UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 8, 2003

MEMORANDUM TO: Joseph G. Giitter, Chief
Special Projects and Inspection Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

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

FROM: Yawar H. Faraz, Senior Project Manager
Special Projects Section
Special Projects and Inspection Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

SUBJECT: AUGUST 27, 2003, MEETING SUMMARY: CLOSED MEETING BETWEEN U.S. NUCLEAR REGULATORY COMMISSION, U.S. DEPARTMENT OF ENERGY AND U.S. ENRICHMENT CORPORATION

On August 27, 2003, U.S. Nuclear Regulatory Commission (NRC) staff held a closed meeting with U.S. Department of Energy (DOE), and U.S. Enrichment Corporation (USEC) staff to discuss: (1) USEC's plan and schedule for dismantling DOE's existing centrifuge machines, installing USEC's new centrifuge machines, and operating USEC's gas centrifuge uranium enrichment test and demonstration facility (Lead Cascade); and (2) DOE, NRC, and USEC roles and responsibilities throughout the various phases of the Lead Cascade project to ensure regulatory continuity. The Lead Cascade facility is to be housed in an existing DOE Gas Centrifuge Enrichment Plant building at the Portsmouth Gaseous Diffusion Plant site in Piketon, Ohio.

I am attaching a meeting summary for your use. Members of the public could not attend the meeting because integral to the discussions were the specific areas where the machines and special nuclear material will be located. This meeting summary contains no proprietary or classified information.

Docket: 70-7003

Attachments: 1. Summary of Closed Meeting between
NRC, DOE and USEC
2. Attendee List
3. Meeting Handouts

cc:
William Szymanski/DOE HQ
James Curtiss/W&S
Mario Robles/USEC
Rod Krich/LES
Randall DeVault/DOE Oak Ridge
Dan Minter/SODI
Michael Marroitte/NIRS
Bob Taft/Governor Ohio
Mike DeWine/Senator Ohio
George V. Voinovich/Senator Ohio
Rob Portman/Congressman Ohio
Bob Ney/Congressman Ohio

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| NAME | YFaraz | | LGross | | BSmith | |
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Summary of Closed Meeting Between NRC, DOE and USEC

Date: August 27, 2003

Place: U.S. Nuclear Regulatory Commission (NRC) Offices; Rockville, Maryland

Attendees: See Attachment 2

Purpose:

The purpose of this closed meeting requested by the U.S. Enrichment Corporation (USEC) was for the NRC, the Department of Energy (DOE), and USEC to discuss: (1) USEC's plan and schedule for dismantling DOE's existing centrifuge machines, installing USEC's new centrifuge machines and operating USEC's gas centrifuge uranium enrichment test and demonstration facility (Lead Cascade); and (2) DOE, NRC, and USEC roles and responsibilities throughout the various phases of the Lead Cascade project to ensure regulatory continuity. Pursuant to 10 CFR 2.790, the meeting was closed to members of the public due to the proprietary nature of information that was discussed involving the layout of the Lead Cascade facility and the potential and planned locations of UF6 and other hazardous material inventories. However, no classified information was discussed at the meeting.

Discussion:

Prior to the introduction of the meeting participants, NRC staff indicated that it was in the process of developing a memorandum of understanding (MOU) with DOE to address regulatory oversight issues pertaining to the Lead Cascade facility. NRC staff indicated that both NRC and DOE considered the MOU to be near-final at the time of the meeting and that by September 5, 2003, a copy of the final draft would be provided to USEC and will be made publically available in ADAMS. USEC was informed that the turnaround time for any comments on the MOU would be short, as the NRC and DOE were endeavoring to finalize the MOU within the next month or so. DOE also made an introduction statement. In it, DOE indicated that it anticipated the regulatory oversight transition between DOE and NRC concerning the Lead Cascade to be smooth, as was the case for the gaseous diffusion plants.

Following the introductions, USEC provided an overview of its gas centrifuge uranium enrichment program which involves three phases: (1) centrifuge testing in Oak Ridge Tennessee; (2) Lead Cascade project in Piketon, Ohio; and (3) commercial plant to be built and operated in Piketon, Ohio, or Paducah, Kentucky. USEC then presented the milestones and status of the three centrifuge deployment program phases. USEC indicated that the purpose of the Lead Cascade was to provide reliability, performance, and economics data and minimize technical, cost, and regulatory risks for its commercial plant. USEC emphasized that the Lead Cascade application process would give it valuable 10 CFR Part 70 compliance experience, including experience in conducting an integrated safety analysis, which would make its commercial plant application process more efficient.

