January 28, 2011
AET 11-0001

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; License Number SNM-7003
Submittal of Revision to the Decommissioning Program for the American Centrifuge Lead Cascade Facility – 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

Dear Ms. Haney

Purpose
The purpose of this letter is to request the U.S. Nuclear Regulatory Commission (NRC) review of a proposed change to Chapter 10.0 of the License Application and the Decommissioning Funding Plan (DFP) for the License Application for the American Centrifuge Lead Cascade Facility (Lead Cascade), in accordance with NUREG-1757, *Consolidated NMSS Decommissioning Guidance.*

Background
The Lead Cascade NRC Materials License is due to expire on August 23, 2011. As discussed with NRC staff on July 1, 2010, regarding USEC's Lead Cascade License Renewal, the intent is to continue the same operations (i.e., authorized activities) under the license by renewing the license for an additional five years. NUREG-1727 or NUREG-1757 requires the licensee to submit a revised Decommissioning Funding Plan and decommissioning cost estimate as part of the license renewal process. To ensure the Decommissioning Funding Plan and decommissioning cost estimate meet current requirements, USEC is updating its cost estimate in accordance with NUREG-1757 guidance instead of NUREG-1727, on which the Lead Cascade estimate is currently based.

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Telephone 301-564-3200 Fax 301-564-3201 http://www.usec.com

NMSS01

Discussion

Enclosure 1 to this letter provides a detailed description, justification for the proposed change, and USEC determination that the proposed change associated with this request is not significant. Enclosure 2 of this letter contains the proposed changes for Chapter 10.0 of the License Application and the DFP for the Lead Cascade. Enclosure 3 of this letter provides proposed changes for Appendix D of the DFP for the Lead Cascade. Changes from the previously approved documents are depicted with a revision bar in the right margin.

Enclosure 3 contains USEC Proprietary Information; therefore, USEC requests that this enclosure 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 4 of this letter.

Action

The proposed changes to the DFP made to confirm to NUREG-1757 guidance requires NRC prior review and approval. USEC requests NRC review and acceptance of the enclosed decommissioning funding plan cost estimate by April 29, 2011. 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. 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

Enclosure 1 of AET 11-0001

Detailed Description, Justification for Change, and Significance Determination

Information contained within
does not contain
Export Controlled Information

Reviewer: R.S. Lykowski
Date: 01/27/2011

Detailed Description, Justification for Change, and Significance Determination

The proposed changes described below relate to the decommissioning estimate for the American Centrifuge Lead Cascade Facility (Lead Cascade).

Detailed Description of Change

The proposed changes to Chapter 10.0 of the License Application and the Decommissioning Funding Plan (DFP) are contained in Enclosures 2 and 3 of this letter and are identified by the following method:

- Strikeout - Identifies text being removed
- Bold and underline - Identifies text that is being added

Justification for Change

The DFP and decommissioning cost estimate were originally prepared in accordance with NUREG-1727, *NMSS Decommissioning Standard Review Plan.* Since the original DFP and decommissioning cost estimate were prepared, the NRC consolidated and updated numerous decommissioning guidance documents into NUREG-1757, *Consolidated NMSS Decommissioning Guidance.* As part of the license renewal process, the DFP and decommissioning cost estimate were revised in accordance with NUREG-1757, to ensure they meet current guidance.

The proposed changes to Chapter 10.0 of the License Application, the DFP, and the decommissioning cost estimate for the Lead Cascade have been updated to reflect current operations, calculated in calendar year 2011 dollars, and reformatted consistent with the guidance provided within NUREG-1757. The proposed changes to the DFP and decommissioning cost estimate for the Lead Cascade also meet the three-year periodicity requirement of both 10 *Code of Federal Regulations* (CFR) 70.25(a) and our Materials License, Condition 15.

Significance Determination

USEC Inc. (USEC) has reviewed the proposed change associated with this request and provides the following Significance Determination for consideration.

1. No significant change to any condition to the License.

   There is no License Condition that pertains to the proposed change; therefore, making the proposed change will not make any significant change to any condition to the license.

Detailed Description, Justification for Change, and Significance Determination

2. No significant increase in the probability of occurrence or consequences of previously evaluated accident.

   The proposed change will not change any accident scenario identified in the Integrated Safety Analysis (ISA) Summary or exceed the performance requirements of 10 CFR 70.61; therefore, there is no significant increase in the probability of occurrence or consequences of the previously evaluated accident.

3. No new or different type of accident.

   The proposed change does not create new or different types of accident sequences that, unless mitigated or prevented, would exceed the performance requirements of 10 CFR 70.61 and that have not previously been described in the ISA Summary for the Lead Cascade.

4. No significant reduction in margins of safety.

   The proposed change revises Chapter 10.0 of the License Application and the DFP to follow NUREG-1757 guidance and makes no changes to structures, systems, components, or operation of the Lead Cascade. Therefore, the proposed change does not decrease the margin of safety associated with any Items Relied On For Safety that are being credited to ensure the performance requirements of 10 CFR 70.61 are met.

5. No significant decrease in the effectiveness of any programs or plans contained in the licensing documents.

   The change will not decrease the overall level of security system performance needed to protect against the loss or compromise of classified matter. Other than the DFP, the proposed change does not affect any other plant safety, safeguards or security programs or any other programs or plans contained in the License Application and supporting documents for the Lead Cascade. The proposed change will not decrease the effectiveness of the Emergency Plan, Security Program/Plans, Fundamental Nuclear Material Control Plan, or Quality Assurance Program Description. Therefore, the proposed change will not decrease the effectiveness of the Emergency Plan, Security Program/Plans, Fundamental Nuclear Material Control Plan, or Quality Assurance Program Description.

6. The proposed change does not result in undue risk to: 1) public health and safety; 2) common defense and security; and 3) environment.

   There is no increase in the probability of occurrence or consequences of a previously evaluated accident or malfunction of equipment important to safety. The proposed change will not increase the likelihood the protected material or special nuclear material will be accessible to

Detailed Description, Justification for Change, and Significance Determination

unauthorized personnel. There are no new accident initiators, increases in hazardous materials or waste streams. Therefore, the proposed change does not result in undue risk to public health and safety, the environment, or to the common defense and security.

7. There is no change in the type or significant increases in the amounts of any effluents that may be released off-site.

   The proposed change does not create any new or unusual sources of hazardous substances, hazardous waste, or new waste streams that could be generated or used in unacceptable levels that exceed applicable regulatory requirements. Therefore, there is no change in the type or significant increases in the amounts of any effluents that may be released off-site.

8. There is no significant increase in individual or cumulative occupational radiation exposure.

   The proposed change will not increase radiological or chemical releases beyond applicable regulatory limits and will not create any new or unusual sources of radioactive waste. Therefore, the proposed change will have no significant increase in individual or cumulative occupational radiation exposure.

9. There is no significant construction impact.

   Revising Chapter 10.0 of the License Application, the DFP, and cost estimate to meet the guidance of NUREG-1757 will have no effect on the operations of the Lead Cascade. Moreover, decommissioning of the facility would occur after operations have ceased; therefore, the proposed changes can not have any significant construction impact on the Lead Cascade.

Enclosure 2 of AET 11-0001

Proposed Changes for Chapter 10.0 of the License Application and the Decommissioning Funding Plan for the Lead Cascade

Information contained within
does not contain
Export Controlled Information

Reviewer: R.S. Lykowski
Date: 01/27/2011

10.0 DECOMMISSIONING

The Lead Cascade is located ~~at~~ **on** the **U.S. Department of Energy (DOE)** Portsmouth Gaseous Diffusion Plant (PORTS) **reservation**. The Licensee has operated the Lead Cascade since June 6, 2007. Materials License SNM-7003 provides the expiration date for the license. Information on the Licensee, the location of the site, and the types and authorized uses of licensed material is provided in Section 1.2, Institutional Information, and a description of the site and immediate environs is provided in Section 1.3, Site Description.

Consistent with the Agreement between USEC and the ~~U.S. Department of Energy~~ (DOE), any Commercial Plant would be sited either at the PORTS or the Paducah Gaseous Diffusion Plant (PGDP). PORTS ~~has been~~**was** chosen as the location for the Commercial Plant. Consequently, the Lead Cascade would likely be included in the Commercial Plant license and would be decommissioned as part of the Commercial Plant **construction** efforts. If no Commercial Plant is deployed, then at the end of Lead Cascade operation, the Lead Cascade would be decommissioned prior to being de-leased and returned to DOE. For conservatism, it was assumed that centrifuges and other **installed** equipment would be removed and the Lead Cascade decommissioned in accordance with the lease agreement with DOE.

Centrifuges, service modules, process headers, vacuum pumps, and traps are the typical equipment to be removed by the Licensee; only the building shells and the facility infrastructure, including equipment that existed at the time of lease (e.g., rigid mast crane, utilities, etc.) will remain. The cascade area floor will be monitored for contamination, and will be decontaminated, if required. The remaining facilities will be decontaminated where needed to comply with lease turnover requirements. Confidential and Secret Restricted Data material, components, and documents will be transferred to the Commercial Plant or dispositioned in accordance with the ~~Lead Cascade~~ Security Program **for the American Centrifuge Plant**, Chapter 2: Security Plan for the Protection of Classified Matter. Uranium hexafluoride (UF_6) material will be transferred to an authorized facility. Radioactive wastes will be disposed of at licensed low-level waste disposal sites. Hazardous wastes will be treated or disposed of ~~in~~ **at** licensed hazardous waste facilities. Following the Licensee's decommissioning activities, the facilities will be de-leased and returned to DOE in accordance with Lease Agreement requirements.

