of the decommissioning plan required at the time of license termination.

# **10.1 Decommissioning Program**

The plan for decommissioning is to promptly decontaminate or remove materials from

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# 10.2 Decommissioning Steps

Implementation of decommissioning may begin immediately following facility shutdown, since only low radiation levels exist at this facility. Overall, the decommissioning period is estimated to require slightly greater than one yearsix months from facility shutdown to completion of the final radiation survey. The order of activities to support decommissioning will generally be: process system purging, equipment dismantling and removal, decontamination, disposition of Confidential and Secret Restricted Data equipment and material, disposal of wastes, and completion of a final radiation survey. The next paragraphs provide an overview and explanation of each of these steps in more detail.

# 10.2.1 Overview

The intent of decommissioning the Lead Cascade is to turnover the buildings and facility infrastructure to the DOE as required by the Lease Agreement. The removed equipment includes: piping and components from systems providing UF<sub>6</sub> containment, systems in direct support of the centrifuges (e.g., cooling water), radioactive and hazardous waste handling systems, contaminated air filtration systems, etc. to the extent they are required to be removed by the Lease Agreement. The remaining facility infrastructure will include services such as electrical power supply, sanitary water, fire suppression, ventilation, communications, and sewage treatment.

Decontamination of facility components and structures will not require the installation of a new facility dedicated for that purpose since the Lead Cascade Decontamination Service AreaDSA will be designed to accommodate repetitive equipment decontamination of up to to-the currently expected number of centrifuge machines to be deployed in the Lead Cascade (e.g., up to 12276 machines plus an additional 248 machines as contingency), for a total of 1300 centrifuge machines and other components. The Decontamination Service AreaDSA is one of the two locations described in Section 10.0 of this license application. It will be the primary location for decontamination activities.

Although components may be reused in the Commercial Plant, for conservatism this plan assumes that these components will be decontaminated in accordance with radiation protection requirements and classified parts will be dispositioned and in accordance with the Lead Cascade Security Planrogram. Table 10.2-1, Items for Potential Decontamination at Decommissioning, lists major items from the facility that are expected to require decontamination. Any UF<sub>6</sub> tails material remaining at the facility will be transferred to an authorized facility at decommissioning and its ultimate disposition will be accounted by the receiving facility.

Contaminated portions of the buildings will be decontaminated as required. Structural contamination should be limited to the areas indicated on Figure 10.1-1 inside the CCZ of the facility. The remainder of the Lead Cascade facility is not expected to require decontamination. Good housekeeping practices during normal operation will maintain the other areas contamination free. When decontamination is complete, the Lead Cascade facilities will be surveyed to verify that further decontamination is not required. Decontamination activities will continue until Lead Cascade facilities are demonstrated to be suitable for de-leasing and turnover to DOE in accordance with Lease Agreement requirements.

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# 10.7 Record Keeping

Records important for safe and effective decommissioning of the facility are maintained in accordance with established Records Management and Document Control procedural requirements. Information maintained in these records include:

- Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site, including any known information on identification of involved radionuclides, quantities, forms, and concentrations;
- As-built drawings and modifications of structures and equipment in areas where radioactive materials are used and/or stored, including locations that possibly could be inaccessible (e.g., buried pipes which may be subject to contamination); and
- A list contained in a single document that is updated every two years of the following:
  - All areas designated and formerly designated as restricted areas as defined under 10 CFR 20.1003
  - All areas outside of restricted areas that require documentation under 10 CFR 70.25(g)(1)
  - Areas outside of restricted areas where current and previous wastes have been buried as documented under 10 CFR 20.2108
  - All areas outside of restricted areas that contain material such that, if the license expired, the Licensee would be required to either decontaminate the area to meet the criteria for decommissioning in 10 CFR Part 20, Subpart E, or would apply for NRC approval for disposal under 10 CFR 20.2002
- Records of the cost estimate performed for the DFP, and records of the funding method used for assuring funds, including a copy of the financial assurance mechanism and any supporting documentation.

Records of spills or other unusual occurrences may be limited only to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread in inaccessible areas as in the case of possible seepage into porous materials such as concrete.

# **10.8 Decontamination**

The facilities, procedures, and expected results of decontamination are described in the paragraphs below. Table 10.2-1 lists the major components and structures that may need to be decontaminated to some extent at the facility. Most items will not require any decontamination.

