



November 4, 2009
AET 09-0082

ATTN: Document Control Desk
Mr. Michael F. Weber
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 USEC Inc.'s Proposed Changed Pages to the Decommissioning Funding Plan
for the American Centrifuge Lead Cascade Facility (TAC L32891)**

Pursuant to Reference 1, USEC Inc. (USEC) hereby submits to the U.S. Nuclear Regulatory Commission non-proprietary proposed changed pages to the Decommissioning Funding Plan for the American Centrifuge Lead Cascade Facility as Enclosure 1.

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

Sincerely,

Peter J. Miner
Director, Regulatory and Quality Assurance

cc: J. Downs, NRC HQ
J. Henson, NRC Region II
O. Siurano, NRC HQ
B. Smith, NRC HQ

Enclosure: As Stated

Reference:

1. USEC letter AET 09-0081 to M.F. Weber (NRC) from P.J. Miner regarding Submittal of USEC Inc.'s Response to a Request for Additional Information Related to the Revised Decommissioning Funding Plan for the American Centrifuge Lead Cascade Facility (TAC L32891), dated November 4, 2009

NMSSO1

Enclosure 1 of AET 09-0082

**Non-proprietary Proposed Changed Pages to the Decommissioning Funding Plan
for the
American Centrifuge Lead Cascade Facility**



Decommissioning Funding Plan

American Centrifuge Lead Cascade Facility

in Piketon, Ohio



Proposed Change

Information Contained Within
Does Not Contain
Export Controlled Information

Reviewer: s/G. Peed

Date: 10/30/2009

NR-2605-0004

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

Docket No. 70-7003

Proposed Change

Updated List of Effective Pages

<u>Page</u>	<u>Revision/ Change Letter</u>	<u>Page</u>	<u>Revision/ Change Letter</u>
Cover	Proposed Change	A-3	Proposed Change
Inside Cover	Proposed Change	A-4	Proposed Change
i	Proposed Change	A-5	Proposed Change
ii	Proposed Change	A-6	Proposed Change
1	Proposed Change	A-7	Proposed Change
2	Proposed Change	A-8	Proposed Change
3	Proposed Change	A-9	Proposed Change
4	Proposed Change	B-1	0
5	Proposed Change	B-2	Proposed Change
6	Proposed Change	B-3	Proposed Change
7	Proposed Change	B-4	Proposed Change
8	Proposed Change	B-5	Proposed Change
9	Proposed Change	B-6	Proposed Change
10	Proposed Change	B-7	Proposed Change
11	7	C-1	0/A
A-1	Proposed Change	C-2	Proposed Change
A-2	Proposed Change		

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 CFR 1045 review and Approval completed on 7/10/2009

Revision – 10 CFR 1045 review and Approval completed on 10/30/2009

Table of Contents

1.0 INTRODUCTION.....1

2.0 GENERAL INFORMATION1

3.0 DECOMMISSIONING COST ESTIMATE.....2

4.0 DECOMMISSIONING FUNDING MECHANISM.....10

5.0 ADJUSTING DECOMMISSIONING COSTS AND FUNDING.....10

6.0 RECORD KEEPING PLANS RELATED TO DECOMMISSIONING
FUNDING.....11

Tables

Table 3-1 Facility Description.....3

Table 3-2 Number and Dimensions of Facility Components.....4

Table 3-3 Quantities of Materials or Waste Accumulated Before Shipping and Disposal ...5

Table 3-4 Total Work Days by Labor Category6

Table 3-5 Worker Unit Cost Schedule6

Table 3-6 Total Labor Costs by Major Decommissioning Task6

Table 3-7 Packaging, Shipping, and Disposal of Radioactive Wastes.....7

Table 3-8 Laboratory Costs7

Table 3-9 Miscellaneous Costs.....8

Table 3-10 Total Decommissioning Costs9

Appendices

APPENDIX A A-1

APPENDIX BB-1

APPENDIX CC-1

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 Portsmouth Gaseous Diffusion Plant (PORTS). 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 UF₆ through centrifuge machines as documented in Material License SNM-7003. Uranium enriched in the ²³⁵U isotope up to the certified limit of PORTS (10 weight percent ²³⁵U) will be recombined with material depleted in the ²³⁵U isotope. No enriched product will be removed from the cascade, except for samples. As currently envisioned the facility will have up to 76 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 machines, plus an additional 24 machines to account for potential contingencies for a total of 100 centrifuge machines to be decommissioned.