Activities required for decommissioning have been identified~~,~~ and decommissioning costs have been estimated. Costs projected were developed based on the experience at PORTS during the transition to Cold Standby operation. Other activities and estimated costs for decommissioning were developed based on an ~~recent~~ evaluation prepared by USEC concerning removal of the DOE centrifuges that **previously** remain**ed** at the PORTS site in the former Gas Centrifuge Enrichment Plant (GCEP) process buildings. Additionally, USEC has performed dismantling and decontamination work at the GDPs; data and experience from these activities allowed a realistic estimation of decommissioning financial expenditures. Using the cost data as a basis, financial arrangements are made to cover costs required for returning the Lead Cascade facilities to DOE in accordance with the terms of the Lease Agreement. Updates on cost and funding will be provided periodically as cost**s** or funding mechanisms change significantly. A more detailed ~~Lead Cascade plan for completion of d~~**D**ecommissioning **Plan for the Lead Cascade** will be submitted in accordance with 10 *Code of Federal Regulations* (CFR) 70.38 ~~at or~~

~~about the time o~~**in order to terminate the** ~~f~~ license ~~termination.~~

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** ~~D~~**d**econtamination activit**ies**~~y will~~ **would** occur in the **X-7726 facility, 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

the facilities that are required under the Lease Agreement to return the facilities to DOE.

Decommissioning planning begins by incorporating special design features into the facility. These features will simplify eventual dismantling and decontamination. The plans are implemented through proper management and Radiation Protection and Industrial Safety programs. Decommissioning policies address radioactive waste management, physical security, and nuclear materials control and accountability. Each of these areas of the decommissioning program is discussed in the remainder of this section.

10.1.1 Decommissioning Design Features

Specific features are incorporated into the facility design to accommodate decontamination and decommissioning activities. The major features are described below.

10.1.1.1 Radioactive Contamination Control

The following features primarily serve to minimize the spread of radioactive contamination during operation, and simplify the eventual facility decommissioning. As a result, worker exposure to radiation, and radioactive waste volumes are minimized as well.

- Areas of the facility are sectioned off into clean areas and potentially contaminated areas, called Contamination Control Zones (CCZs) that have access control requirements. CCZs are essentially buffer zones established where discrete areas of contamination may be occasionally encountered as a result of facility size. Areas that are contaminated are called Contamination Areas (CAs). These CAs have additional access controls, and a number of requirements are imposed on work procedures for contamination control. Figure 10.1-1 (located in Appendix A of this license application) provides a floor plan showing the CCZ boundary. Procedures for these areas are encompassed by the Radiation Protection program, and serve to minimize the spread of contamination and simplify eventual decommissioning.

- Non-radioactive process equipment and systems are minimized in locations subject to likely contamination. This limits the size of the CCZs, and limits the activities occurring inside these areas.

10.1.1.2 Worker Exposure and Waste Volume Control

The following features primarily serve to minimize worker exposure to radiation and minimize radioactive waste volumes during decontamination activities. As a result, the spread of contamination is minimized as well.

- Ample access is provided for efficient equipment dismantling and removal of equipment that may be contaminated. This minimizes the time of worker exposure.

- Connections in the process systems are provided for thorough purging at facility shutdown. This removes a significant portion of radioactive contamination prior to disassembly.

- Design drawings prepared for the facility, simplify the planning and implementing of decontamination procedures.

- Worker access to contaminated areas is controlled to assure that workers wear proper protective equipment and limit their time in the areas.

- **The 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.**

This figure is withheld pursuant to 10 CFR 2.390 and is located in Appendix A of this license application

Figure 10.1-1
Contamination Control Zone

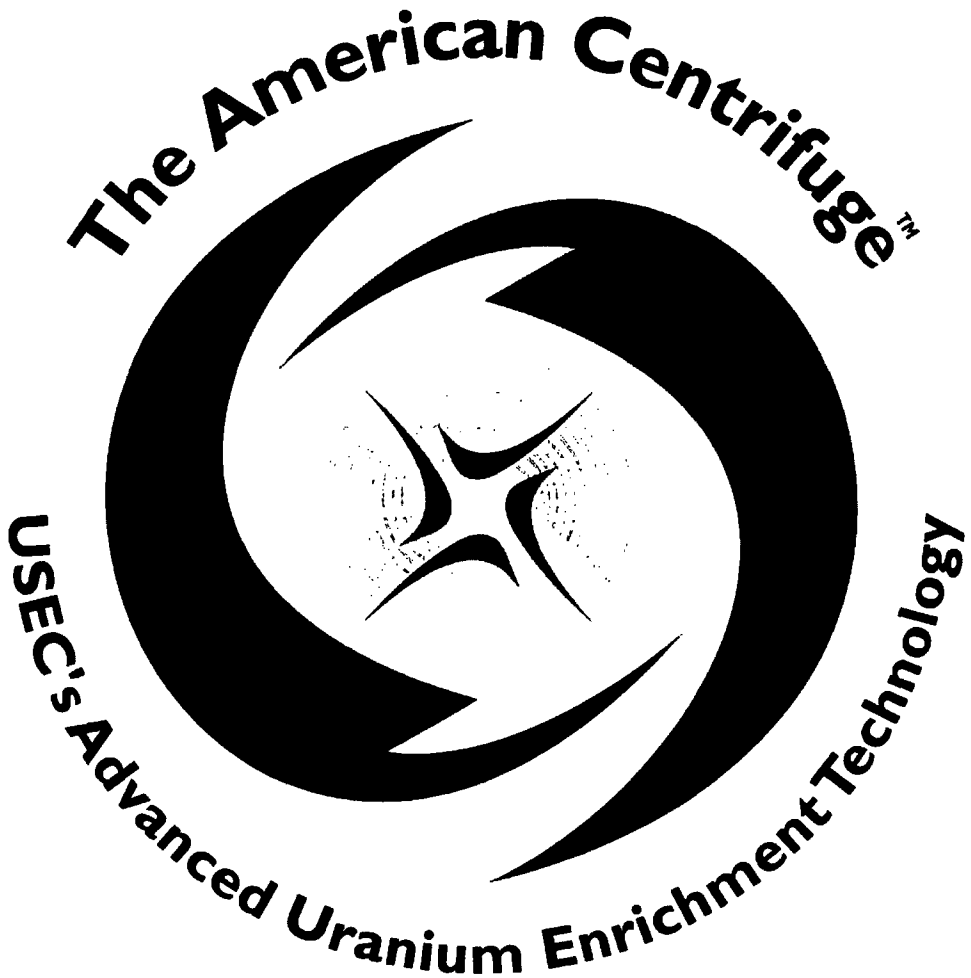
NR-2605-0004

USEC
A Global Energy Company

Decommissioning Funding Plan

American Centrifuge Lead Cascade Facility

in Piketon, Ohio



Proposed Change~~Revision 11~~

Information Contained Within Does Not Contain Export Controlled Information **Reviewer:** R.S. Lykowski **Date:** 01/27/2011

NR-2605-0004

DECOMMISSIONING FUNDING PLAN FOR THE AMERICAN CENTRIFUGE LEAD CASCADE FACILITY in Piketon, Ohio

Docket No. 70-7003

~~Revision 11~~Proposed Change

Updated List of Effective Pages

Page	Revision/ Change Letter	Page	Revision/ Change Letter
Cover	11	A-3	11
Inside Cover	11	A-4	10
i	11	A-5	10
ii	10	A-6	10
1	10	A-7	10
2	10	A-8	10
3	10	A-9	10
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5	10	B-1	10
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9	10	B-5	10
10	10	B-6	10
11	7	B-7	10
12	10	B-8	10
A-1	10	C-1	10
A-2	10	C-2	10

Change Package A 10 CFR 1045 review and approval completed by LMS, DOE-ORO on 08/29/03 and 10/24/03.

Revision 1 – 10 CFR 1045 review and approval completed on 06/29/05.

Revision 2 – 10 CFR 1045 review and approval completed on 11/30/05.

Revision 3 – 10 CFR 1045 review and approval completed on 2/27/06.

Revision 4 – 10 CFR 1045 review and Approval completed on 3/20/06.

Revision 5 – 10 CFR 1045 review and Approval completed on 7/13/06.

Revision 6 – 10 CFR 1045 review and Approval completed on 1/14/09.

Revision 7 – 10 CFR 1045 review and Approval completed on 1/27/09.

Revision 8 – 10 CFR 1045 review and Approval completed on 5/15/09.

Revision 9 – 10 CFR 1045 review and Approval completed on 7/8/09.

Revision 10 – 10 CFR 1045 review and Approval completed on 4/5/10.

Revision 11 – 10 CFR 1045 review and Approval completed on 10/14/10.

Proposed Change – 10 CFR 1045 review and Approval completed on 01/27/11.

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Tables

~~Appendices~~

1.0 INTRODUCTION

The Licensee hereby submits, pursuant to the provisions of the *Atomic Energy Act* of 1954, as amended, and the rules and regulations of the U.S. Nuclear Regulatory Commission (NRC), its Decommissioning Funding Plan (DFP ~~or Plan~~) for the American Centrifuge Lead Cascade Facility (hereafter referred to as the Lead Cascade) at the **U.S. Department of Energy (DOE)** Portsmouth Gaseous Diffusion Plant (PORTS) **reservation**. This DFP sets forth that information required by 10 *Code of Federal Regulations* (CFR) Part 70 regarding the Applicant's plans for funding the ultimate decommissioning of the Lead Cascade.

As indicated below, the Licensee presently intends to provide for decommissioning funding through a surety bond and/or letter of credit in accordance with applicable requirements of 10 CFR Part 70. Appropriate model documentation for these funding methods is attached hereto. Upon acceptance of this funding estimate execution of the revised funding instrument(s), will be developed and the Licensee will supplement this portion of its application.

