



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 24, 2004

MEMORANDUM TO: Robert C. Pierson, Director  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

THROUGH: Joseph G. Giitter, Chief  
Special Projects and Inspection Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

Handwritten signature of Joseph G. Giitter.

FROM: Brian W. Smith, Chief  
Special Projects Section  
Special Projects and Inspection Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

Handwritten signature of Brian W. Smith.

SUBJECT: MEMORANDUM OF UNDERSTANDING BETWEEN THE NUCLEAR  
REGULATORY COMMISSION AND THE DEPARTMENT OF ENERGY  
FOR THE UNITED STATES ENRICHMENT CORPORATION INC.'S  
LEAD CASCADE FACILITY IN PIKETON, OHIO

For your review and signature, attached is the final version of the Memorandum of Understanding (MOU) between the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) for the United States Enrichment Corporation Inc.'s (USEC Inc.'s) proposed Gas Centrifuge Lead Cascade Facility in Piketon, Ohio. NRC and DOE staff involved with the development of this MOU, and USEC Inc. are in agreement with its content. Please note that this document is concurrently undergoing DOE review and approval.

Docket No. 70-7003

Attachment: Memorandum of Understanding

cc:

Rod Krich, LES  
Randall DeVault, DOE  
Carol O'Claire, Ohio EMA  
James Curtiss, W&S

Dan Minter, SODI  
William Szymanski, DOE  
Michael Marriotte, NIRS

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Division of Fuel Cycle Safety  
and Safeguards, NMSS

FROM: Brian W. Smith, Chief /RA/  
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Special Projects and Inspection Branch  
Division of Fuel Cycle Safety  
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NAME	YFaraz:dw	LGross	BSmith	JLieberman	JGiitter	RPierson
DATE	2/09/04	2/10/04	2/10/04	2/10/04	2/10/04	2/12/04

OFFICIAL RECORD COPY

March 24, 2004

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
DEPARTMENT OF ENERGY  
AND THE  
NUCLEAR REGULATORY COMMISSION**

**COOPERATION REGARDING THE  
GAS CENTRIFUGE LEAD CASCADE FACILITIES  
AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT SITE**

**I. BACKGROUND**

The Atomic Energy Act of 1954 (the Act), as amended by the Energy Policy Act of 1992 (42 U.S.C. §2297 *et seq.*) created the United States Enrichment Corporation (USEC), a government corporation, for the purpose of managing and operating the uranium enrichment enterprise owned and previously operated by the Department of Energy (DOE). USEC subsequently leased from DOE, portions of the Portsmouth Gaseous Diffusion Plant (Portsmouth Site) and the Paducah Gaseous Diffusion Plant (Paducah Site) which related to the gaseous diffusion plant (GDP) process. The framework for DOE's authority to regulate nuclear safety, safeguards and security at the GDP sites was contained in the Regulatory Oversight Agreement (ROA).<sup>1</sup>

The Energy Policy Act of 1992 also required the Nuclear Regulatory Commission (NRC) to certify USEC's operation of the GDPs to ensure compliance with its safety, safeguards and security requirements. DOE agreed to retain oversight of the plants until the NRC finished its certification process and was ready to assume jurisdiction.

In November 1996, NRC issued initial certificates of compliance for the plants. The certificates provided for a transition period before NRC assumed regulatory authority to allow USEC to complete actions such as procedural revisions and training. DOE continued regulatory oversight during this transition period. Transition to NRC regulatory oversight occurred on March 3, 1997. By agreement dated October 10, 1995, DOE and USEC agreed that the DOE ROA will continue to govern leased uncertified facilities or activities after NRC certification.

In June 2002, USEC Inc. (parent company of USEC) and DOE signed an Agreement<sup>2</sup> whereby USEC Inc. made long-term commitments that will ensure stability for the domestic uranium enrichment industry and provide a continued, reliable fuel source for the world's nuclear reactors.