Since reprocessed uranium will not be used as feed in the Lead Cascade, no consideration of  $^{232}$ U, transuranic alpha-emitters, and fission product residues is necessary for the decontamination process. Only contamination from  $^{238}$ U,  $^{235}$ U,  $^{234}$ U, and their daughter products will require handling by decontamination processes. The primary contaminant throughout the facility will be in the form of small amounts of UO<sub>2</sub>F<sub>2</sub>, with even smaller amounts of UF<sub>4</sub> and other uranium compounds.

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of 10 CFR 70.25(e) and the recent NRC proposed change to financial assurance amendments for materials licensees (Federal Register, Volume 68 Number 192, October 3, 200367 FR 62403, October 7, 2002). The method for adjusting the cost estimate will consider the following:

- Changes in general inflation (e.g., labor rates, consumer price index)
- Changes in price of goods (e.g., packing materials)
- Changes in price of services (e.g., shipping and disposal cost)
- Changes in facility condition or operations
- Changes in decommissioning procedures or regulations

A record of the updating effort and results will be retained for review (see further discussion regarding record keeping, below). The NRC will be notified of any material changes to the decommissioning cost estimate and associated funding levels (e.g., significant increases in costs beyond anticipated inflation or the price of goods and services). To the extent the underlying instruments are revised to reflect changes in funding levels, the NRC will be notified as appropriate.

# 6.0 RECORD KEEPING PLANS RELATED TO DECOMMISSIONING FUNDING

Pursuant to 10 CFR 70.25(g), the Licensee will keep records until the termination of the license of information that could have a material effect on the ultimate costs of decommissioning. Information maintained in these records include:

- Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site, including any known information on identification of involved radionuclides, quantities, forms, and concentrations;
- As-built drawings and modifications of structures and equipment in areas where radioactive materials are used and/or stored, including locations that possibly could be inaccessible (e.g., buried pipes which may be subject to contamination); and
- A list contained in a single document that is updated every two years of the following:
  - All areas designated and formerly designated as restricted areas as defined under 10 CFR 20.1003
  - All areas outside of restricted areas that require documentation under 10 CFR 70.25(g)(1)
  - Areas outside of restricted areas where current and previous wastes have been buried as documented under 10 CFR 20.2108
  - All areas outside of restricted areas that contain material such that, if the license expired, the Licensee would be required to either decontaminate the area to meet the criteria for decommissioning in 10 CFR Part 20, Subpart E, or would apply for NRC approval for disposal under 10 CFR 20.2002
- Records of the cost estimate performed for the DFP, and records of the funding method used for assuring funds, including a copy of the financial assurance mechanism and any supporting documentation.

# Appendix A

Model Surety Bond Model Letter of Credit Model Specimen Certificate of Events Model Specimen Certificate of Resolution

and

Model Letter of Acknowledgement

and

Model Certification of Financial Assurance

# MODEL CERTIFICATION OF FINANCIAL ASSURANCE

# **CERTIFICATION OF FINANCIAL ASSURANCE**

Principal: [Legal names and business address of licensee] NRC license number, name and address of the facility

Issued to: U.S. Nuclear Regulatory Commission

I certify that [insert name of licensee] is licensed to possess the following types of [insert all that apply: "sealed sources or plated foils with a half-life great than 120 days licensed under 10 CFR Part 30," "unsealed byproduct material with a half-life greater than 120 days licensed under 10 CFR Part 30," "source material in a readily dispersible form licensed under 10 CFR Part 40," and "unsealed special nuclear material licensed under 10 CFR Part 70"] in the following amounts:

# Type of Material

# Amount of Material

[List materials and quantities of materials noted above. For **byproduct materials** and **special nuclear materials**, list separately the type and amount of **each isotope** authorized by the license.]

I also certify that financial assurance in the amount of [*insert the total of all prescribed amounts calculated from Checklist 2, or the amount of the site-specific cost estimate, in US dollars*] has been obtained for the purpose of decommissioning as prescribed by 10 CFR Part [*insert 30, 40, or 70*].

[Signatures and titles of officials of institution] [Corporate seal] [Date]

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<del>X-7725<sup>2,3</sup></del>	Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas	- <del>93,030</del>
<del>X-7726</del>	Centrifuge Training and Test Facility	<del>-28,066</del>
<del>Х-7727Н</del>	Transfer Corridor	-33,096
<del>Total</del>	Facilities (Area)	<del>556,589</del>

Dimension - amount listed is ground floor area in square feet, not a total building floor area.