2.0 GENERAL INFORMATION

Facility Description: USEC is a global energy company and a leading supplier of enriched uranium utilized for reactor fuel for commercial nuclear power plants. USEC signed an Agreement with the ~~U.S. Department of Energy (~~DOE~~)~~ on June 17, 2002, in which it agreed to submit a license application for the Lead Cascade to support deployment of new, cost-effective advanced enrichment technology in the United States using gas centrifuges. The Lead Cascade is to be located in areas leased from the DOE at PORTS.[1]

Licensed Material: The License Application for the Lead Cascade supports authorization to operate the facility to recycle UF_6 through centrifuge machines as documented in Materials License SNM-7003. Uranium enriched in the ^{235}U isotope up to the certified limit of PORTS (10 weight percent ^{235}U) will be recombined with material depleted in the ^{235}U isotope. No enriched product will be removed from the cascade, except for samples. As currently envisioned the facility will have up to ~~76~~ **122** operating centrifuge machines in the Lead Cascade. Pursuant to 10 CFR 70.25(a), a DFP is required. For DFP funding purposes, the decommissioning estimate will be based on the planned ~~76~~**122** machines, plus an additional ~~24~~**8** machines to account for potential contingencies, for a total of 1**3**~~0~~0 centrifuge machines to be decommissioned.

Schedule: The projected operational date for the Lead Cascade is July 2006.

[1] Details regarding the planned operations of the Lead Cascade may be found in the License Application and the accompanying Environmental Report.

Period of Operation: USEC has operated the Lead Cascade since June 6, 2007. Materials License SNM-7003 provides the expiration date for the license.

Decommissioning Costs: The Licensee has prepared a revised site-specific decommissioning cost estimate for the ultimate decommissioning of the Lead Cascade for de-leasing and return to DOE. This cost estimate utilizes current information regarding the activities and associated costs of decommissioning. The estimate and associated funding mechanisms will be adjusted over time, in accordance with the applicable provisions of 10 CFR Part 70.

Decommissioning Funding: As set forth in this ~~Plan~~**DFP**, the Licensee presently intends to utilize a surety bond and/or letter of credit to provide reasonable assurance of the availability of decommissioning funds when needed. These funding mechanisms are intended to satisfy the provisions of 10 CFR Part 70 with respect to decommissioning financial assurance for license applicants under those provisions.

3.0 DECOMMISSIONING COST ESTIMATE

Pursuant to 10 CFR 70.25(e) and the guidance provided by the NRC in ~~Appendix F of~~ NUREG-17~~2~~57, ***Consolidated*** ~~*NMSS Decommissioning Standard Review Plan*~~***Guidance***, the Licensee has evaluated the estimated costs of decommissioning the Lead Cascade. The facility will be decommissioned such that the facilities may be de-leased and returned to the DOE. The estimated costs of decommissioning, patterned after ~~Section 3.~~**NRC guidance in** ~~1 of~~ Appendix ~~F~~**A** of NUREG-17~~2~~57, **Volume 3, *Consolidated* NMSS *Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness*, Final Report, September 2003** is set forth in the tables **contained in Appendix C and D of this DFP and noted** below. **(Note: To maintain consistent table sequence numbers with those presented in Appendix A of NUREG-1757**~~These~~**, Tables 3.1 through 3.3 are not used):** ~~tables provide the following:~~

- Facility Description **Summary** (Table **C**3-~~1~~**.4 and Table C3.4A**)
- ~~Descriptions of facility buildings and grounds that will require decontamination (including n~~**N**umber and ~~d~~**D**imensions of **Facility Components**~~areas)~~ (Table **C**3.~~-2~~**5 and Table C3.5A)**
- ~~Number and types of components that will require decontamination~~ **Planning and Preparation** (Table **C**3.~~-3~~**6**)
- ~~Potential quantities of materials or waste requiring disposition~~ **Decontamination or Dismantling of Radioactive Facility Components** (Table **C**3.~~-3~~**7**)
- **Restoration of Contaminated Areas on Facility Grounds (Table C3.8)**
- **Final Radiation Survey (Table C3.9)**
- **Site Stabilization and Long-term Surveillance (Table C3.10)**
- **Total Work Days by Labor Category (Table C3.11)**
- **Worker Unit** ~~Labor c~~**C**ost **Schedule**~~s~~ (Tables **D**3.~~-4~~**12** ~~through 3-6~~)
- **Total Labor Costs by Major Decommissioning Task (Table D3.13)**
- **Packaging, Shipping, and Disposal of Radioactive Wastes (Table C3.14)**
- **Equipment/Supply** ~~Non-labor c~~**C**osts (Table **C**3.~~-7~~**15**)
- Laboratory Costs (Table **C**3.**16**~~-8~~)
- Miscellaneous ~~c~~**C**osts (Table **C**3-~~9~~**.17**)
- Total Decommissioning Costs (Table **C**3-.~~10~~**8**)

- **Total Labor Distribution (Table C3.19)**

Currently, the Licensee does not have an estimate of potential levels of contamination at the time of decommissioning. Chapter 10.0 of the License Application for the American Centrifuge Lead Cascade Facility describes specific features that serve to minimize the level and spread of radioactive contamination during operation that simplify the eventual facility decommissioning and minimize worker exposure. The total estimated cost of decommissioning the facility in 20~~09~~11 dollars is $~~8.49~~.55 million (see Table C3.-1~~80~~).

Key assumptions used in the decommissioning cost estimate are as follows:

- Details of planned surveys to be taken and decontamination efforts
- Release criteria to be used for the licensed material
- Information on facility building and grounds, dimensions, type, and number of components that will require decontamination

- Costs for labor and non-labor
- Levels of effort for decontamination activities; and volumes and types of wastes generated
- Decommissioning Cost Estimate ~~(DCE)~~ unit quantities were developed based on actual USEC Gas Centrifuge Enrichment Plant (GCEP) Cleanout data. Costing of unit quantities used industry standard costs escalated to 20~~09~~**11** dollars, and 20~~09~~**11** estimated costs for services and materials, resulting in a **Decommissioning Cost Estimate** ~~DCE~~ that reflects independent third-party costs to perform Lead Cascade decommissioning activities.

There are no decommissioning costs associated with disposition of UF_6 since the Licensee intends to utilize this material in future enrichment operations.

Finally, the Licensee recognizes the need to adjust cost estimates and funding levels periodically, pursuant to 10 CFR 70.25(e). These measures are ~~described below~~**in Section 5.0 of this DFP**. The Licensee also recognizes that, pursuant to 10 CFR 70.38(g)(4)(v), it must update its detailed cost estimate at the time of license termination and provide, if necessary, additional assurance of the availability of adequate funds for completion of decommissioning.

~~**Table 3-1**~~
~~**Facility Description**~~

~~**NRC License Numbers and Types (i.e., Part 30, 40, 70, or 72)**~~ ~~- 10 CFR Part 70 - To possess and use special nuclear, source, and by-product material~~
~~**Types and Quantities of Materials Authorized Under the Licenses Listed Above.**~~ ~~- 250 kg UF_6 (Uranium Hexafluoride)~~
~~**Description of How Licensed Materials Are Used.**~~ ~~- Support of the test facility (Lead Cascade); cascade will be on 'Recycle' where the enriched stream is recombined with the depleted stream; no enriched product will be withdrawn, except for laboratory samples necessary to confirm the machine's enrichment performance.~~
~~**Description of Facility, Including Buildings, Rooms, Grounds, and Description of Where Particular Types of Materials Are Used.**~~ ~~X-7726 Centrifuge Training and Test Facility - Area where material and components are received, components or subassemblies are inspected or tested, and centrifuge machines are assembled.~~ ~~X-7725 Recycle/Assembly Building - Small area of a larger, multiple level building to allow the temporary storage or movement of completed centrifuge machines from X-7726 to the X-7727H Transfer Corridor. The X-7725 Buffer Storage Area may also be used for storage, handling, and assembly preparation activities of centrifuge components. An area in the X-7725 R/A, 3rd level between column lines C3 and C8 will be used for centrifuge component handling and storage.~~ ~~X-7727H Transfer Corridor - Area that provides an enclosed throughway from the X-7725 to the X-3001 Process Building #1 (Lead Cascade).~~

~~X-3001 Process Building #1 - Area that houses the Lead Cascade. The Lead Cascade is supplied normal UF6 feed material from a cylinder located on a portable cart, also located in this area.~~

~~X-3012 Process Support Building - Area that houses the Area Control Room, maintenance shops and stores, and other support areas.~~

~~**Quantities of Materials or Waste Accumulated Before Shipping or Disposal.**~~

~~See table 3-3~~

Table 3-2
Number and Dimensions of Facility Components

Facility	Description	Dimension (ft^2)
X-3001	Process Building; General	307,793
X-3001[1]	Process Building; Train 3 Specific; and proposed Decontamination Service Area	45,000
X-3012	Process Support Building	49,604
X-7725[2,3]	Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas	93,030
X-7726	Centrifuge Training and Test Facility	28,066
X-7727H	Transfer Corridor	33,096
Total	Facilities (Area)	556,589

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^2 and proposed DSA (Train 6) = 19,500 ft^2 = Total approximately 45,000 ft^2
Note 2: Area includes Buffer Storage, passageway, centrifuge staging, transfer corridor, maintenance and battery charging area = 64,946 ft^2
Note 3: Area includes container wash and container dry areas = 28,084 ft^2

~~Table 3-3~~
~~Quantities of Materials or Waste Accumulated Before Shipping or Disposal~~