The U.S. gas centrifuge technology was developed by the U.S. government and demonstrated by DOE until 1985. In September 2002, USEC Inc. signed a Cooperative Research and

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<sup>1</sup>Exhibit D of the Lease Agreement between the U.S. Department of Energy and the United States Enrichment Corporation; dated July 1, 1993

<sup>2</sup> Agreement between the U.S. Department of Energy ("DOE") and USEC Inc.; dated June 17, 2002

Development Agreement (CRADA) with UT-Battelle LLC, approved by DOE, to expand cooperative efforts to deploy proven U.S. gas centrifuge uranium enrichment technology. USEC Inc.'s design will use the advantages of DOE's design while incorporating key technological advancements and cost reductions. UT-Battelle LLC and USEC Inc. will conduct further centrifuge development work at DOE's East Tennessee Technology Park (ETTP) in Oak Ridge, TN, where centrifuge test facilities already exist.

USEC Inc. announced in December 2002 that it will site its American Centrifuge Lead Cascade Facility (also referred to as the "Lead Cascade") centrifuge uranium enrichment test and demonstration facility at DOE's Portsmouth Site. USEC Inc. submitted a 10 CFR Part 70 license application to the NRC in February 2003 to possess and use a limited quantity of special nuclear material in the American Centrifuge Demonstration Facility. In January 2004, the NRC completed its review of the application and issued its Environmental Assessment with a "Finding Of No Significant Impact" and Safety Evaluation Report. On February 24, 2004, the NRC issued a license for the Lead Cascade Facility after DOE approved the lease on February 17, 2004, allowing USEC Inc. to refurbish and subsequently operate the facility in accordance with its license application. The Lead Cascade will consist of up to 240 full-scale centrifuge machines in a closed cycle, enriching uranium within the process, while only withdrawing small quantities of low-enriched uranium for sampling purposes. The purpose of the Lead Cascade is to provide updated cost, schedule, and performance data to reduce the financial risks of eventually building a \$1 billion to \$1.5 billion commercial enrichment plant.

USEC has leased portions of DOE's gas centrifuge enrichment plant (GCEP) facilities at the Portsmouth Site. Following USEC's GCEP cleanup work, USEC Inc. will sublease from USEC these facilities for deploying the Lead Cascade. As described in USEC Inc.'s license application, a portion of the leased-GCEP Facilities will be regulated by NRC. The remaining portion of the leased-GCEP Facilities will be regulated by DOE.

## **II. DEFINITIONS**

When utilized in this document, the following terms shall have the meanings indicated below.

"Lead Cascade Facilities" or "Lead Cascade" shall mean the USEC Inc. operated test and demonstration facility located at the Portsmouth Site. It includes the gas centrifuge machines and associated support equipment and facilities as described by USEC Inc.'s License Application for the American Centrifuge Lead Cascade Facility (as amended).<sup>3</sup>

"Leased Facilities" or "Leased Premises" shall mean the real property located at the Portsmouth Site leased to USEC as described in the Lease between DOE and USEC.<sup>4</sup>

"Transition" shall mean the transition from DOE regulatory oversight to NRC regulatory oversight for nuclear safety and appropriate aspects of safeguards and security of the Lead

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<sup>3</sup> License Application; American Centrifuge Lead Cascade Facility at USEC's Facilities in Piketon, Ohio; Document No. LA-2605-0001; dated February 2003

<sup>4</sup> Exhibit A (as amended) to the Lease Agreement between the Department of Energy and United States Enrichment Corporation, dated July 1, 1993

Cascade Facilities and activities. Transition will occur following NRC's pre-operational inspections and regulatory compliance reviews but prior to the introduction of uranium hexafluoride (UF<sub>6</sub>) into the Lead Cascade Facilities unless NRC and DOE mutually agree to a different transition date. It is recognized that there may be a separate transition date for regulatory oversight responsibilities of activities performed by a particular USEC Inc. subcontractor/vendor/partner facility than the transition date agreed upon by DOE and NRC for other activities.

"GCEP Facilities" shall mean the gas centrifuge enrichment plant facilities previously constructed and utilized by DOE at the Portsmouth Site.