Note 1: Area includes Lead Cascade Operational area (Train 3 specific) = 25,260 ft<sup>3</sup> and proposed DSA (Train 6) = 19,500 ft<sup>3</sup> = Total approximately 45,000 ft<sup>3</sup>

Note 2: Area includes Buffer Storage, passageway, centrifuge staging, transfer corridor, maintenance and battery charging area = 64,946 R<sup>2</sup> Note 3: Area includes container wash and container dry areas = 28,084 R<sup>2</sup>

Table C3.5 Number and Dimensions of Facility Components      (Total Volume)							
Component	Number of Components	Dimensions of Component (specify units)	Total Volume (ft <sup>3</sup> )	Compacted Factor (Volume Remaining)	Total Compacted Volume (ft <sup>3</sup> )	Level of Contamination	
X-3001							
Centrifuges	130 units	~30" dia x 45'	28,716			High Alpha	
Vacuum Pumps	6 ea	4' x 5' x 4'	480	1.0	480	High Alpha	
Chemical Traps	4 ea	8" dia x 8'	11	0.2	2	High Alpha	
Process Piping	2,925 Lft	1", 2", and 4" dia	255	0.2	51	High Alpha	
Piping <1"; Tubing	39,000 Lft	<1" dia	213	0.2	43	High Alpha	
Ventilation Ductwork (HVP)	600 Lft	4' x 3'	7,200			Low Alpha	
Process Valves	130 ea	0.4 ft <sup>3</sup>	52	1.0	52	High Alpha	
Miscellaneous Valves	524 ea	0.4 ft <sup>3</sup>	210	1.0	210	High Alpha	
UF <sub>6</sub> Portable Carts	4 ea	3' x 5' x 4'	240	0.5	120	Low Alpha	
Buffer Storage Stands	5 ea	5' x 25' x 1.5'	300	0.3	90	Low Alpha	

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Table C3.5 Number and Dimensions of Facility Components      (Total Volume)							
Component	Number of Components	Dimensions of Component (specify units)	Total Volume (ft <sup>3</sup> )	Compacted Factor (Volume Remaining)	Total Compacted Volume (ft <sup>3</sup> )	Level of Contamination	
Mass Spectrometers	3 ea	2' x 4' x 2' *VF	96	1.0	96	Low Alpha	
Mass Spectrometer Enclosure	1 ea	50' x 30' x 14'	21,000	0.15	3,150	Low Alpha	
Vent Monitor Traps	3 ea	3" Dia x 1.5'	0	0.3	••••••••••••••••••••••••••••••••••••••	Low Alpha	
Total Component Volumes			37,377		4,293		

**Assumptions:** 

• Service module structural steel is not considered waste. These items are to be removed, disassembled, decontaminated to NRC 'Free Release' criteria (see Section 4.8.2.4 of License Application for the Lead Cascade,) and stored for later disposition or other use. Centrifuge machines are considered waste and accounted for in Table C3.14.

• Total Compacted Volume does not include the centrifuge machines or service modules (structures); the ventilation ductwork is essentially decontaminated to a 'free release' criteria and remains in the building; centrifuge machines/casings are accounted in the waste stream by a unique pathways (see Table C3.14, page 2) and the service module structure is decontaminated to a 'free release' criteria and is stored for later disposition or other use.

Highlighted rows represent centrifuge casings and service module structure iter

• Highlighted rows represent ventilation ductwork (HVP system).

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Degreasers	2
Decontamination Tanks	3
Wet Blast Cabinets	1
Crusher	1

Note 1: Amount of wall ft<sup>3</sup> not given because it is not anticipated to need decontamination at the time of decommissioning. The floor space listed reonsists of the X-3001 caseade.

Note 2: The current project quantity consists of: up to 76 centrifuge machines, plus 24 contingency centrifuge machines, for a total of 100 centrifuge machines, which is less than the original estimate of 240 centrifuge machines.

Note 3: Process Valve sets greater than estimated number of machines due to constructed LC2, but has been partially seavenged. Miscellaneous valves are an actual physical count (not estimate).