~~Category~~	~~Description~~	~~Estimated Quantity~~
~~Centrifuges[2]~~	~~Casings, Rotor Assemblies, Motors, Suspensions, Mounts~~	~~100~~
~~Piping~~	~~Up to 1 in. Process Piping length (ft)~~	~~30,000~~
	~~1-4 in. Process Piping length (ft)~~	~~2,250~~
~~Pumps~~	~~Evacuation Vacuum Pumps~~	~~2~~
	~~Purge Vacuum Pumps~~	~~4~~
~~Ventilation~~	~~Ductwork length (ft) [3x4]~~	~~600~~
~~Building Surfaces[1]~~	~~Floors (ft^2) [Note 1]~~	~~45,000~~
~~Valves[3]~~	~~Process Valves (Sets)~~	~~122~~
	~~Miscellaneous Valves~~	~~524~~
~~Traps~~	~~Chemical Traps~~	~~4~~
~~Other Equipment~~	~~UF_6 Portable Carts~~	~~4~~
~~Decontamination Service Area~~	~~Centrifuge Transporter~~	~~1~~
	~~Centrifuge Manipulator~~	~~2~~
	~~Centrifuge Dismantling Equipment~~	~~4~~
	~~Cutting Machines~~	~~2~~
	~~Degreasers~~	~~2~~
	~~Decontamination Tanks~~	~~3~~
	~~Wet Blast Cabinets~~	~~1~~
	~~Crusher~~	~~1~~

~~Note 1: Amount of wall ft^2 not given because it is not anticipated to need decontamination at the time of decommissioning. The floor space listed consists of the X-3001 cascade.~~
~~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 scavenged. Miscellaneous valves are an actual physical count (not estimate).~~

Table 3-4
Total Work Days by Labor Category

Task	Labor Category Supervision Salary	Labor Category Engineering Salary	Labor Category Operations Salary	Labor Category Operations Hourly	Labor Category Maintenance Salary	Labor Category Maintenance Hourly	Labor Category Plt/Prod Support Salary	Labor Category Plt/Prod Support Hourly	Total Labor
Planning and Preparation	34	275			138		138	34	619
Decontamination &/or Dismantling of Radioactive Facility Components		152		101	202	1,213	303	51	2022
Restoration of Contaminated Areas of Facility Grounds			65	130					195
Final Radiation Survey							130		130
Site Stabiliazation and Long-Term Surveillance									0
Total by Category	34	427	65	231	340	1,213	571	85	2966

Assumptions:
Anticipated overall duration = 6 months
Labor level of effort and skill-set mix based on previous USEC GCEP Cleanout efforts
All cranes, platforms, fencing is in place

Table 3-5
Worker Unit Cost Schedule

This Table is withheld pursuant to 10 CFR 2.390 and is located in Appendix C of this Plan

Table 3-6
Total Labor Costs by Major Decommissioning Task

This Table is withheld pursuant to 10 CFR 2.390 and is located in Appendix C of this Plan

Table 3-7
Packaging, Shipping, and Disposal of Radioactive Wastes
(Excluding Labor Costs)

Waste Type	[A] Disposal Volume (m^3)	[B] Number of Containers	Type of Container	[C] Unit Cost ($/$m^3$)	[D] Surcharges ($/container)	[E] Total Disposal Costs
Machine - Internals	270	100	B-25 Box	$ 1,161.60	$ 2,800.00	$ 593,632.00
Machine - Casings	270	100	B-25 Box	$ 1,161.60	$ 2,800.00	$ 593,632.00
Total	540	200	B-25 Box	$ 1,161.60	$ 2,800.00	$ 1,187,264.00

Disposal Path is Energy Solutions Clive, UT

Assumptions:
Based on previous USEC GCEP Cleanout efforts
~80 Centrifuge Machines anticipated, Disposal Cost estimate based on 100 Centrifuge Machines
1 Centrifuge Machine/2 B-25 Boxes; (1: internals; 2: casing)
1 B-25 Box = 96 ft^3 = 2.7 m^3
\$32.67/ft^3 (\$CY09 disposal and transportation cost); \$1,161.60/m^3
Surcharge includes Cost of B-25 Boxes + Radiological Assessment + Transportation Fees
E=B((AC)+D)

Table 3-8
Laboratory Costs

Phase	Activity	# Workers	# Yr	Routine Freq (Samples/y)	Recall Freq (Samples/y)	Incident Freq (Samples/y)	Sample Factor	Unit Cost ($)	Total Cost
1	Planning & Preparation	9	0.314	4	0.2	2	6.2	115	$ 2,015
2	Decontamination or Dismantling	40	0.231	12	0.6	6	18.6	115	$ 19,764
3	Restoration of Contaminated Areas	3	0.297	12	0.6	4	16.6	115	$ 1,701
4	Final Radiation Survey	3	0.198	12	0.6	4	16.6	115	$ 1,134
5	Long Term Surveillance	0	0.000	4	0.2	2	6.2	115	———
TOTALS		55							$ 24,614

Assumptions:
- The utilization of the 'On-Site' laboratory facility is anticipated; therefore, there are no associated transportation costs included in the derivation of the Unit Cost. On-Site laboratory facility is open for use by third-party contractors.
- Routine Frequency is the anticipated number of samples per individual per year (see Table 4.7-3 of the ACP License Application).
- Recall Frequency assumes 5% recall rate; Recall = an individual sample submitted when analysis results exceed a predetermined urinalysis program action level (see Table 4.7-3 of the ACP License Application).
- Incident Frequency assumes 2 samples submitted for each incident; Incident = a special sample submitted for analysis due to an incident (for example, a personnel contamination event or an airborne release of radioactive material event occurs).
- Sample Factor = Routine freq % + Recall % + Incident %; Total Cost = (# workers/phase) * (# yr) * Sample Factor * Unit Cost
- # samples = (# workers/phase) * (Routine freq % + Recall % + Incident %) * # yr
- Analytical Unit Cost = \$115 / sample [Amount based for uranium isotopic analysis by alpha spectrometry and includes analysis performance, labor, and

~~cost of materials plus overheads](\$CY09). Unit costs for laboratory work currently fixed for CY08 and CY09.~~

~~Table 3-9~~
~~Miscellaneous Costs~~

~~Cost Item~~	~~Total Cost~~
~~NRC Staff Review & Approval DFP~~	~~$ 80,000~~
~~NRC Fees~~	~~$256,875~~
~~DOE Lease~~	~~$442,312~~
~~Business Insurance~~	~~-~~
~~Taxes~~	~~$121,707~~
~~Miscellaneous Material for DeCon[1]~~	~~$ 70,000~~
~~Total~~	~~$970,894~~

~~Note 1: Estimate based upon percentage of Decommissioning Cost subtotal (1.5% * Total Other Costs) (values from Table 3-10)~~

Table 3-10
Total Decommissioning Costs

Task	Calculated Costs	Percentage
Planning and Preparation	$ 298,079	5%
Decontamination and/or Dismantling of Radioactive Facility Components	$ 651,281	11%
Restoration of Contaminated Areas of Facility Grounds	$ 57,461	1%
Final Radiation Survey	$ 52,857	1%
Site Stabilization and Long-Term Surveillance	$ 0	0%
Indirect Services	$ 2,515,405	44%
Packing Materials, Shipping, and Waste Disposal Costs	$ 1,187,264	21%
Laboratory Costs	$ 24,614	0%
Miscellaneous Costs	$ 970,894	17%
Subtotal[1]	$ 5,757,855	100%
General & Administrative (6%)[2]	$ 345,471	
Contractor Profit (15%)[3]	$ 685,977	
Contingency (25%)[4]	$ 1,697,326	
Total Decommissioning Cost Estimate	$ 8,486,629	

$CY 2009

Note 1: Subtotal includes labor/materials/overhead allocations costs.

Note 2: General & Administrative (G&A) cost assumed to be 6% based upon current company experience and is representative of general industry practice.

Note 3: Contractor Profit assumed to be 15% on the subtotal plus G&A minus indirect costs (Administrative fees [Table 3-9 – NRC Staff Review & Approval Cost] and Waste Disposal costs [Table 3-8 – Waste Cost = ACB* (Internals + Casings)]; ACB = Disposal Volume * Unit Cost * Number of Containers

Note 4: Contingency assumed to be 25% on subtotal plus G&A and contractor profit.

4.0 DECOMMISSIONING FUNDING MECHANISM

The Licensee presently intends to utilize a surety bond and/or letter of credit to provide reasonable assurance of decommissioning funding, pursuant to 10 CFR 70.25(f)(2). Accordingly, the Licensee provides with this application model documentation related to the use of the surety method of providing decommissioning financial assurance.[2] Upon 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.

As noted, the Licensee presently intends to utilize a surety bond and/or letter of credit to provide financial assurance for decommissioning. The surety bond and/or letter of credit will provide an ultimate guarantee that decommissioning costs will be paid in the event the Licensee is unable to meet its decommissioning obligations at the time of decommissioning. A copy of a model surety bond and a letter of credit is provided in Appendix A to this ~~plan~~**DFP**. The Licensee describes below the particular attributes it presently anticipates including in these instruments.