### **III. PURPOSE AND SCOPE**

It is the intent of NRC and DOE to work in concert to distinguish Lead Cascade activities under DOE oversight from those under NRC oversight. Accordingly, the purposes of this Memorandum of Understanding (MOU) are as follows:

- To enter into a written, mutual understanding of the roles and responsibilities of the NRC and DOE during the deployment and utilization of gas centrifuge technology by USEC Inc., and to outline the process for the transition of regulatory oversight responsibilities from DOE to NRC.
- To clarify the regulatory boundaries between the NRC and DOE and to avoid dual regulation of USEC Inc., recognizing that USEC Inc. will be conducting both NRC-regulated and DOE-regulated activities associated with the Lead Cascade concurrently in the same buildings.
- To define the way in which NRC and DOE will cooperate to facilitate the obtaining of information and knowledge regarding gas centrifuge technology and facility operations.
- To supplement the following agreements as applicable to the Lead Cascade Facilities and activities:
  - "Agreement Defining Security Responsibilities at the Paducah and Portsmouth Gaseous Diffusion Plants Between the Department of Energy's Office of Safeguards and Security and the Nuclear Regulatory Commission's Division of Security," dated March 10, 1995, and
  - "Memorandum of Understanding between the Nuclear Regulatory Commission and Department of Energy on Cooperation Regarding the Gaseous Diffusion Plants," dated October 28, 1997.

Nothing in this MOU restricts or otherwise limits the authority of either NRC or DOE to exercise its full regulatory authority, including both inspection and enforcement authority.

#### **IV. RESPONSIBILITIES**

- A. Upon leasing the Lead Cascade Facilities to USEC and prior to the transition to NRC regulation:**
- 1. DOE is responsible for ensuring that USEC/USEC Inc. has adequately established and is implementing nuclear safety, safeguards, and security programs in accordance with the applicable DOE Nuclear Safety Requirements (10 CFR Parts 820, 830, and 835) and the Regulatory Oversight Agreement between DOE and USEC for activities prior to transition except as provided in IV.A.2 below. This includes DOE continuing to serve as the cognizant security agency (CSA) for USEC Inc.'s subcontractor/vendor/partner facilities performing work related to the Lead Cascade for which there is no current CSA until the NRC is prepared to take regulatory oversight. It is recognized that there may be a separate transition date for regulatory oversight responsibilities of activities performed by a particular USEC Inc. subcontractor/vendor/partner facility than the transition date agreed upon by DOE and NRC for other activities.**
  - 2. In connection with USEC Inc.'s application for a license under 10 CFR Part 70 and USEC Inc.'s activities related to the application, NRC may make observations for the purpose of obtaining information and knowledge of USEC Inc.'s proposed Lead Cascade operations and is responsible for preoperational inspections and licensing reviews. Specifically, NRC is solely responsible for determining the adequacy of the management measures, including quality control, applied to items relied on for safety (IROFS), and other USEC Inc. activities addressed by the Lead Cascade license application and NRC requirements. NRC is solely responsible for activities that affect the safe operation of the Lead Cascade for compliance with 10 CFR Part 70 requirements. As a result of such activities, NRC may take regulatory action it deems appropriate for matters within NRC jurisdiction. Matters associated with activities prior to transition that are not within NRC jurisdiction, such as described in IV.A.1 above, will be referred to DOE. NRC also has the ability to participate in DOE's regulatory oversight activities for USEC Inc.'s subcontractor/vendor/partner facilities performing work related to the Lead Cascade.**
- B. Following transition to NRC regulation, NRC will be solely responsible for all regulatory oversight of the Lead Cascade Facility including conducting nuclear safety, safeguards, and security reviews and inspections of the Lead Cascade Facilities and activities other than for activities covered under IV.D. After transition, the NRC may observe activities in the remaining GCEP facilities that could adversely impact the safety and/or safeguards condition of the Lead Cascade Facility. NRC will serve as the CSA for USEC Inc.'s subcontractor/vendor/partner facilities after transition. DOE may participate in NRC's regulatory oversight activities for such subcontractor/vendor/partner facilities.**
- C. Upon termination of the 10 CFR Part 70 license (including any amendments or renewals), DOE will resume its responsibilities for conducting nuclear safety, safeguards, and security reviews and inspections of the Lead Cascade Facilities and activities, except for those portions that become licensed as part of USEC Inc.'s commercial gas centrifuge enrichment plant.**

#### **D. Access Authorizations and CSA**

1. DOE will continue to be solely responsible for all access authorization programs for USEC Inc., its subsidiaries, and subcontractors/vendors/partners.
2. DOE will serve as the CSA for areas of the Portsmouth Site that are leased from DOE but not licensed or certified by the NRC.
3. NRC will continue to serve as the CSA for USEC Inc. Lead Cascade support facilities outside the Portsmouth Site or any of its subsidiaries that are not currently regulated by DOE (e.g., USEC Inc.'s headquarters in Bethesda, MD, and research and development facility in Lone Oak, KY).
4. DOE will continue to serve as the CSA for USEC Inc. Lead Cascade support facilities outside the Portsmouth Site that are currently regulated by DOE (e.g., USEC Inc.'s Centrifuge Technology Center and K-1600 facilities in Oak Ridge, TN).
5. DOE will continue to regulate the federal arming and arrest authority granted to USEC security police officers under the provisions of the ROA.