**Attachment 1**

USEC indicated that DOE should provide regulatory oversight of activities involving the removal of existing equipment and cleanup of the area in which the Lead Cascade will be located. However, USEC felt that in addition to providing Lead Cascade operational regulatory oversight after it posses UF6, the NRC should also provide primary oversight of the phases involving the Lead Cascade's equipment installation and initial plant operations prior to the possession and introduction to UF6. USEC identified these phases as refurbishment, installation, and the initial part of operations on slide 7 of its presentation (Attachment 2). For this to occur, USEC indicated that the NRC would need to issue the license at the time USEC leases the Lead Cascade facility from DOE.

After the meeting, the NRC and DOE conducted separate discussions and determined that since USEC's license would be a source material/special nuclear material (SNM) possession license, it would be appropriate for the DOE to be the primary regulator until USEC takes possession of the source material/SNM. As such, even though the NRC may issue a license to USEC by next February, DOE would still be the primary regulator from that time until USEC receives UF6 for the Lead Cascade which is anticipated to occur in mid-2005. However, both DOE and NRC agreed that to minimize dual regulation, prior to USEC taking possession of UF6, which is when the license would become effective, and after issuance of a license, the NRC would be solely responsible for determining the adequacy of the management measures, including quality control applied to items relied on for safety (IROFS), and other USEC activities addressed by NRC safety requirements as documented in USEC's Lead Cascade application.

USEC also generally identified on a building layout the areas within the existing Gas Centrifuge Enrichment Plant (GCEP) buildings where Lead Cascade cleanup, refurbishment, and operations would be conducted. The NRC staff requested additional details concerning the needed actions for the pre-operational phases. USEC indicated that it would provide a detailed plan with the requested information by September 19, 2003. USEC indicated that this document would need to be withheld from the public, as it would contain specific information on the hazardous material locations and schedule of the various activities.

USEC then discussed specific regulatory oversight aspects for the Lead Cascade concerning security and DOE's and NRC's regulatory oversight activities. USEC concluded by stating that NRC's regulation of the Lead Cascade should be similar to its Commercial Plant and any other plant licensed under 10 CFR Part 70, and that GCEP cleanup should be under DOE oversight.

NRC Action Items:

Provide draft MOU to USEC.

## Attendee List

| Name | Organization |
|---|---|
| Peter J. Miner | USEC |
| Trent Wertz | USEC |
| Jim Morgan | USEC |
| Brian Smith | NRC |
| Norma Garcia-Santos | NRC |
| Joseph Holonich | NRC |
| Tim Johnson | NRC |
| J. Dale Jackson | DOE |
| Yawar Faraz | NRC |
| Douglas Collins | NRC |
| Leigh Trocine | NRC |
| Dennis Scott | USEC |
| Randall DeVault | DOE |
| Jim Hutson | DOE |
| Jay Henson | NRC RGN II |
| David Mardis | DOE |
| Jim Lieberman | NRC |
| Mark Lombard | USEC |
| Rebecca Carroll | USEC |
| Luis Reyes | NRC |

**Attachment 2**

| Name | Organization |
|---|---|
| Steve Toelle | USEC |
| Mario Robles | USEC |
| Dan Stout | USEC |
| Terri Slack | DOE |
| Rick Coriell | USEC |
| Mark Smith | USEC |
| William Syzmanski | DOE |

# Regulatory Oversight

## for the

## American Centrifuge Lead Cascade Facility


**NRC Headquarters**
**Rockville, Maryland**
**August 27, 2003**

Attachment 3

# Purpose of Meeting

***"To obtain a clear understanding amongst DOE, NRC, and USEC regarding roles and responsibilities throughout the various phases of the Lead Cascade project"***

# Agenda

- **American Centrifuge Program**
  - Overview, Milestones, Status
- **Lead Cascade**
  - Scope, Project Phases, Schedule of Activities, Leased Areas
- **Regulatory Oversight Issues**
  - Security Oversight
  - GCEP Cleanup Oversight
  - Lead Cascade Oversight
- **Conclusions**