With respect to the surety bond and letter of credit, the Licensee presently anticipates providing for the following attributes: First, for the surety bond, a Company that is listed as a qualified surety in the Department of Treasury's most recent edition of Circular 570 for the State where the Surety was signed with an underwriting limitation greater than or equal to the level of coverage specified in the bond will issue the bond. For a letter of credit, a financial institution whose operations are regulated and examined by a Federal or State agency as determined by the Federal Deposit Insurance Company (FDIC) Institution Directory or as determined by the appropriate district office of the Office of the Comptroller of the Currency (OCC) for federal regulation or the applicable State banking authority for state regulation will issue the letter of credit. Second, the bond and letter of credit will be written for a specified term and will be renewable automatically unless the issuer serves notice at least 90 days prior to expiration of intent not to renew. Such notice must be served upon the NRC, the trustee of the external or Standby Trust, and the Licensee. Further, in the event the Licensee is unable to provide an acceptable replacement within 30 days of such notice, the full amount of the bond and the letter of credit will be payable automatically, prior to expiration, without proof of forfeiture.

The surety bond and letter of credit will require that the financial institution will deposit any funds paid under its terms directly into a standby trust fund. A copy of a model Standby Trust is provided as Appendix B to this ~~plan~~**DFP**.

5.0 ADJUSTING DECOMMISSIONING COSTS AND FUNDING

Pursuant to 10 CFR 70.25(e), the Licensee will update the decommissioning cost estimate for the Lead Cascade and the funding levels over the life of the facility. The cost estimate will be adjusted periodically and no less frequent than every three years consistent with

[2] The model documentation is derived from NRC guidance in NUREG-1757, Volume 3, Consolidated NMSS Decommissioning Guidance, *Financial Assistance, Recordkeeping, and Timeliness*, dated September 2003. The Licensee will consider this model documentation as guidance in preparing and executing funding instruments for the Lead Cascade. In the event the Licensee ultimately selects another form of decommissioning funding, model documentation from NUREG-1757 will also be used as guidance in the preparation of funding instruments.

the requirements 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, 2003**~~67 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)
  - 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.

7.0 REFERENCES

1. Federal Register, Volume 68 Number 192, *Financial Assurance for Materials Licensees*, Final Rule, October 3, 2003

2. LA-2605-0001, License Application for the American Centrifuge Lead Cascade Facility

3. NUREG-1757, Volume 3, Consolidated NMSS Decommissioning Guidance, *Financial Assistance, Recordkeeping, and Timeliness*, dated September 2003

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Appendix A

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

MODEL SURETY BOND

PAYMENT SURETY BOND

Date bond executed: _____

Effective date: _____

Principal: [Insert legal name and business address of licensee]

Type of organization: [Insert "proprietorship," "partnership," or "corporation"]

State of incorporation: _____ (if applicable)

NRC license number, name and address of facility, and amount for decommissioning activities guaranteed by this bond: _____

Docket Number: _____

Surety: [Insert name and business address]

Type of organization: [Insert "proprietorship," "partnership," or "corporation"]

State of incorporation: _____ (if applicable)

Surety's qualification in jurisdiction where licensed facility is located.

Surety's bond number: _____

Total penal sum of bond: $ _____

Know all persons by these presents, that we, the Principal and Surety hereto, are firmly bound to the U.S. Nuclear Regulatory Commission (hereinafter 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 U.S. Nuclear Regulatory Commission, 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 [insert 30, 40, 70, or 72], applicable to the Principal, which require that a license holder or an applicant for a facility license provide financial assurance that funds will be available when needed for facility 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 NRC or a U.S. District Court or other court of competent jurisdiction;

Or, if the Principal shall provide alternative financial assurance, and obtain NRC's written approval of such assurance, within 30 days after the date a notice of cancellation from the Surety 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 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 shall place funds in the amount guaranteed for the facility into the standby trust fund.

The liability of the Surety 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 hereunder exceed the amount of said penal sum.

The Surety 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 the Surety 90 days prior to the proposed date of termination, provided, however, that no such notice shall become effective until the Surety receives written authorization for termination of the bond from the NRC.

No decrease in the penal sum takes place without the written permission of the NRC.

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

In Witness Whereof, the Principal and Surety *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.

Principal

[Signatures]

[Names]

[Titles]

[Corporate seal]

Corporate Surety

[Name and address]

State of incorporation: _____

Liability limit: $ _____

[Signatures]

[Names and titles]

[Corporate seal]

[For every co-surety, provide signatures, names and titles, corporate seal, and other information in the same manner as for the Sureties above.]

Bond Premium: $ _____

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 [*insert name, address, and NRC license and docket numbers of licensee*] 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 [*insert 30, 40, or 70*], which require that a holder of, or an applicant for, a materials license issued under 10 CFR Part [*insert 30, 40, or 70*] 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 [*insert name of licensee*], by certified mail, as shown on the signed return receipts, or FedEx Express. If [*insert name of licensee*] 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.

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 [*insert name of licensee*] 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"*].

MODEL SPECIMEN CERTIFICATE OF EVENTS

[*Insert name and address of trustee*]

Attention: Trust Division

Gentlemen:

In Accordance with the terms of the agreement with you~~r~~ date**d**~~s~~ _____ , I, _____ _____, **Secretary of** [*insert name of licensee*], hereby certify that the following events have occurred:

1. [*Insert name of licensee*] is required to commence the decommissioning of its facility located at [*insert location of facility*] (hereinafter called the decommissioning).

2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ _____ (copy of approval attached).

3. The board of Directors of [*insert name of licensee*] has adopted the attached resolution authorizing the commencement of decommissioning.

_____
Secretary **of** [*insert name of licensee*]

_____
Date

MODEL SPECIMEN CERTIFICATE OF RESOLUTION

I, _____ , **do hereby certify that I am** ~~DO HEREBY CERTIFY THAT I AM~~ Secretary of [*insert name of licensee*], a [*insert State of incorporation*] corporation, and that the resolution listed below was duly adopted at a meeting of this Corporation's Board of Directors on _____ , 20___.

IN WITNESS WHEREOF, I have hereunto signed my name and affixed the seal of this Corporation this day of , 20 .

_____
Secretary

RESOLVED, that this Board of Directors hereby authorized the President, or such other employee of the Company as he may designate, to commence decommissioning activities at [*insert name of facility*] in accordance with the terms and conditions described to this Board of Directors at this meeting and with such other terms and conditions as the President shall approve with and upon the advice of Counsel.

MODEL LETTER OF ACKNOWLEDGEMENT

STATE OF: _____

To Wit: _____

CITY OF: _____

On this _____ day of _____, before me, a notary public in and for the city and State aforesaid, personally appeared _____, and she/he did depose and say that she/he is the [*insert title*] **of** _____ [*if applicable, insert ", national banking association" or ", State banking association"*], Trustee, which executed the above instrument; that she/he knows the seal of said association; that the seal affixed to such instrument is such corporate seal; that it ~~is~~ **was** so affixed by order of the association; and that -she/he signed her/his name thereto by like order.

_____
[*Signature of notary public*]

My Commission Expires: _____
[*Date*]

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Appendix B

Model Standby Trust Agreement

STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of [insert date] by and between [insert name of licensee], a [insert name of State] [insert "corporation," "partnership," or "proprietorship"], herein referred to as the "Grantor," and [insert name and address of a trustee acceptable to NRC], 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 [insert 30, 40, **or** 70, ~~or 72~~]. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a materials license issued pursuant to 10 CFR Part [insert 30, 40, **or** 70, ~~or 72~~] provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a [insert "letter of credit," "surety bond," "insurance policy," "parent company guarantee," or "self-guarantee"] to provide [insert "all" or "part"] of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a [insert "letter of credit," "surety bond," "insurance policy," "parent company guarantee," or "self-guarantee"], 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.

Section 2. Costs of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number [insert license number] issued pursuant to 10 CFR Part [insert 30, 40, 70, or 72], as shown in Schedule A.

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 shall 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 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 the NRC has been given 30 days prior notice of [insert name of licensee]'s intent to withdraw funds from the trust 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 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 amounts 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 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. ~~80~~**80**a-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, 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.

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 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 ~~or Federal~~ 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.

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 instructions 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. All amendments shall meet the relevant regulatory requirements of the NRC.

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 State of [insert name of State].

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.

[Insert name of licensee (Grantor)]
[Signature of representative of Grantor]
[Title]

ATTEST:
[Title]
[Seal]

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

ATTEST:
[Title]
[Seal]

MODEL 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 **NUMBER(S)**	NAME AND ADDRESS OF **LICENSEE**	ADDRESS OF LICENSED **ACTIVITY**	COST ESTIMATES FOR REGULATORY ASSURANCES DEMONSTRATED BY **THIS AGREEMENT**

The cost estimates listed here were last adjusted and approved by the NRC on [insert date].

Schedule B

DOLLAR AMOUNT _____

AS EVIDENCED BY _____

Schedule C

[Insert name, address, and phone number of Trustee]

Trustee's fees shall be $ _____ per year.

