

April 12, 2001

Mr. J. Morris Brown
Vice President - Operations
United States Enrichment Corporation
Two Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: NRC PERFORMANCE REVIEW OF CERTIFIED ACTIVITIES - PADUCAH

Dear Mr. Brown:

The NRC, DOE, EPA, OSHA, and the State of Kentucky are co-regulators of the Paducah Gaseous Diffusion Plant (PGDP). Portions of PGDP subject to NRC regulation are described in the Atomic Energy Act as amended, Part 76 of Title 10 of the Code of Federal Regulations, and a Certificate of Compliance making the United States Enrichment Corporation (USEC) responsible for nuclear material safety and safeguards. NRC regulations require USEC to protect worker and public health and safety, protect the environment, and safeguard nuclear material. For areas under NRC jurisdiction, NRC inspects the GDP throughout the year and periodically conducts a review of USEC safety and safeguards related performance. USEC's performance is considered by NRC in determining the type, frequency, and focus of inspections to be conducted at the GDP.

NRC managers and staff from Region III and the Office of Nuclear Material Safety and Safeguards reviewed USEC's performance related to nuclear material safety and safeguards. NRC evaluated USEC performance during the period beginning October 1, 1998, and ending December 31, 2000. USEC performance was evaluated in five major areas: Safety Operations, Nuclear Material Safeguards, Radiological Controls, Facility Support, and Special Topics (includes engineering and certification activities).

USEC continues to conduct its activities safely and continues to safeguard nuclear material as determined during the review period. Performance in these areas has improved since our last review. The Enclosure outlines NRC's findings concerning USEC's strengths, areas warranting improvement, and challenges.

Strengths were noted in each of the five areas, and included your maintenance of an onsite fire department, immediate responses associated with abnormal conditions, controlling exposures and effluents to levels significantly below NRC regulatory limits, and the preparations made for non-routine or infrequent operations.

Program areas needing improvement were identified in four of the five areas, including managing the impact on safety of degrading fire protection equipment, attention to detail in implementing plant procedures, and identification of root causes for events and subsequent development of long term corrective actions to address those root causes.

In addition, a program area needing improvement involved the documentation and determination of nuclear criticality safety controls, including the selection and implementation of engineering controls as a preference to human controls, and the avoidance of conflicts in controls within nuclear criticality safety analyses when there are multiple analyses for the same activity, e.g., working on a component within a building may involve an analysis for the building and an analysis for the work.

Challenges were identified in the areas of Safety Operations and Nuclear Material Safeguards. While not discussed in each area, a generic challenge crossing all areas exists for USEC to assure a smooth transition while increasing the U-235 enrichment above 2.75 percent.

The NRC encourages continuing efforts to enhance the safety conscious work culture as evidenced by improvements reflected in USEC's Comprehensive Cultural Assessment Survey of employees. Those efforts warrant continued management attention to ensure that each individual manager is aware of their responsibility to foster a work environment which emphasizes safety and safeguards first and encourages individuals to identify safety and safeguards issues.

USEC's performance warrants NRC's core inspection program with additional inspection of nuclear criticality controls, problem identification and reporting, and fire protection. The core inspection program will focus on the areas warranting improvement as outlined in the enclosure.

The additional inspection of nuclear criticality controls will focus on measures to ensure that nuclear criticality risks are controlled to acceptable levels given the recent increase in assay authorization from 2.75 to 5.5 percent enrichment. The additional inspection of fire protection will focus on availability and reliability of fire protection equipment, with an emphasis on USEC managing the impact of aging equipment on safety. The additional inspection of your problem identification and reporting program will focus on USEC's self-identification, resolution, and correction of safety and safeguards related problems.

NRC will discuss the results of its review of USEC's safety and safeguards related performance at a meeting that is open to attendance by the public, workers, and other stakeholders. During the meeting, USEC is requested to discuss its views regarding Paducah's performance and NRC's review findings. The public meeting will be held on May 17, 2001, at 1:00 p.m. at the Information Age Park located in Paducah, Kentucky.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room or from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

J. Brown

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Questions and comments about NRC's review of USEC's performance should be referred to Mr. Monte Phillips, who can be reached at telephone (630) 829-9806 or by e-mail at MPP@NRC.GOV.