# American Centrifuge Program Overview

**GCEP Facility Turnover**

– ***DOE oversight (under ROA)***

**Centrifuge Testing**

- Engineering & manufacturing (CTC facility)
- Initial component and centrifuge testing (K-1600)
- ***DOE oversight under Work Smart Standards***

**Lead Cascade**

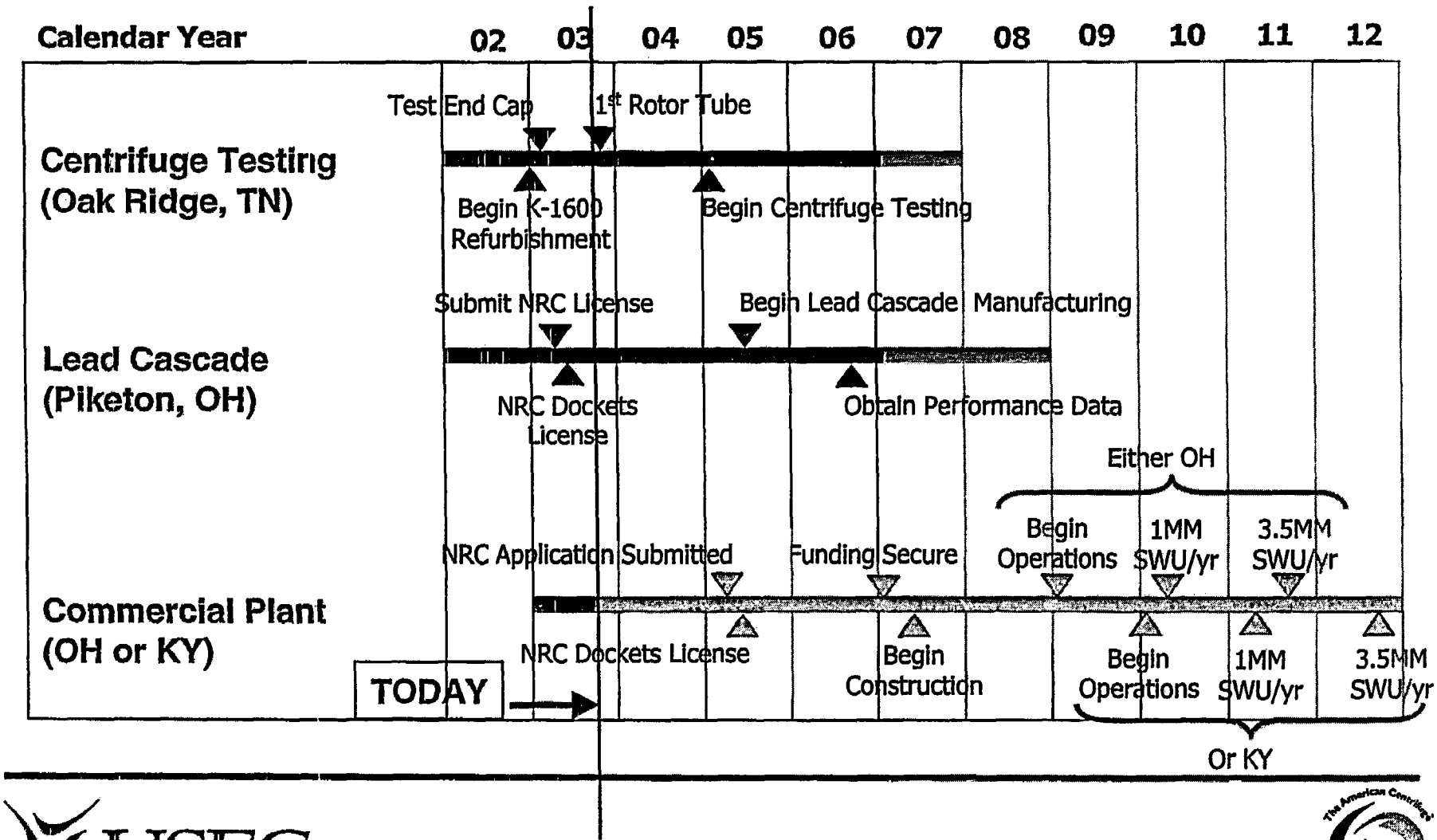
- Multi-machine operation (cascade)
- Basic building block of Commercial Plant
- ***NRC oversight under Part 70***