#### **V. INTERFACES BETWEEN DOE AND NRC**

##### **A. Exchange of Information and Technical Staff Support**

1. DOE and NRC agree to make available to each other information and technical support concerning matters of common interest.<sup>5</sup> DOE and NRC agree to meet, as necessary, at mutually agreeable times and locations to exchange information on matters of common interest.
2. DOE agrees to notify NRC in a timely manner of the following:
  - a. Substantial proposed changes to the Portsmouth Site involving matters of common interest.
  - b. Substantial proposed changes to the Lease Agreement between the Department of Energy and the United States Enrichment Corporation, dated July 1, 1993.
  - c. Substantial proposed changes to the DOE Regulatory Oversight Agreement between DOE and USEC.

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<sup>5</sup> Matters of common interest concern the GCEP Facility and Lead Cascade Facility areas, railways, roadways, structures, systems, components, hazards, activities, tenant mix, population, etc. which can impact safety, safeguards or security risks under DOE or NRC jurisdiction during normal, off-normal, or emergency conditions

- d. Substantial proposed changes to "USEC and DOE Resolution of Shared Site Issues at the Gaseous Diffusion Plants (Revision 1)," dated March 30, 1998.
  - e. All changes in the above areas once completed.
3. NRC agrees to notify DOE in a timely manner of the following:
    - a. Substantial proposed changes required by NRC of USEC Inc.'s operations potentially impacting safety, safeguards and/or security on site.
    - b. Changes to the conditions or terms of the NRC license to be issued to USEC Inc.
    - c. Reportable events which could have a negative impact on centrifuge operations.
  4. NRC and DOE will share all observation, audit, assessment, and inspection reports on GCEP Facilities and Lead Cascade Facilities addressed in this MOU.
  5. NRC and DOE will inform each other of enforcement actions involving the Lead Cascade Facilities and activities.
  6. NRC and DOE agree to mutually develop, maintain, and share a Lead Cascade Facility drawing which reflects each agency's regulatory jurisdiction following transition within the Lead Cascade Facilities. The initial development of this document and any subsequent revisions will be mutually agreed upon by both agencies.
  7. Each agency recognizes that it is responsible for the protection, control, and accounting of National Security Information, Restricted Data, Formerly Restricted Data, and Sensitive information [e.g. Proprietary Information, Safeguards Information (SGI), Official Use Only (OUO), Export Control Information (ECI) and Unclassified Controlled Nuclear Information (UCNI)] used or otherwise furnished in connection with this MOU in accordance with its established requirements and procedures.

#### B. Emergency Response

1. In accordance with the Federal Radiological Emergency Response Plan (FRERP), the NRC will be the Lead Federal Agency (LFA) for an emergency at the Portsmouth Site. If the origin of the emergency is determined to be in the DOE portion of the plant, then the LFA would be transferred to DOE. DOE and NRC will use appropriate joint procedures which will ensure compatibility in response to emergencies in Leased Facilities under NRC regulatory oversight.
2. The emergency planning requirements for the Lead Cascade, including offsite notifications and emergency classification levels and their corresponding emergency action levels, will be in accordance with the site emergency plans and procedures



which will be coordinated by the NRC among shared site regulators and tenants before and during implementation.