~~Name and address of Trustee:~~

~~Phone number of Trustee:~~

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Appendix C

Decommissioning Cost Estimate Tables

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Table C3.4-1 Facility Description Summary

NRC License Numbers and Types (i.e., Parts 30, 40, 70, or 72) - 10 CFR Part 70 - To possess and use special nuclear, source, and by-product materials.
Types and Quantities of Materials Authorized Under the Licenses Listed Above. - 250 kg UF_6 (Uranium Hexafluoride)
Description of How Licensed Materials Are Used. - Support of the test facility (Lead Cascade); cascade will be on 'Recycle' operations, where the enriched stream is recombined with the depleted stream; no enriched product will be withdrawn, except for laboratory samples necessary to confirm the machine's enrichment performance.
Description of Facility, Including Buildings, Rooms, Grounds, and Description of Where Particular Types of Materials Are Used. X-7726 Centrifuge Training and Test Facility (CTTF) – The CTTF is the Aarea where material and components are received,; components or subassemblies are inspected or and tested,; the components are assembled as and centrifuge machines; are assembled. the final assembly is evacuated and leak checked; and repairs are performed to the machine or subassemblies. X-7725 Recycle/Assembly (R/A) Building - Small area of a larger, multiple level building to allow the temporary storage or movement of completed centrifuge machines from the X-7726 facility to the X-7727H Interplant Transfer Corridor. The X-7725 Buffer Storage Area may also be used for storage, handling, and assembly preparation activities of centrifuge components. An area in the X-7725 R/A, 3rd level storage area between column lines C3 and C8 will be used for centrifuge component handling and storage. Areas of the X-7725 will be used for shipping, receiving, and storage of materials. X-7727H Interplant Transfer Corridor - Area that provides an enclosed throughway from the X-7725 building or X-7726 facility to the X-3001 Process Building #1 (Lead Cascade Area). X-3001 Process Building #1 - Area that houses the Lead Cascade. The Lead Cascade is supplied normal UF_6 feed material from a cylinder located on a portable cart, also located in this area. X-3012 Process Support Building - Area that houses the Area Control Room, maintenance shops and stores, and other support areas.
Quantities of Materials or Waste Accumulated Before Shipping or Disposal. - See tTable C3-3.4A

Table C3.4(A) Quantities of Materials or Waste Accumulated Before Shipping or Disposal

Category	Description	Estimated Quantity
Centrifuges ~~[2]~~ [1]	Casings, Rotor Assemblies, Motors, Suspensions, and Mounts	~~100~~ 130
Piping	~~Up to~~Less than 1 in. Process Piping length (Lft) and Includes Tubing [3]	~~30,000~~ 39,000
	1-4 in. Process Piping length (Lft)	~~2,250~~ 2,925
Pumps	Evacuation Vacuum Pumps	2
	Purge Vacuum Pumps	4
Ventilation Ductwork	Ductwork length (ft) [~~3x44~~'x3']	600
Building Surfaces ~~[2]~~ [2]	Floors (ft^2) ~~[Note 1]~~	45,000
Valves [3]	Process Valves (~~S~~sets)	~~122~~ 130
	Miscellaneous Valves	524
Traps	Chemical Traps (1 set of 4)	4
Other Equipment	UF_6 Portable Carts, Buffer Storage Stands, Mass Spectrometers, Mass Spectrometer Enclosure and Vent Monitor Traps	16 ~~4~~
Decontamination ~~Service Area~~Equipment	Centrifuge Transporter	1
	Centrifuge ~~Manipulator~~Disassembly Stands	2
	Centrifuge Dismantling Equipment	4
	Cutting Machines	2
	Degreasers	2
	Decontamination Tanks	3
	Wet Blast Cabinets	1
	~~Crusher~~	~~1~~

~~Note [1]:~~ The current project quantity consists of 122 centrifuge machines plus 8 contingency centrifuge machines for a grand total of 130 centrifuge machines, which is less than the original estimate of 240 centrifuge machines. ~~Amount of wall ft² not given because it is not anticipated to need decontamination at the time of decommissioning. The floor space listed consists of the X-3001 cascade.~~

~~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.~~ The floor space listed is contained within the X-3001 Train 3 cascade area. The amount of wall area (ft^2) is not provided because it is not anticipated to need decontamination at the time of decommissioning.

~~Note [3]:~~ Process Valve sets follow the ~~greater than~~ estimated number of machines ~~due to~~ constructed. ~~LC2, but has been partially scavenged.~~ Miscellaneous ~~v~~Valves are an actual physical count (not estimate).

Facility	Description	Dimension (ft^2)
X-3001	Process Building; General	307,793
X-3001[1]	Process Building; Train 3 Specific; and proposed Decontamination Service Area	45,000
X-3012	Process Support Building	49,604
X-7725[2,3]	Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas	93,030
X-7726	Centrifuge Training and Test Facility	28,066
X-7727H	Transfer Corridor	33,096
Total	Facilities (Area)	556,589

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^2 and proposed DSA (Train 6) = 19,500 ft^2 = Total approximately 45,000 ft^2
Note 2: Area includes Buffer Storage, passageway, centrifuge staging, transfer corridor, maintenance and battery charging area = 64,946 ft^2
Note 3: Area includes container wash and container dry areas = 28,084 ft^2

Table 3-2
Number and Dimensions of Facility Components

Facility	Description	Dimension (ft^2)
X-3001	Process Building; General	307,793
X-3001[1]	Process Building; Train 3 Specific; and proposed Decontamination Service Area	45,000
X-3012	Process Support Building	49,604

~~X-7725[2,3]~~	~~Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas~~	~~93,030~~
~~X-7726~~	~~Centrifuge Training and Test Facility~~	~~28,066~~
~~X-7727H~~	~~Transfer Corridor~~	~~33,096~~
~~Total~~	~~Facilities (Area)~~	~~556,589~~

~~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 ft² and proposed DSA (Train 6) = 19,500 ft² = Total approximately 45,000 ft²~~

~~Note 2: Area includes Buffer Storage, passageway, centrifuge staging, transfer corridor, maintenance and battery charging area = 64,946 ft²~~

~~Note 3: Area includes container wash and container dry areas = 28,084 ft²~~

Table C3.5 Number and Dimensions of Facility Components (Total Volume)

Component	Number of Components	Dimensions of Component (specify units)	Total Volume (ft^3)	Compacted Factor (Volume Remaining)	Total Compacted Volume (ft^3)	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^3	52	1.0	52	High Alpha
Miscellaneous Valves	524 ea	0.4 ft^3	210	1.0	210	High Alpha
UF_6 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

Table C3.5 Number and Dimensions of Facility Components (Total Volume)

Component	Number of Components	Dimensions of Component (specify units)	Total Volume (ft^3)	Compacted Factor (Volume Remaining)	Total Compacted Volume (ft^3)	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	0	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, 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 items.
- Highlighted rows represent ventilation ductwork (HVP system).

~~Table 3-3~~
~~Quantities of Materials or Waste Accumulated Before Shipping or Disposal~~

~~Category~~	~~Description~~	~~Estimated Quantity~~
~~Centrifuges[2]~~	~~Casings, Rotor Assemblies, Motors, Suspensions, Mounts~~	~~100~~
~~Piping~~	~~Up to 1 in. Process Piping length (ft)~~	~~30,000~~
	~~1-4 in. Process Piping length (ft)~~	~~2,250~~
~~Pumps~~	~~Evacuation Vacuum Pumps~~	~~2~~
	~~Purge Vacuum Pumps~~	~~4~~
~~Ventilation~~	~~Ductwork length (ft) [3x4]~~	~~600~~
~~Building Surfaces[1]~~	~~Floors (ft^2) [Note 1]~~	~~45,000~~
~~Valves[2]~~	~~Process Valves (Sets)~~	~~122~~
	~~Miscellaneous Valves~~	~~524~~
~~Traps~~	~~Chemical Traps~~	~~4~~
~~Other Equipment~~	~~UF_6 Portable Carts~~	~~4~~
~~Decontamination Service Area~~	~~Centrifuge Transporter~~	~~1~~
	~~Centrifuge Manipulator~~	~~2~~
	~~Centrifuge Dismantling Equipment~~	~~4~~
	~~Cutting Machines~~	~~2~~

	~~Degreasers~~	~~2~~
	~~Decontamination Tanks~~	~~3~~
	~~Wet Blast Cabinets~~	~~1~~
	~~Crusher~~	~~1~~

~~Note 1: Amount of wall ft^2 not given because it is not anticipated to need decontamination at the time of decommissioning. The floor space listed consists of the X-3001 cascade.~~
~~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 scavenged. 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) [1]	Total Area (ft^2) [1]	Level of Contamination
X-3001		416' x 730'		
Floor (entire building footprint)	1 Building	303,680 ft^2	[redacted]	
Floors [1] (PB Train 3 area)	1 Building	25,260 ft^2	25,260	Low Alpha
Floors [1] (PB Train 6 proposed Decontamination Service Area)	1 Building	19,740 ft^2	19,740	Low Alpha
X-3012		240' x 201'		
Floor (entire building footprint)	1 Building	48,240 ft^2	[redacted]	
Maintenance Shop	3 (floors only)	100' x 39'	11,700	Low Alpha
Floors (Potential; ~60%) [2]	1 Building	28,950 ft^2	28,950	Low Alpha
X-7725		540' x 820'		
Floor (entire building footprint)	1 Building	442,800 ft^2	[redacted]	
Buffer Storage [2]	1 Area	~208' x 283'	64,946	Low Alpha
South Bldg Floors [3]	1 Area	536' x 272'	28,084	Low Alpha
X-7726		286' x 84'		

COMPONENT	Number of Components	Dimensions of Component /Area (specify units) [1]	Total Area (ft^2) [1]	Level of Contamination
Floor (entire building footprint)	1 Building	24,024 ft^2		
Floors (multiple levels)	1 Building	28,066 ft^2	28,066	Low Alpha
X-7727H		~750' x 30'		
Floors	1 Building	26,078 ft^2	26,078	Low Alpha
Total Area			~~2,494,819~~ 232,824	

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 ft^2 and the proposed DSA (Train 6) **for a Total** = **45,000**~~19,500~~ ft^2. ~~= Total approximately 45,000 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^2.