**Commercial Plant**

- Initial capacity of 3.5 million SWU that enables replacement of higher cost of production supply
- ***NRC oversight under Part 70***

USEC
A Global Energy Company

# Program Milestones



**NOTE**

**THIS SLIDE CONTAINS**

**USEC PROPRIETARY INFORMATION**

# Lead Cascade Scope

- **Designed to provide information and minimize risks for Commercial Plant deployment**
  - Reliability, performance, and economics data
  - Technical, cost and **regulatory** risk

- **Licensing features**
  - Install and operate up to 240 machines in recycle mode
  - Possess up to 250 kg $UF_6$
  - Enrich $UF_6$ and withdraw samples up to 10 wt.% U-235
  - Lease GCEP areas from DOE
  - Leverage existing GDP personnel and programs

- **GCEP facility turnover activities are outside scope of License Application**

# Lead Cascade Project Phases

- **Turnover**
  - GCEP facility cleanup; removal of DOE waste and installed equipment
  - DOE oversight
- **Refurbishment**
  - Upgrade facility infrastructure; performed after receipt of license
  - NRC oversight
- **Installation**
  - Install and checkout centrifuges and support systems and equipment
  - NRC oversight
- **Operations**
  - NRC Management Measures Verification and Operational Readiness Reviews
  - Introduce licensed materials
  - Run machines on process gas
  - NRC oversight

**NOTE**

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**USEC PROPRIETARY INFORMATION**

**NOTE**

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# Security (1 of 2)

- **As outlined in 10 CFR 70, the following NRC regulatory requirements apply to the Lead Cascade:**

  **10 CFR 70.22(k)** Application must include a physical security plan that demonstrates how the applicant plans to meet the pertinent requirements of **10 CFR 73.67**

  **10 CFR 70.22(m)** Application must include a full description of the security program to protect against theft, and unauthorized viewing of classified enrichment equipment, and unauthorized disclosure of classified matter in accordance with **10 CFR 95**

- **As part of License Application, USEC developed Lead Cascade Security Program to comply with 10CFR 70, including physical security and classified matter protection plan in accordance with the pertinent requirements of 10 CFR 73.67 and 95**

- **NRC has reviewed the Lead Cascade Security Program and provided comments, and USEC has provided responses**

# Security (2 of 2)

- **The security regulatory requirements applicable to the Lead Cascade are the same as to those for the GDPs**

  **10 CFR 76.60(h) and (i)** – The Corporation shall comply with provision for physical security and material control and accounting contained in the pertinent provisions of **10 CFR 73 and 95.**

- **USEC has three other sites (ATEF, HQ, and Speedring) that are also regulated to 10 CFR 95 for control of classified matter**

# DOE Oversight

- **GCEP Facility Turnover Activities**
  - US Enrichment Corporation may perform GCEP cleanup and centrifuge removal activities in leased space
  - Same "leased-not certified" approach successfully used in past
  - Activities outside of License Application
  - Uses existing programs and procedures as approved by DOE under the Regulatory Oversight Agreement (ROA) like the temporary conversion of the X-705 facility

# NRC Oversight

- **Refurbishment, Installation, and Operation Phases**
  - Activities planned after NRC license
  - Activities are consistent with environmental assessment
  - License would be effective upon issuance with conditions restricting the introduction of nuclear materials until NRC reviews are complete
  - Activities would be subject to NRC observation, inspection and enforcement
  - Activities would apply standards consistent with license, license conditions and regulatory commitments approved by NRC

# Conclusions

- NRC regulation of the Lead Cascade reduces Commercial Plant regulatory risk
- USEC believes that this objective is best achieved if regulatory oversight of the Lead Cascade is similar to the Commercial Plant
- USEC's license application and plans are based on being regulated to 10 CFR Part 70 as any other Part 70 applicant or licensee
- DOE oversight of GCEP cleanup activities is separate from and outside of the scope of the Part 70 license application