### C. Referrals

1. During the course of conducting DOE reviews and inspections of nuclear safety, safeguards, and security in leased areas, DOE inspectors may identify nuclear safety, safeguards, or security concerns that could affect the licensing of the Lead Cascade Facilities and activities. In such instances, those concerns identified by DOE will be referred to the NRC for appropriate action. If DOE identifies situations with immediate safety, safeguards, or security significance, it will immediately communicate this information to USEC Inc. and the NRC's Regional Branch Chief and Lead Cascade Project Manager.
2. Similarly, during the course of conducting nuclear safety, safeguards, and security observations and inspections of the Lead Cascade Facilities and activities, NRC personnel may identify nuclear safety, safeguards or security concerns within the area of DOE responsibility. NRC will refer these concerns to the DOE Regulatory Oversight Manager for appropriate disposition. If the NRC identifies situations with immediate safety, safeguards, or security significance, it will immediately communicate this information to USEC Inc. and the DOE Regulatory Oversight Manager.
3. Each agency will be responsible for processing, under its established program(s), allegations – declarations, statements or assertions of impropriety or inadequacy whose validity has not been established – and employee complaints or concerns of regulatory significance. Each agency will keep the other agency informed, as appropriate, of the existence, status, and resolution of such allegations, complaints, or concerns. Each agency will assure, in accordance with its procedures, that each allegation, complaint, or concern is promptly referred to the agency or entity that has jurisdiction over the allegation, complaint, or concern.

### D. Coordination

1. DOE will coordinate with USEC Inc. to inform NRC's Regional Branch Chief and Lead Cascade Project Manager of GCEP Facility reportable events, under DOE's occurrence reporting system, for which DOE is responsible.
2. DOE and NRC shall consult with each other before disclosing information related to the MOU to preclude dissemination of information which may be exempt from disclosure under the Freedom of Information Act. It is NRC's practice to place all docket-related DOE correspondence that is not classified, restricted, or proprietary in the ADAMS System, unless DOE specifically requests, with appropriate justification, that the information be withheld.
3. On occasion, DOE may need to move its nuclear materials through USEC Inc.-leased areas to another location. NRC will not require DOE to fill out Form 741 and/or 742 if the nuclear materials only pass through (and are not processed in)

USEC Inc.-leased areas, and the time frame in which the nuclear materials are in the USEC Inc.-leased areas is not expected to exceed eight (8) hours.

- E. The transition date will be mutually agreed upon by NRC and DOE following notice to and discussion with USEC/USEC Inc. It is recognized that there may be a separate transition date for regulatory oversight responsibilities of activities performed by a particular USEC Inc. subcontractor/vendor/partner facility than the transition date agreed upon by DOE and NRC for other activities.

#### **VI. POINTS OF CONTACT**

- A. The principal senior management contacts for this MOU will be DOE's Director of Nuclear Fuel Security and Uranium Technology, Oak Ridge Operations Office, and the Director, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, NRC. These individuals may designate appropriate staff representatives for the purpose of administering this MOU.
- B. Identification of these contacts is not intended to restrict communication between DOE and NRC staff members on technical and other day-to-day activities.

#### **VII. RESOLUTION OF DISPUTES**

- A. If disagreements or conflicts about matters within the scope of this MOU arise, DOE and NRC will work together to resolve these differences.
- B. Resolution of differences between DOE staff and NRC staff will be the initial responsibility of the DOE Regulatory Oversight Manager in Oak Ridge Operations, and the chief of the responsible branch within the NRC.
- C. If the issue can not be resolved at the staff level, the NRC and DOE agree to refer the matter within thirty (30) days to the Director of Nuclear Fuel Security and Uranium Technology, Oak Ridge Operations Office, and the Director, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, NRC.

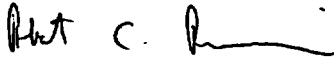
#### **VIII. EFFECTIVE DATE AND MODIFICATION**

This MOU shall become effective upon signing by the DOE Director of the Office of Nuclear Fuel Security and Uranium Technology, Oak Ridge Operations (DOE), and the Director, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards (NRC). It will be subject to periodic reviews and may be amended or modified upon written agreement by the parties. This MOU may be terminated by mutual agreement or by written notice from either party by submittal six (6) months in advance of termination.

**IX. SEPARABILITY**

If any provision(s) of this MOU, or the application of any provision(s) to any person or circumstances, is (are) held invalid, the remainder of this MOU and the application of such provision(s) to other persons or circumstances shall not be affected.

For the U.S. Nuclear Regulatory Commission



\_\_\_\_\_  
Director, Division of Fuel Cycle Safety and Safeguards  
Office of Nuclear Material Safety and Safeguards

For the U.S. Department of Energy



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Director, Office of Nuclear Fuel Security  
and Uranium Technology  
Oak Ridge Operations