# Table C3.5(A) Number and Dimensions of Facility Components (Total Area)

COMPONENT Number of Components		Dimensions of Component /Area (specify units) <sup>1</sup>	Total Area (ft <sup>2</sup> ) <sup>1</sup>	Level of Contamination
X-3001		416' x 730'		
Floor (entire building footprint)	1 Building	303,680 ft <sup>2</sup>		
Floors <sup>1</sup> (PB Train 3 area)	1 Building	25,260 ft <sup>2</sup>	25,260	Low Alpha
Floors <sup>1</sup> (PB Train 6 proposed Decontamination Service Area)	1 Building	19,740 ft <sup>2</sup>	19,740	Low Alpha
X-3012		240' x 201'		
Floor (entire building footprint)	1 Building	48,240 ft <sup>2</sup>		
Maintenance Shop	3 (floors only)	100' x 39'	11,700	Low Alpha
Floors (Potential; $\sim 60\%$ ) <sup>2</sup>	1 Building	28,950 ft <sup>2</sup>	28,950	Low Alpha
X-7725		540' x 820'		
Floor (entire building footprint)	1 Building	442,800 ft <sup>2</sup>		
Buffer Storage <sup>2</sup>	1 Area	~208' x 283'	64,946	Low Alpha
South Bldg Floors <sup>3</sup>	1 Area	536' x 272'	28,084	Low Alpha
X-7726		286' x 84'		
Floor (entire building footprint)	1 Building	24,024 ft <sup>2</sup>		
Floors (multiple levels)	1 Building	28,066 ft <sup>2</sup>	28,066	Low Alpha
Х-7727Н		~750' x 30'		

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COMPONENT	Number of Components	Dimensions of Component /Area (specify units) <sup>1</sup>	Total Area (ft <sup>2</sup> ) <sup>1</sup>	Level of Contamination
Floors	1 Building	26,078 ft <sup>2</sup>	26,078	Low Alpha
Total Area			<del>2,494,819</del> 232,8 24	

Dimensions - amount listed is general ground floor area and may not equate to a straight area calculation (1\*w). in square feet, not a total building floor area.

Note 1: Areas includes Lead Cascade Operational area (Train 3 specific) =  $25,260 \text{ ft}^2$  and the proposed DSA (Train 6) for a Total =  $45,00019,500 \text{ ft}^2$ . = Total approximately  $45,000 \text{ ft}^2$ 

Note 2: Area includes Buffer Storage, passage way, centrifuge staging, transfer corridor, maintenance and battery charging area for a Total = 64,946 ft<sup>2</sup>.

Note 3: Area includes Maintenance Material Storage areas (C/C1) for a Total container wash and container dry areas = 28,084 ft<sup>2</sup>.

Note 4: Percentages/Areas listed are total facility areas considered and the realistic probability of floor space needing potential Decontamination, based upon relationship of area with radiological material or process. Anticipated areas of decontamination is are much less, but this value was used to determine resources necessary.

Facility	Description	Dimension (ft <sup>2</sup> )
<del>X 3001</del>	Process Building; General	<del>307,793</del>
<del>X-3001<sup>4</sup></del>	Process Building; Train 3 Specific; and proposed Decontamination Service Area	-45,000
<del>X-3012</del>	Process Support Building	-49,604
<del>X-7725<sup>2, 3</sup></del>	Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas	<del>-93,030</del>
<del>X 7726</del>	Centrifuge Training and Test Facility	
<del>X-7727H</del>	Transfer Corridor	-33,096
Total	Facilities (Area)	<del>556,589</del>

# Table C3-7.14 Packaging, Shipping, and Disposal of Radioactive Wastes (Excluding Labor Costs)

Waste Type	[A] Disposal Volume (mft <sup>3</sup> ); # Centrifuges	[B] Number of Containers	[C] <del>Unit Cost (\$/m<sup>3</sup>)Container Volume</del>	[D] Unit Cost Surcharges (\$/ft <sup>3</sup> or \$/galcontainer)	[E] Total Unclassified Waste Disposal Costs
1: Miscellaneous Total Compacted Equipment Solid Waste <del>Machine</del> Internals	4,293 <del>270</del>	<u>49100</u>	90\$ <u>1,161.60</u>	\$ <del>2,800.0052.47</del>	\$ <del>593,632.00</del> <del>226,670231,393</del>
2: Liquid WasteMachine Casings	130 <del>270</del>	<mark>3100</mark>	55\$ <u>1,161.60</u>	\$ <del>2,800.00</del> 77.80	\$ <del>593,632.00</del> 12,837
Sub-Total	<del>540</del>	<del>200</del>	<u>\$ 1,161.60</u>	\$2,800.00	\$ <del>1,187,264.00</del> <del>239,507244,230</del>