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

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

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

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, 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-1727, *NMSS Decommissioning Standard Review Plan*, 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 3.1 of Appendix F of NUREG-1727, is set forth in the tables below. These tables provide the following:

- Facility Description (Table 3-1)
- Descriptions of facility buildings and grounds that will require decontamination (including number and dimensions of areas) (Table 3-2)
- Number and types of components that will require decontamination (Table 3-3)
- Potential quantities of materials or waste requiring disposition (Table 3-3)
- Labor costs (Tables 3-4 through 3-6)
- Non-labor costs (Table 3-7)
- Laboratory Costs (Table 3-8)
- Miscellaneous costs (Table 3-9)
- Total Decommissioning Costs (Table 3-10)

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 2009 dollars is \$8.49 million (Table 3-10).

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 2009 dollars, and 2009 estimated costs for services and materials, resulting in a DCE that reflects independent third-party costs to perform Lead Cascade decommissioning activities.

**Table 3-1
Facility Description**

<p>NRC License Numbers and Types (i.e., Part 30, 40, 70, or 72)</p> <p>- 10 CFR Part 70 - To possess and use special nuclear, source, and by-product material</p>
<p>Types and Quantities of Materials Authorized Under the Licenses Listed Above.</p> <p>- 250 kg UF₆ (Uranium Hexafluoride)</p>
<p>Description of How Licensed Materials Are Used.</p> <p>- 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.</p>
<p>Description of Facility, Including Buildings, Rooms, Grounds, and Description of Where Particular Types of Materials Are Used.</p> <p><u>X-7726 Centrifuge Training and Test Facility</u> - Area where material and components are received, components or subassemblies are inspected or tested, and centrifuge machines are assembled.</p> <p><u>X-7725 Recycle/Assembly Building</u> - 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.</p> <p><u>X-7727H Transfer Corridor</u> - Area that provides an enclosed throughway from the X-7725 to the X-3001 Process Building #1 (Lead Cascade).</p> <p><u>X-3001 Process Building #1</u> - 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.</p> <p><u>X-3012 Process Support Building</u> - Area that houses the Area Control Room, maintenance shops and stores, and other support areas.</p>
<p>Quantities of Materials or Waste Accumulated Before Shipping or Disposal.</p> <p>- See table 3-3</p>

Table 3-2
Number and Dimensions of Facility Components

Facility	Description	Dimension (ft²)
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 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 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.

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 Stabilization 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 Cleanup efforts
 ≈80 Centrifuge Machines anticipated, Disposal Cost estimates based on 100 Centrifuge Machines
 1 Centrifuge Machine/2 B-25 Boxes; (1: internals; 2: casing)
 1 B-25 Box = 96 ft³ = 2.7 m³
 \$32.67/ft³ (Current scrap metal disposal cost); \$1,161.60/m³
 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.

There are no decommissioning costs associated with disposition of UF₆ 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. 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.

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. 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.

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 the requirements of 10 CFR 70.25(e) and the recent NRC proposed change to financial assurance amendments for materials licensees (67 FR 62403, October 7, 2002). The method for adjusting the cost estimate will consider the following:

² The model documentation is derived from NRC guidance in NUREG-1727, *NMSS Decommissioning Standard Review Plan*, September 2000. 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-1727 will also be used as guidance in the preparation of funding instruments.

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.

In the event of an increase in the amount for decommissioning activity guaranteed by this bond, the Principal and Surety hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new amount, provided 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

**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]."

MODEL SPECIMEN CERTIFICATE OF EVENTS

[Insert name and address of trustee]

Attention: Trust Division

Gentlemen:

In Accordance with the terms of the agreement with your dates _____, I, _____, [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 [insert name of licensee]

Date

MODEL SPECIMEN CERTIFICATE OF RESOLUTION

I, _____, 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__.

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*] _____ [*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 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*]

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, 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, 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 "a" 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

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

Trustee's fees shall be \$ _____ per year.

Name and address of Trustee:

Phone number of Trustee: