

April 13, 2007

Mr. Steven A. Toelle
Director, Nuclear Regulatory Affairs
U. S. Enrichment Corporation Inc.
6903 Rockledge Drive
Bethesda, MD 20817-1818

SUBJECT: DRAFT LICENSE FOR THE USEC INC. AMERICAN CENTRIFUGE PLANT
(TAC NOS. L32306 SAFETY, L32307 ENVIRONMENTAL, AND L32308
SAFEGUARDS)

Dear Mr. Toelle:

We are providing, for your review prior to issuance, a copy of the draft license for the USEC Inc. American Centrifuge Plant. Please provide us your comments by April 19, 2007. A copy of this letter and the enclosed draft license are being placed in the Agencywide Documents and Management System (ADAMS) and will be available in the NRC Public Document Room.

If you have any questions, please contact Dr. Stan Echols at (301) 415-6981.

Sincerely,

/RA/

Gary Janosko, Deputy Director
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket: 70-7004

Enclosure: License

cc: Terry Sensua/USEC
William Szymanski/DOE

Mr. Steven A. Toelle
 Director, Nuclear Regulatory Affairs
 U. S. Enrichment Corporation Inc.
 6903 Rockledge Drive
 Bethesda, MD 20817-1818

SUBJECT: DRAFT LICENSE FOR THE USEC INC. AMERICAN CENTRIFUGE PLANT (TAC NOS. L32306 SAFETY, L32307 ENVIRONMENTAL, AND L32308 SAFEGUARDS)

Dear Mr. Toelle:

We are providing, for your review prior to issuance, a copy of the draft license for the USEC Inc. American Centrifuge Plant. Please provide us your comments by June 27, 2006. A copy of this letter and the enclosed draft license are being placed in the Agencywide Documents and Management System (ADAMS) and will be available in the NRC Public Document Room.

If you have any questions, please contact Dr. Stan Echols at (301) 415-6981.

Sincerely,

/RA/
 Gary Janosko, Deputy Director
 Fuel Facility Licensing Directorate
 Division of Fuel Cycle Safety
 and Safeguards
 Office of Nuclear Material Safety
 and Safeguards

Docket: 70-7004

Enclosure: License

cc: Terry Sensua/USEC
 William Szymanski/DOE

DISTRIBUTION:

FCSS R/F	ECB R/F	RPierson/FCSS	GJanosko/FCSS	JGitter/ FCSS
MGalloway/TSB		PHabighorst/FMB	JHenson/RII	DHartland/RII
SEchols/ECB		TJohnson/ECB	RWescott/ECB	ISpivack/ECB
NGarcia/ECB		JOlivier/ECB	USEC Website	

ML070790135

OFC	ECB	ECB	ECB	OGC	FFLD
NAME	SEchols	LWilliamson	BSmith	MBupp	GJanosko
DATE	4/9/07	4/10/07	4/11/07	3/30/07	4/13/07

OFFICIAL RECORD COPY

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. USEC Inc.	3. License Number: SNM-2011
2. American Centrifuge Plant P.O. Box 628 Piketon, Ohio 45661	4. Expiration Date: See Condition 13
	5. Docket No. 70-7004

6. Source, Special Nuclear Material, By-product Material	7. Chemical and/or Physical Form Under This License	8. Maximum amount that Licensee May Possess at Any One Time
A. Uranium (natural and depleted) and daughter products	A.1 Physical: Solid, Liquid, and Gas A.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides and other compounds	A. 215,000,000 kg
B. Uranium enriched in isotope U-235 up to 10% by weight and uranium daughters	B.1 Physical: Solid, Liquid, and Gas B.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal and other compounds	B. 4,000,000 kg
C. Tc-99, transuranic isotopes and other contamination	C. Any	C. Amount that exists as contamination as a consequence of the historical feed of recycled uranium at other facilities
D. By-product Material	D. Any	D. As stated in Table 1.2-1 of the License Application

9. Authorized place of use: American Centrifuge Plant (ACP), located on the Portsmouth Department of Energy Reservation in Piketon, Ohio.
10. The licensee shall conduct authorized activities at the ACP in accordance with the statements, representations, and conditions, or as revised in accordance with Section 19 of the Quality Assurance Program Description, 10 CFR 40.35(f), 10 CFR 51.22, 10 CFR 70.32, 10 CFR 70.72, or 10 CFR 95.19 in:

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
SNM-2011Docket or Reference Number
70-7004

- a. Decommissioning Funding Plan dated August 23, 2004, as revised by letters dated March 14, 2005; May 23, 2005; June 22, 2005; August 30, 2005; September 2, 2005; October 21, 2005; November 30, 2005; March 17, 2006; and August 23, 2006.
 - b. Emergency Plan dated August 23, 2004, as revised by letters dated March 14, 2005; May 23, 2005; June 17, 2005; August 30, 2005; October 7, 2005; November 7, 2005; November 17, 2005; February 17, 2006; June 1, 2006; and August 23, 2006.
 - c. Environmental Report dated August 23, 2004, as revised by letters dated May 4, 2005; June 15, 2005; July 29, 2005; August 16, 2005; October 21, 2005; November 29, 2005; February 17, 2006; and August 23, 2006.
 - d. Fundamental Nuclear Material Control Plan dated August 23, 2004, as revised by letters dated March 14, 2005; May 12, 2005; October 7, 2005; February 17, 2006; and August 23, 2006.
 - e. License Application dated August 23, 2004, as revised by letters dated March 14, 2005; April 29, 2005; May 23, 2005; June 15, 2005; June 22, 2005; August 30, 2005; September 2, 2005; September 27, 2005; October 7, 2005; November 7, 2005; November 17, 2005; November 30, 2005; December 2, 2005; March 17, 2006; June 1, 2006; August 23, 2006; August 31, 2006; and September 9, 2006.
 - f. Quality Assurance Program Description dated August 23, 2004, as revised by letters dated March 14, 2005; November 7, 2005; and February 17, 2006.
 - g. Security Program dated August 23, 2004, as revised by letters dated March 14, 2005; June 17, 2005; November 7, 2005; February 17, 2006; and August 23, 2006.
11. Introduction of UF₆ into any module of the ACP shall not occur until the Commission completes an operational readiness and management measures verification review to verify that management measures that ensure compliance with the performance requirements of 10 CFR 70.61 have been implemented and confirms that the facility has been constructed and will be operated safely and in accordance with the requirements of the license. The licensee shall provide the Commission with 120 days advance notice of its plan to introduce UF₆ in any module of the ACP.
 12. The licensee is hereby granted the special authorizations and exemptions identified in Section 1.2.5 of the American Centrifuge Plant License Application, dated August 2006.
 13. This license will expire 30 years after the date of license issuance.
 14. USEC Inc. (USEC) shall provide to the Commission, at least 120 days prior to the planned date for obtaining licensed material, documentation of any liability insurance required to be obtained by USEC under its lease with DOE for the ACP by that time or, alternatively, the status of USEC's efforts to obtain any such liability insurance. During the time that USEC is engaged in efforts to obtain liability insurance, USEC shall provide the Commission with status reports regarding those efforts. The status reports shall be submitted at a frequency of at least once every six months following issuance of a license. USEC shall notify the Commission within 30 days upon receiving notification of denial or approval of commercial liability insurance for the ACP. If commercial liability insurance is required to be obtained under its lease with DOE, within 60 days of receiving notification of approval of commercial liability insurance, USEC shall provide proof of liability insurance coverage and a justification, for Commission review and approval, if USEC is proposing to provide less than \$300 million of liability insurance coverage.
 15. Construction of each incremental phase of the ACP shall not commence before funding for that increment is available or committed. Of this funding, USEC must have in place before constructing such increment, commitments for one or more of the following: equity contributions from USEC, affiliates and/or partners, along with lending and/or lease arrangements that solely or cumulatively are sufficient to ensure funding for the particular increment's construction costs. USEC shall make available for Nuclear Regulatory

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
SNM-2011Docket or Reference Number
70-7004

Commission (NRC) inspection, documentation of both the budgeted costs for such phase and the source of funds available or committed to pay those costs.

Operation of the ACP shall not commence until USEC has in place either: (1) long term contracts lasting five years or more that provide sufficient funding for the estimated cost of operating the facility for the five year period; (2) documentation of the availability of one or more alternative sources of funds that provide sufficient funding for the estimated cost of operating the facility for five years; or (3) some combination of (1) and (2).

16. USEC shall provide final copies of the proposed financial assurance instruments to NRC for review at least six months prior to the planned date for obtaining licensed material, and provide to NRC final executed copies of the reviewed financial assurance instruments prior to the receipt of licensed material. The amount of the financial assurance instrument shall be updated to current year dollars and include any applicable changes to the decommissioning cost estimate. The decommissioning cost estimate shall include an update to USEC's Analysis of Depleted Uranium Disposal Costs for the ACP. To develop this update, USEC shall coordinate with DOE to determine necessary changes to the DOE contractor's depleted uranium cost estimate utilized as input to the USEC specific analysis.
17. The initial and subsequent updated Decommissioning Funding Plan (DFP) cost estimates, up to the time of full capacity operations, and revised funding instruments shall be provided annually and shall provide full funding for decontamination and decommissioning of the full-size facility, except:
- (1) The cost estimate for decontamination and removal of the centrifuges shall be provided on an annual forward-looking basis based on planned incremental enrichment capacity increases; and
 - (2) The cost estimate for depleted uranium byproduct generation shall be provided on a projected annual forward-looking basis. The decommissioning cost estimate shall include an update to USEC's Analysis of Depleted Uranium Disposal Costs for the ACP. To develop this update, USEC shall coordinate with DOE to determine necessary changes to the DOE contractor's depleted uranium cost estimate utilized as input to the USEC specific analysis.