#### **Assumptions:**

- Unclassified, Low-Level Contaminated Waste; liquid waste from machine disassembly
- $[A^{1}]$  = Total Compacted Volume (Table C3.5);  $[A^{2}] = \#$  centrifuges (installed plus spares) (Table C3.4aA)
- $[B^1] = A^1/C^1$ ;  $[B^2] = A^{2*5.4}$  qt/machine/220 qt/barrel;  $[C^1] = B-25$  boxes volume = 90 ft<sup>3</sup>;  $[C^2] = 55$  gal/barrel  $[D^1] = Unit Cost^1 = $52.47/ft^3 = $32.67$  (current disposal cost ) + \$3.69 transportation cost Energy Solutions, Clive, UT [1,791 miles one way trip and brokerage costs]) + \$15.33/ft^3 (labor costs Handling, Waste Engineering, Radiological Waste NDA Characterization, and HP Support) + \$0.78/ft<sup>3</sup> (Rad Characterization Equipment);  $[D^2] = \text{Unit Cost}^2 = \$77.80 = \$70.00/\text{gal (incineration and disposal at Diversified Scientific Services Inc. {DSSI}, Oak Ridge, TN) + $1.02/\text{gal (transportation and brokerage cost [350 miles one way trip to DSSI]) + $6.78/\text{gal (labor costs - Handling, Sampling, Lab Analyses) [$2011]$
- $[E^1] = B^1 C^1 D^1; [E^2] = B^2 C^2 D^2$
- Unclassified Waste Disposal Prorated Ratio [only used in computation for contractor profitability] = amount of waste cost that is directly associated with waste disposal and not subject to contractor profit: <sup>1</sup>(current disposal and transportation cost) / (total compacted solid waste cost) = 0.69; <sup>2</sup> (incineration and disposal cost + transportation cost) / (total liquid waste cost) = 0.91

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Waste Type	[F] # of Centrifuges	[G] Factor (B-25/ma)	[H] Number of Containers	[J] Container Volume	[K] Unit Cost (\$/ft <sup>3</sup> )	[M] Total Classified Waste Disposal Costs
3: Classified Waste (Machine Externals)	130	0.9	117	90	\$36.86	\$388,136
4: Classified Waste (Machine – Casing and Internals)	130	1.0	130	290	\$32.59	\$1,228,643
Sub-Total						\$1,616,779
Grand Total						\$ <del>1,856,286</del> 1,861, 009
Grand Total (Rounde	d, M)		1 . A			\$1.86

**Assumptions:** 

- Classified, Low-Level Contaminated Waste
- $[G^3]$  historical evidence = 0.9 B-25 boxes/machine (includes machine and service module components not • disposed in sealed casing);  $[G^4] = 1$  (no factor really needed)

- In sealed casing); [G ] = 1 (no factor reary needed) [H<sup>3</sup>] = number of B-25 boxes = FG; [H<sup>4</sup>] = number of machine casings [J<sup>3</sup>] = B-25 boxes volume = 90 ft<sup>3</sup>; [J<sup>4</sup>] = casing attributed volume = 290 ft<sup>3</sup> [K<sup>3</sup>] = Unit Cost<sup>3</sup> = \$36.86/ft<sup>3</sup> = \$16.35/ft<sup>3</sup> (current DOE classified disposal cost NTS, NV) + \$4.40/ft<sup>3</sup> (transportation [2,136 miles one way trip and brokerage costs) + \$15.33/ft<sup>3</sup> (labor costs Handling, Waste Engineering, Radiological NDA Waste Characterization, and HP Support) + \$-0.78/ft<sup>3</sup> (Radiological Characterization Equipment); [K<sup>4</sup>] = Unit Cost<sup>4</sup> = \$32.59/ft<sup>3</sup> = \$16.35/ft<sup>3</sup> (current DOE classified disposal cost NTS, NV) + \$5.11/ft<sup>3</sup> (transportation [2,136 miles one way trip and brokerage costs) + \$10.35/ft<sup>3</sup> (labor costs Handling, Waste Engineering, Radiological NDA Waste Characterization, and HP Support) + \$0.78/ft<sup>3</sup> costs - Handling, Waste Engineering, Radiological NDA Waste Characterization, and HP Support) + \$0.78/ft<sup>3</sup> (Radiological Characterization Equipment) [\$2011]
- $[M^3] = H^3 J^3 K^3; [M^4] = H^4 J^4 K^4$
- B-25 boxes contain volume gaps, which are anticipated to be filled to capacity from associated sources
- Classified Waste Disposal Prorated Ratio [only used in computation for contractor profitability] = amount of waste cost that is directly associated with waste disposal and not subject to contractor profit: <sup>3</sup>(current DOE disposal cost + transportation cost<sup>3</sup>) / (total classified waste cost<sup>3</sup>) = 0.56; <sup>4</sup>(current DOE disposal cost + transportation cost<sup>4</sup>) / (total classified waste cost<sup>4</sup>) = 0.66

Equipment/Supplies	[A] Quantity	[B] Unit Cost	[C] Total Equipment/Supply Cost
Centrifuge Dismantling			
Equipment <sup>1</sup>	4	N/C	
Cutting Machines <sup>2</sup>	2	\$308	\$616
Degreasers <sup>3</sup>	<b>2</b>	\$514	\$1,028
Decontamination Tanks <sup>4</sup>	3	\$1,541	\$4,623
Blast Cabinets <sup>5</sup>		\$1,027	\$1,027
B-25 Containers <sup>6</sup>	166	\$964	\$160,024
55 gallon Barrels <sup>7</sup>	3	\$76	\$228
TOTALS	37 7 5. 6 4 5 4 4 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5		\$167,546
TOTAL (Rounded, M)			<b>\$0.17</b>

# Table C3.15 Equipment/Supply Costs

Note 1: Anticipate using existing specialized tooling and lift fixtures for handling various machine components.

Note 2: Hand-tool metal cutting saws for cutting long parts into manageable sizes.

Note 3: Portable pressure washer for removing residue from the machines.

Note 4: Cost includes tank supports, suction pumps, associated valves and piping.

Note 5: Ad-hoc enclosures to support the degreasers operation.

Note 6: Approved metal containers for storage/shipment of dismantled machine and machine components. Quantity is sum of B-25 containers from Table C3.14 (49 + 117 = 166).

Note 7: Barrels for the capturing of dismantled machine and machine component fluids from Table C3.14 (3).

#### **Assumptions:**

• Some of these components currently exist by some means and works in conjunctions with Table C3.17.

• The primary option for centrifuge disassembly methodology is utilizing the X-7727 CTTF.

• [C] = AB

- Unit costs increased by Inflation Index = CY2009 (0.9%) \* CY2010 (0.8%) \* CY2011 (1.0%) Total Inflation Index (CY11) = 1.0272.
- [Reference A] = The Annual Inflation values for 2009 2011 (estimates are from the Congressional Budget Office –GDP Price Index Forecast; The Budge and Economic Outlook: An Update (August 2010).

# Enclosure 3 of AET 11-0039

# Draft Surety Bond Rider and Draft Standby Trust Agreement for the American Centrifuge Lead Cascade Facility

Information contained within does not contain Export Controlled Information

> Reviewer: <u>G. Peed</u> Date: <u>07/19/2011</u>

# RIDER

To be attached to and form	ı part of:
Bond Number dated	<u>K07228582</u> <u>4/25/2006</u>
issued by the	WESTCHESTER FIRE INSURANCE COMPANY
in the amount of	1,772.00
on behalf of (Principal)	USEC Inc.
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 Principal FROM: TO:	Name shall be amended as follows: USEC Inc. 6903 Rockledge Drive, Bethesda, MD 20817 USEC Inc. 6903 Rockledge Drive, Suite 400, Bethesda, MD 20817
The bond shal TO:	l be amended to include docket number: Docket Number: 70-7003
The address of FROM: TO:	the facility shall be amended as follows: Portsmouth Gaseous Diffusion Plant, Piketon, Ohio 3930 U.S. Route 23 South, P.O. 628, Piketon, OH 45661-0628
The bond amo FROM: TO:	unt shall be increased as follows: \$8,831,772.00 \$9,550,000.00
The State of Ir FROM:	icorporation shall be amended as follows: New York
10.	Incorporation Pennsylvania authorized to transact business in Ohio)
The bond lang TO:	uage shall be amended to add the following clause: No decrease in the penal sum takes place without the written permission of the NRC.
It is further understood and	agreed that all other terms and conditions of this bond shall remain unchanged.
This Rider is to be Effectiv	re this day of , 2011.
Signed, Sealed & Dated th	isday of, 2011.
USEC Inc.	
By: (Principal)	· · · · · · · · · · · · · · · ·
<u>WESTCHESTER FIRE I</u> (Surety)	NSURANCE COMPANY
By: K.D. Conrad, Attorney-in-	Fact

#### STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of Month , 2011 by and between USEC Inc., a Delaware corporation, herein referred to as the "Grantor," and U.S. Bank National Association, Corporate Trust Services, 1021 E. Cary Street, 18<sup>th</sup> floor, Richmond, VA 23219, 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 70. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a materials license issued pursuant to 10 CFR Part 70 provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a surety bond to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a surety bond, 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 "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor

(b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

<u>Section 2.</u> <u>Costs of Decommissioning.</u> This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number SNM-7003 issued pursuant to 10 CFR Part 70, as shown in Schedule A.

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

<u>Section 4.</u> 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 NRC.

<u>Section 5.</u> <u>Payment for Required Activities Specified in the Plan.</u> 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 Certificate of Events, 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 NRC has been given 30 days prior notice of USEC Inc.'s intent to withdraw funds from the escrow fund.

No withdrawal from the Fund for a particular license can exceed 10 percent of the remaining funds available for that license unless NRC written approval is attached.

In addition, the Trustee shall make payments from the Fund as 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 NRC from the Fund for expenditures for required activities in such amounts as NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

<u>Section 6.</u> <u>Trust Management.</u> 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 or State and Municipal bonds rated BBB or higher by Standard &

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.

<u>Section 8.</u> <u>Express Powers of Trustee.</u> 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 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, when 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.

<u>Section 9.</u> <u>Taxes and Expenses.</u> 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.

<u>Section 10</u>. <u>Annual Valuation</u>. 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 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.

<u>Section 11.</u> <u>Advice of Counsel.</u> 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.

<u>Section 12</u>. <u>Trustee Compensation</u>. 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 and the Grantor, 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, the successor accepts the appointment, the successor is ready to assume its duties as Trustee, and NRC has agreed, in writing, that the successor is an appropriate Federal or State government agency or an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency. The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. When the resignation or replacement is effective, 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 change 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.

<u>Section 14.</u> <u>Instructions to the Trustee.</u> 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

Enclosure 3 AET 11-0039 Page 6 of 9

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 instructions from the Grantor and/or the NRC, except as provided for herein.

<u>Section 15</u>. <u>Amendment of Agreement.</u> The 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. All amendments shall meet the relevant regulatory requirements of the NRC.

<u>Section 16.</u> <u>Irrevocability and Termination.</u> 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.

<u>Section 17.</u> <u>Immunity and Indemnification</u>. The Trustee shall not incur personal liability of any nature in connection with and 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.

<u>Section 18.</u> This Agreement shall be administered, construed, and enforced according to the laws of the State of Pennsylvania.

<u>Section 19.</u> <u>Interpretation and Severability.</u> 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.

	USEC Inc. (Grantor)
ATTEST:	
Timothy B. Hansen,	John C. Barpoulis, Vice President, Treasurer and
Sr. VP, General Counsel	Chief Financial Officer
& Secretary	
[Seal]	
	US Band National Association (Trustee)
(Trustee)	0.5. Dalik National Association (Trustee)
ATTEST:	
[Ivame]	Melody M. Scoll, Assistant vice President and Account Manager
[Title]	Trecount Manager
[Seal]	~
A <sup>ge</sup>	

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#### STANDBY TRUST AGREEMENT SCHEDULES

#### Schedule A

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

U.S. NUCLEAR REGULATORY COMMISSION LICENSE <u>NUMBER(S)</u>

S) NAME AND ADDRESS OF LICENSEE

SNM-7003 USEC Inc. 6903 Rockledge Drive, Suite 400 Bethesda, MD 20817 ADDRESS OF LICENSED ACTIVITY

American Centrifuge Lead Cascade Facility 3930 U.S. Route 23 South P.O. Box 628 Piketon, OH 45661-0628 COST ESTIMATES FOR REGULATORY ASSURANCES DEMONSTRATED BY THIS <u>AGREEMENT</u>

\$9,550,000.00

The cost estimates listed here were last adjusted on January 28, 2011 and submitted for NRC approval.

Schedule B

DOLLAR AMOUNT: \$9,550,000.00

AS EVIDENCED BY: Payment surety bond number K07228582 dated April 25, 2006 by Westchester Fire Insurance Company, as filed with NRC.

#### Schedule C

#### TRUSTEE:

U.S. Bank National Association Melody M. Scott, Assistant Vice President and Account Manager U.S. Bank Corporate Trust Services Two James Center 1021 E. Cary Street, 18th Floor Richmond, VA 23219 Phone: (804) 343-1560 Fax: (804) 343-1572 Email:melody.scott@usbank.com

Trustee's fees shall be \$1,500.00 plus expenses, which are not to exceed 10% of the annual fee, per year. These fees are subject to change upon funding of the trust.