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

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

~~Facility~~	~~Description~~	~~Dimension (ft^2)~~
~~X-3001~~	~~Process Building; General~~	~~307,793~~
~~X-3001[4]~~	~~Process Building; Train 3 Specific; and proposed Decontamination Service Area~~	~~45,000~~
~~X-3012~~	~~Process Support Building~~	~~49,604~~
~~X-7725[2,3]~~	~~Recycle/Assembly Building; Buffer Storage; Container Wash and Container Dry Areas~~	~~93,030~~
~~X-7726~~	~~Centrifuge Training and Test Facility~~	~~28,066~~
~~X-7727H~~	~~Transfer Corridor~~	~~33,096~~
~~Total~~	~~Facilities (Area)~~	~~556,589~~

Table C3.6 Planning and Preparation
(Productive Work Days)

Group	Type	# Workers	Dur (#y)	~~Prod~~Avail Factor	Total (wd)
Supervision	Exempt	1	34	219	34
Engineering	Exempt	3	92	219	275
Operations	Exempt	0	22	219	0
	Non-Exempt	0	22	219	0
Maintenance	Exempt	2	69	219	138
	Non-Exempt	0	22	219	0
Support	Exempt	2	69	219	138
	Non-Exempt	1	34	219	34
Totals		9			619

Assumptions:
- Anticipated duration = 1-3m or 22-92d
- Availability Factor = average annual work days = 219 md/y = 260 - 41(Paid Absences)

Anticipated tasks considered:
- Develop Project Execution Plan and Schedule (including organization and staffing plan and needed services)
- Develop Decommissioning Plan
- Develop/implement Site Characterization Plan
- Review/approve Site Decommissioning Plan by NRC; Regulatory/License issues
- Develop Decommissioning Activity Procedures
- Design Decommissioning Service Area (DSA)
- Initial Project Support/Organization
- Initial Plant Security

Table C3.7 Decontamination or Dismantling of Radioactive Facility Components (Productive Work Days)

Group	Type	# Workers	Dur (#y)	~~ProdA~~ vail Factor	Total (wd)
Supervision	Exempt	1	110	219	110
Engineering	Exempt	4	42	219	168
Operations	Exempt	2	110	219	220
	Non-Exempt	4	28	219	113
Maintenance	Exempt	4	74	219	294
	Non-Exempt	16	102	219	1,629
Support	Exempt	5	90	219	449
	Non-Exempt	5	11	219	56
Totals		41			3,039

Assumptions:
- Anticipated duration = 5m or 110d
- Availability Factor average annual work days = 219 md/y = 260 - 41(Paid Absences)

Anticipated tasks considered:
- Erect Decontamination Facility (minimal comparative effort)
- Decontamination of facilities - internals
- Dismantle centrifuge machines; waste segregation/staging [46.6 mh/machine]
- Dismantle facilities/components
- Continued Project and Security Support

Table C3.8 Restoration of Contaminated Areas on Facility Grounds (Productive Work Days)

Group	Type	# Workers	Dur (#y)	~~Prod~~Avail Factor	Total (wd)
Supervision	Exempt	0	110	219	0
Engineering	Exempt	0	110	219	0
Operations	Exempt	1	65	219	65
	Non-Exempt	2	65	219	130
Maintenance	Exempt	0	110	219	0
	Non-Exempt	0	110	219	0
Support	Exempt	0	110	219	0
	Non-Exempt	0	110	219	0
Totals		3			195

Assumptions:
- Anticipated duration = 5m or 110d
- Availability Factor average annual work days = 219 md/y = 260 - 41(Paid Absences)
- Shares resource allocation concurrent with Decontamination or Dismantling phase effort
- Minimal loose contamination and cleanup anticipated

Anticipated tasks considered:
- Decontamination of facilities
- Remove fixed contamination

Table C3.9 Final Radiation Survey (Productive Work Days)

Group	Type	# Workers	Dur (#y)	~~Prod~~Avail Factor	Total (wd)
Supervision	Exempt	0	75	219	0
Engineering	Exempt	0	75	219	0
Operations	Exempt	0	75	219	0
	Non-Exempt	0	75	219	0
Maintenance	Exempt	0	75	219	0
	Non-Exempt	0	75	219	0
Support	Exempt	3	44	219	130
	Non-Exempt	0	75	219	0
Totals		3			130

Assumptions:

- Anticipated duration = 3.5m or 75d
- Availability Factor average annual work days = 219 md/y = 260 - 41(Paid Absences)
- Work period occurs concurrent with the last 3.5 months of the D&D phase

Anticipated tasks considered:

- Develop/implement survey plans
- Collect/analyze data
- Perform confirmatory surveys
- Develop final survey report
- Terminate license

Table C3.10 Site Stabilization and Long-Term Surveillance (Productive Work Days)

Group	Type	# Workers	Dur (#y)	~~Prod~~Avail Factor	Total (wd)
Supervision	Exempt	0	130	219	0
Engineering	Exempt	0	130	219	0
Operations	Exempt	0	130	219	0
	Non-Exempt	0	130	219	0
Maintenance	Exempt	0	130	219	0
	Non-Exempt	0	130	219	0
Support	Exempt	0	130	219	0
	Non-Exempt	0	130	219	0
Totals		0			0

Assumptions:

- Anticipated duration = 6m (concurrent with P&P and D&D)
- Availability Factor average annual work days = 219 md/y = 260 - 41(Paid Absences)

Anticipated tasks considered:

- Site stabilization - not required
- Maintain maintenance/surveillances on IROFS equipment necessary until license terminated (~ ½ year); LC has no IROFS surveillance needed while performing D&D

Table C3.-411
Total Work Days by Labor Category

Task	Labor Category Supervision ~~Salary~~(E)	Labor Category Engineering ~~Salary~~(E)	Labor Category Operations ~~Salary~~(E)	Labor Category Operations ~~Hourly~~(N)	Labor Category Maintenance ~~Salary~~(E)	Labor Category Maintenance ~~Hourly~~(N)	Labor Category ~~Plt/Prod~~ Support ~~Salary~~(E)	Labor Category ~~Plt/Prod~~ Support ~~Hourly~~(N)	**Total Labor**
Planning and Preparation	34	275	0	0	138	0	138	34	**619**
Decontamination ~~&~~/or Dismantling of Radioactive Facility Components	110	~~152~~ 168	220	113 ~~101~~	294 ~~202~~	1,629 ~~1,213~~	449 ~~303~~	~~51~~ 56	3,039 ~~2022~~
Restoration of Contaminated Areas of Facility Grounds	0	0	65	130	0	0	0	0	**195**
Final Radiation Survey	0	0	0	0	0	0	130	0	**130**
Site ~~Stabiliazation~~Stabilization and Long-Term Surveillance	0	0	0	0	0	0	0	0	**0**
Total by Category	144 ~~34~~	443 ~~427~~	285 ~~65~~	243 ~~231~~	432 ~~340~~	1,629 ~~1,213~~	717~~571~~	~~85~~ 90	3,983 ~~2966~~

Assumptions:

- **Individual tables describe other assumptions; this table is a summation of previous table information categorized by Exempt and Non-Exempt per phase.**

~~Anticipated overall duration = 6 months~~
~~Labor level of effort and skill set mix based on previous USEC GCEP Cleanout efforts~~
~~All cranes, platforms, fencing is in place~~

Table D3-5.12
Worker Unit Cost Schedule

This Table is withheld pursuant to 10 CFR 2.390 and is located in Appendix ~~C~~ D of this ~~Plan~~DFP

Table D3-613
Total Labor Costs by Major Decommissioning Task

This Table is withheld pursuant to 10 CFR 2.390 and is located in Appendix ~~C~~ D of this ~~Plan~~DFP

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

Waste Type	[A] Disposal Volume (~~m~~ft^3); # Centrifuges	[B] Number of Containers	[C] ~~Unit Cost (~~$/~~m^3~~)~~Container Volume	[D] Unit Cost ~~Surcharges~~ ($/ft^3 or $/gal~~container~~)	[E] Total Unclassified Waste Disposal Costs
1: Miscellaneous Total Compacted Equipment Solid Waste~~Machine – Internals~~	4,293 ~~270~~	49 ~~100~~	90 ~~$ 1,161.60~~	$ ~~2,800.00~~ 52.47	$ ~~593,632.00~~ 226,670
2: Liquid Waste ~~Machine – Casings~~	130 ~~270~~	3 ~~100~~	55 ~~$ 1,161.60~~	$ ~~2,800.00~~ 77.80	$ ~~593,632.00~~ 12,837
Sub-Total	~~540~~	~~200~~	~~$ 1,161.60~~	~~$ 2,800.00~~	$ ~~1,187,264.00~~ 239,507

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 C3.4~~a~~A)
- [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^3; [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^3 (Rad Characterization Equipment); [D^2] = Unit Cost^2 = $77.80 = $70.00/gal (incineration and disposal at Diversified Scientific Services Inc. {DSSI}, Oak Ridge, TN) + $1.02/gal (transportation and brokerage cost [350 miles one way trip to DSSI]) + $6.78/gal (labor costs - Handling, Sampling, Lab Analyses) [$2011]
- [E^1] = $B^1C^1D^1$; [E^2] = $B^2C^2D^2$
- 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: [1](current disposal and transportation cost) / (total compacted solid waste cost) = 0.69; [2] (incineration and disposal cost + transportation cost) / (total liquid waste cost) = 0.91

Waste Type	[F] # of Centrifuges	[G] Factor (B-25/ma)	[H] Number of Containers	[J] Container Volume	[K] Unit Cost ($/ft^3)	[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						$1,856,286
Grand Total (Rounded, M)						$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)
- [H^3] = number of B-25 boxes = FG; [H^4] = number of machine casings
- [J^3] = B-25 boxes volume = 90 ft^3; [J^4] = casing attributed volume = 290 ft^3
- [K^3] = Unit Cost^3 = $36.86/$ft^3$ = $16.35/$ft^3$ (current DOE classified disposal cost - NTS, NV) + $4.40/$ft^3$ (transportation [2,136 miles one way trip and brokerage costs) + $15.33/$ft^3$ (labor costs - Handling, Waste Engineering, Radiological NDA Waste Characterization, and HP Support) + $.078/$ft^3$ (Radiological Characterization Equipment) ; [K^4] = Unit Cost^4 = $32.59/$ft^3$ = $16.35/$ft^3$ (current DOE classified disposal cost – NTS, NV) + $5.11/$ft^3$ (transportation [2,136 miles one way trip and brokerage costs) + $10.35/$ft^3$ (labor costs – Handling, Waste Engineering, Radiological NDA Waste Characterization, and HP Support) + $0.78/$ft^3$ (Radiological Characterization Equipment) [$2011]
- [M^3] = $H^3J^3K^3$; [M^4] = $H^4J^4K^4$
- 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: ^{3}(current DOE disposal cost + transportation cost^3) / (total classified waste cost^3) = 0.56; ^{4}(current DOE disposal cost + transportation cost^4) / (total classified waste cost^4) = 0.66

Table C3.15 Equipment/Supply Costs

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

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).