Once full capacity operation is achieved, the licensee shall provide cost estimates for depleted uranium byproduct generation on an annual forward-looking basis and cost estimates for decontamination and decommissioning the remainder of the facility at intervals not to exceed 3 years, consistent with the requirements of 10 CFR 40.36(d) and 10 CFR 70.25(e).

The DFP cost estimates shall be provided to NRC for review, and subsequently, after resolution of any NRC comments, final executed copies of the financial assurance instruments shall be provided to NRC.

18. USEC shall utilize its procedure, "IROFS Boundary Determination Plan," to define the boundaries of each Item Relied on for Safety (IROFS). Completed IROFS boundaries for all IROFS shall be available for inspection at the time of the operational readiness review.
19. Currently, there are no IROFS that have been specified as using software, firmware, microcode, PLCs, and/or any digital device, including hardware devices which implement data communication protocols (such as fieldbus devices and Local Area Network controllers), etc. Should the design of any IROFS be changed to include any of the preceding features, the licensee shall obtain Commission approval prior to implementing the change(s). The licensee's design change(s) shall comply with accepted best practices in software and hardware engineering, including software quality assurance controls as discussed in the

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
SNM-2011Docket or Reference Number
70-7004

Quality Assurance Program Description throughout the development process and the applicable guidance of the following industry standards and regulatory guides:

- a. American Society of Mechanical Engineers (ASME) NQA-1, Part II, subpart Part 2.7, "Quality Assurance Requirements of Computer Software for Nuclear Facility Applications," as revised by NQA-1a Addenda of NQA-1 and ASME NQA-1, Part 1, Supplement 11S-2, "Supplementary Requirements for Computer Program Testing".
 - b. Regulatory Guide 1.168, "Verification, Validation, Reviews, and Audits for Digital Software Used in Safety Systems of Nuclear Power Plants," Revision 1, February 2004.
 - c. Regulatory Guide 1.169, "Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.
 - d. Regulatory Guide 1.170, "Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.
 - e. Regulatory Guide 1.172, "Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.
 - f. Regulatory Guide 1.173, "Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.
20. USEC shall provide a minimum 60-day notice to NRC prior to initial customer product withdrawal of licensed material exceeding 5 wt. percent ²³⁵U enrichment. This notice shall identify the necessary equipment and operational changes to support customer product shipment for these assays.
21. The licensee shall maintain and follow the Fundamental Nuclear Material Control Program for control and accounting and measurement control of uranium source material and special nuclear material at the ACP pursuant to 10 CFR 74.33(b). The licensee shall make no change to material control procedures essential for the safeguarding of uranium source material or special nuclear material that would decrease the effectiveness of the material control and accounting program implemented pursuant to 10 CFR 74.33(b) without prior approval of the Commission. If the licensee desires to make changes that would decrease the effectiveness of its material control and accounting program or its measurement control program, the licensee shall submit an application for amendment to its license pursuant to 10 CFR 70.34.
- The licensee shall maintain records of changes to the material control and accounting program made without prior Commission approval for a period of five years from the date of the change. The licensee shall furnish to the Director, Division of Nuclear Security, Office Nuclear Security and Incident Response, using an appropriate method listed in 10 CFR 70.5(a), a report containing a description of each change within six months of the change if it pertains to uranium enriched less than 20 percent in the uranium-235 isotope.
22. The licensee shall not use, process, store, reproduce, transmit, handle, or allow access to classified matter except provided by applicable personnel and facility clearances as required under 10 CFR Part 95.
23. With respect to the lease for the ACP facilities entitled "Supplemental Agreement No. 1 to the Lease Agreement Between the United States Department of Energy and the United States Enrichment Corporation" dated December 7, 2006, the licensee shall:

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
SNM-2011Docket or Reference Number
70-7004

- a. Provide to the NRC a copy of the written notice that is required to be provided to the DOE regarding lease renewal at the same time that it is provide to the DOE;
- b. Provide to the NRC a copy of the written notice that is required to be provided to the DOE regarding the licensee's decision to terminate the lease at the same time that it is provide to the DOE;
- c. Inform the NRC within 24 hours upon being informed by DOE that it is terminating the lease; and
- d. Provide to the NRC a copy of any modifications to the lease within 30 days of the modification being signed.



FOR THE NUCLEAR REGULATORY COMMISSION

Date: / /07By: _____
Gary Janosko, Deputy Director
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001