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#### Letter of Acknowledgment

STATE OF

To Wit:

CITY OF

On this\_ personally appeared Melody M. Scott, and she did depose and say that she is the Trust Officer, of U.S. Bank National Association, Trustee, which executed the above instrument, that she knows the seal of said association, that the seal affixed to such instrument is such corporate seal, that it was so affixed by order of the association, and that she signed her name thereto by like order. 143

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# Enclosure 6 of AET 11-0039

# Affidavit

Information contained within does not contain Export Controlled Information

> Reviewer: <u>G. Peed</u> Date: <u>07/19/2011</u>

# AFFIDAVIT OF PETER J. MINER SUPPORTING APPLICATION TO WITHHOLD FROM PUBLIC DISCLOSURE CERTAIN INFORMATION CONTAINED IN ENCLOSURE 4 OF AET 11-0039 FOR THE AMERICAN CENTRIFUGE LEAD CASCADE FACILITY

- I, Peter J. Miner, of USEC Inc. (USEC), having been duly sworn, do hereby affirm and state:
  I have been authorized by USEC to (a) review the information owned by USEC and is referenced herein relating to the worker unit cost and total labor costs as part of the decommissioning cost estimate for the American Centrifuge Lead Cascade Facility (Lead Cascade), which USEC seeks to have withheld from public disclosure pursuant to section 147 of the *Atomic Energy Act* (AEA), as amended, 42 U.S.C § 2167, and 10 CFR 2.390(a)(4), and 9.17(a)(4), apply for the withholding of such information from public disclosure by the U.S. Nuclear Regulatory Commission (NRC) on behalf of USEC.
- Consistent with the provisions of 10 CFR 2.390(b)(4) of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
- i. The information sought to be withheld from public disclosure is owned and has been held in confidence by USEC.
- ii. The information is of a type customarily held in confidence by USEC and not customarily disclosed to the public. USEC has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute USEC policy and provide the rational basis required. Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in

the loss of an existing or potential competitive advantage, as follows:

- a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where presentation of its use by any of USEC's competitors without license from USEC constitutes a competitive economic advantage over other companies.
- b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).
- c) Its use by a competitor would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of USEC, its customers or suppliers.
- e) It reveals aspects of past, present, or future USEC or customer funded development plans and programs of potential commercial value to USEC.
- f) It contains patentable ideas, for which patent protection may be desirable.
- g) It reveals information concerning the terms and conditions, work performed, administration, performance under or extension of contracts with its customers or suppliers.
- iii. There are sound policy reasons behind the USEC system which include the following:
  - a) The use of such information by USEC gives USEC a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the USEC competitive position.
  - b) It is information, which is marketable in many ways. The extent to which such

information is available to competitors diminishes USEC's ability to sell products and services involving the use of the information.

- c) Use by our competitors would put USEC at a competitive disadvantage by reducing their expenditure of resources at USEC expense.
- d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components or proprietary information, any one component may be the key to the entire puzzle, thereby depriving USEC of a competitive advantage.
- e) Unrestricted disclosure would jeopardize the position of prominence of USEC in the world market, and thereby give a market advantage to the competition of those countries.
- f) The USEC capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- iv. The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- v. The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- 3. The proprietary information sought to be withheld is contained in Enclosure 4 to USEC letter AET 11-0039. Enclosure 4 contains USEC's in-depth calculations related to the decommissioning worker unit cost and total labor costs captured in the Decommissioning Cost Estimate for the Lead Cascade. The information contained within Enclosure 4 has not been previously disclosed and is likely to cause substantial harm to the competitive position

of USEC because it contains details of our labor rates which may provide insights into USEC's forward pricing rates.

This information is part of that which will enable USEC to:

- Continue to deploy the Lead Cascade; and
- Ensure adequate funding is available for decommissioning activities for the Lead Cascade.

Further, this information has substantial commercial value as follows:

- The development of the information described in part is the result of applying many person-hours and expenditure of thousands of dollars on analysis to develop the information which is sought to be withheld; and
- In order for a competitor of USEC to duplicate this information sought to be withheld, a similar process would have to be undertaken and a significant effort and resources would have to be expended.

Further the deponent sayeth not.

Peter J. Miner, having been duly sworn, hereby confirms that I am the Director, Regulatory and Quality Assurance of USEC, that I am authorized on behalf of USEC to review the information attached hereto and to sign and file with the U.S. Nuclear Regulatory Commission this affidavit and the attachments hereto, and that the statements made and matters set forth herein are true and correct to the best of my knowledge, information, and belief.

let fm

Peter J. Miner

State of Maryland ) ) ss. County of Montgomery )

On this 22nd day of July 2011, the individual signing above personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument, and acknowledged that he executed the same for the purposes therein contained. In witness hereof I hereunto set my hand and official seal.

Rita L. Peak, Notary Public My commission expires December 10, 2013