Table C3-8.16

Laboratory Costs

Phase	Activity	# Workers	# Yr	Routine Freq (Samples/y)	Recall Freq (Samples/y)	Incident Freq (Samples/y)	Sample Factor	Unit Cost ($)	Total Cost
1	Planning & and Preparation	9	0.314	4	0.2	2	6.2	115 118	$2,068 $ 2,015
2	Decontamination or Dismantling of Radioactive Facility Components	40 41	0.231	12	0.6	6	18.6	115 118	$20,787 $ 19,764
3	Restoration of Contaminated Areas on Facility Grounds	3	0.297	12	0.6	4	16.6	115 118	$1,745 $ 1,701
4	Final Radiation Survey	3	0.198	12	0.6	4	16.6	115 118	$ 1,164 $ 1,134
5	Site Stabilization and Long-Term Surveillance	0	0.5 0.000	4	0.2	2	6.2	115 118	———
TOTALS		5556							$25,764 $ 24,614
TOTAL (Rounded, M)									$0.03

Assumptions:

- The utilization of the 'On-Site' laboratory facility is anticipated; therefore, there are no associated transportation costs included in the derivation of the Unit Cost. On-Site laboratory facility is open for use by third-party contractors.
- Routine Frequency is the anticipated number of samples per individual per year (see Table 4.7-3 of the ACP Lead Cascade License Application).
- Recall Frequency assumes 5% recall rate; Recall = an individual sample submitted when analysis results exceed a predetermined urinalysis program action level (see Table 4.7-3 of the ACP Lead Cascade License Application).
- Incident Frequency assumes 2 samples submitted for each incident; Incident = a special sample submitted for analysis due to an incident (for example, a personnel contamination event or an airborne release of radioactive material event occurs).
- Sample Factor = Routine freq % + Recall % + Incident %; Total Cost = (# workers/phase) * -(# yr) * Sample Factor * Unit Cost.
- # samples = (# workers/phase) * (Routine freq % + Recall % + Incident %) * # yr.
- Analytical Unit Cost = $118115 / sample [Amount based for uranium isotopic analysis by alpha spectrometry and includes analysis performance, laborlaboratory, as well as Quality Assurance/Quality Control labor, and cost of materials plus overheads] ($CY0911). Unit costs for laboratory work currently fixed for CY08 and CY09.

Table C3-9.17
Miscellaneous Costs

Other Direct Costs

Cost Item	Total Cost
Miscellaneous Material for DeCon[1]	~~$70,000~~ **140,000**
Total	**$140,000**
Total (Rounded, M)	**$0.14**

Note 1: Estimate based upon percentage of Decommissioning Cost subtotal (1.5% * Total Other **Indirect** Costs) (values from Table **C**3.~~10~~**18)**~~-~~; **-factor then rounded.**

Other Indirect Costs

Cost Item	Total Cost
NRC Staff Review ~~&~~ **and** Approval D~~F~~P[2]	$~~80,000~~ **82,200**
NRC Fees[3]	~~$256,875~~ **526,500**
DOE Lease	~~$442,312~~ **516,991**
Business Insurance	-
Taxes[4]	~~$121,707~~ **11,728**
Total	**~~$970,894~~ 1,137,419**
Total (Rounded, M)	**$1.14**

Note 2: Estimate based upon review and approval for Decommissioning Plan (DP). Inflation Index = CY2009 (0.9%) * CY2010 (0.8%) * CY2011 (1.0%) [See Reference A ~~of~~in Table C3.15].

Note 3: Estimate based upon NRC Annual Operational Fees for plant.

Note 4: Estimate based upon procured items [Total Table C3.15~~Total~~ * 7% tax rate].

Table C3-~~.10~~8
Total Decommissioning Costs

Ref	Task	Calculated Costs ($2011, M)	Approximate Percentage
D3.13	Planning and Preparation	~~$ 298,079~~ $0.33	5%
D3.13	Decontamination ~~and/~~or Dismantling of Radioactive Facility Components	~~$ 651,281~~ $1.13	~~11~~ 17%
D3.13	Restoration of Contaminated Areas of Facility Grounds	~~$ 57,461~~ $0.08	1%
D3.13	Final Radiation Survey	~~$ 52,857~~ $0.08	~~1~~ 2%
D3.13	Site Stabilization and Long-Term Surveillance	$ 0	0%
	Indirect Services	~~$ 2,515,405~~ $1.60	~~44~~ 24%
C3.14	Packing ~~Materials~~, Shipping, and Waste Disposal Costs	~~$ 1,187,264~~ $1.86	~~21~~ 28%
C3.15	**Equipment/Supply Costs**	$0.17	3%
C3.16	Laboratory Costs	~~$ 24,614~~ $0.03	~~0~~ 1%
C3.17	**Other Direct Costs**	$0.14	2%
C3.17	~~Miscellaneous~~ **Other Indirect** Costs	~~$ 970,894~~ $1.14	17%
	Subtotal[1]	~~$ 5,757,855~~ $6.56	100%
	General & Administrative ~~(6%)~~[2]	~~$ 345,471~~ $0.39	
	Contractor Profit ~~(15%)~~[3]	~~$ 685,977~~ $0.69	
	Contingency ~~(25%)~~[4,5]	~~$ 1,697,326~~ $1.91	
	Total Decommissioning Cost Estimate	~~$ 8,486,629~~ $9.55	

~~$CY 2009~~

Note 1: Subtotal includes labor/materials/overhead allocations costs.

Note 2: General & Administrative (G&A) cost assumed to be 6% based upon current company's experience ~~and is representative of general industry practice~~.

Note 3: Contractor Profit assumed to be 15% on the subtotal plus G&A minus **Other I**~~i~~ndirect ~~c~~Costs **[excluding insurance] minus the outside services portion of the Packaging, Shipping, and Waste Disposal Costs** ~~(Administrative fees [Table 3-9 NRC Staff Review & Approval Cost] and Waste Disposal costs [Table 3-8 Waste Cost = ACB* (Internals~~

~~+ Casings)]; ACB = Disposal Volume * Unit Cost * Number of Containers~~ **(15% *[6.56 + 0.39 – 1.14 – ~~0.4~~ 1.20] = $0.~~8769M).**

Note 4: Contingency assumed to be 25% on subtotal plus G&A and contractor profit.

~~Note 5: Contingency assumed to be 25% on Tails Disposal cost.~~

Table C3.19 Total Labor Distribution

Group	Type	Job/Personnel/Benchmark Descriptions
Supervision	Exempt	~~Program Manager,~~ Project Manager~~, Office Manager, QA/Reg Manager, Rad Environmental Safety and Health Manager, FNMCA Manager~~
Engineering	Exempt	Design Engineer, ~~Field Support, NCS~~ Engineer **(Systems),** Nuclear ~~Safety~~ **Engineer, Engineer** (Regulatory)
Operations	Exempt	~~Operations FLM~~**Production Supervisor**
	Non- Exempt	~~Chemical Operations, UMH~~**Hazardous Materials Technician**
Maintenance	Exempt	Maintenance **Supervisor,** ~~FLM,~~ Scheduler-Planner
	Non- Exempt	Mechanic, **Groundskeeper (**~~L~~laborer~~), Field Service Technician~~
Support	Exempt	**Health Physics (HP)** ~~HP Support~~**Supervisor, HP/Industrial Hygiene,** ~~Engineers,~~ **Engineer (Waste)**
	Non- Exempt	~~Protection Forces~~**HP Technician, Security Officers – Armed, Research Technician, Hazardous Materials Technician**

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Enclosure 4 to AET 11-0001

Affidavit

Information contained within
does not contain
Export Controlled Information

Reviewer: R.S. Lykowski
Date: 01/27/2011

AFFIDAVIT OF PETER J. MINER
SUPPORTING APPLICATION TO WITHHOLD FROM
PUBLIC DISCLOSURE CERTAIN INFORMATION CONTAINED
IN ENCLOSURE 3 OF AET 11-0001 FOR THE
AMERICAN CENTRIFUGE LEAD CASCADE FACILITY

I, Peter J. Miner, of USEC Inc. (USEC), having been duly sworn, do hereby affirm and state:

1. 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.
2. 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 3 to USEC letter AET 11-0001. Enclosure 3 contains USEC's decommissioning worker unit cost and total labor costs captured in Appendix D of the Decommissioning Funding Plan for the Lead Cascade. The information contained within Enclosure 3 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.

Peter J. Miner

State of Maryland)
) ss.
County of Montgomery)

On this 28th day of January 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.

Roxine Behrens, Notary Public
My commission expires September 14, 2011

ROXINE BEHRENS
Notary Public
Montgomery County
Maryland
My Commission Expires Sep 14, 2011