Sincerely,

/RA by J. Caldwell acting for/

J. E. Dyer
Regional Administrator

Docket No. 07007001
Certificate No. GDP-1

Enclosure: As stated

cc w/encl: H. Pulley, Paducah General Manager
L. L. Jackson, Paducah Regulatory Affairs Manager
P. D. Musser, Portsmouth General Manager
S. A. Toelle, Director, Nuclear Regulatory Affairs, USEC
Paducah Resident Inspector Office
Portsmouth Resident Inspector Office
R. M. DeVault, Regulatory Oversight Manager, DOE
W. D. Seaborg, Paducah Site Manager, DOE
J. Volpe, State Liaison Officer

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PADUCAH LICENSEE PERFORMANCE REVIEW FOR THE PERIOD OCTOBER 1, 1998, TO DECEMBER 31, 2000

1. SAFETY OPERATIONS (Comprised of Chemical Process Safety, Criticality Safety, Fire Protection, and Plant Operations)

Program Strengths

- Highly successful program to identify and trend Nuclear Criticality Safety (NCS) infractions and control failures
- Adequately staffed and equipped fire department located on site to respond to GDP fires
- Identification and immediate response to abnormal conditions
- Preparation for non-routine or infrequent operations

Program Areas Needing Improvement

- Resolution of conflicts between overlapping Nuclear Criticality Safety Analyses
- Selection and implementation of appropriate NCS controls
- Methodology for determining and documenting NCS basis, i.e. risks and controls for singly contingent accident scenarios
- Managing the impacts of degrading fire protection equipment on safety
- Attention to detail in implementing plant procedures
- Identification of root causes and long-term corrective actions to prevent recurrence of plant events

Projected Challenges to Performance

- Completion of activities involving process system interactions such that there is no adverse impact on safety
- Considerations resulting from increased enrichment

2. NUCLEAR MATERIAL SAFEGUARDS (Comprised of Material Control and Accounting and Physical Protection)

Program Strengths

- Nuclear Material Control and Accounting program (to detect loss, theft, and diversion) that exceeds NRC requirements for Category III Special Nuclear Material
- Physical protection of nuclear material exceeds NRC requirements for Category III Special Nuclear Material

Program Areas Needing Improvement

- Identifying and controlling classified material

Projected Challenges to Performance

- Accounting for and controlling Special Nuclear Material received from the DOE Material Storage Areas
- Declassifying material that is no longer required to be classified

3. RADIOLOGICAL CONTROLS (Composed of Radiation Protection, Environmental Protection, Waste Management, and Transportation)

Program Strengths

- Releases and exposures significantly below NRC regulatory limits
- Radiological and environmental protection controls exceed NRC requirements

Program Areas Needing Improvement

- None

Projected Challenges to Performance

- None

4. FACILITY SUPPORT (Composed of Maintenance/Surveillance, Management Organization and Controls, Training, Emergency Preparedness)

Program Strengths

- Site management team that is well informed about plant activities, uses performance indicators, and promptly responds to the information
- Attracted and retained experienced and qualified NCS engineering staff
- Emergency preparedness that exceeds NRC requirements for a fuel cycle facility
- Exercising emergency response plan and implementing lessons learned more frequently than required by NRC

Program Areas Needing Improvement

- Inter-departmental communications in conducting maintenance activities
- Identification and implementation of maintenance activities to ensure continued equipment reliability
- Safety conscience work environment

Projected Challenges to Performance

- None

5. SPECIAL TOPICS (Composed of General Engineering and Certification activities)

Program Strengths

- System engineering's identification of equipment anomalies
- Early communications with NRC to discuss issues prior to and during USEC-initiated requests for amendments of certificate

Program Areas Needing Improvement

- 10 CFR 76.68 evaluations to determine when NRC approval is required prior to modifications of risk controls
- Follow through in preparation of adequate nuclear criticality safety documentation, as identified during the High Assay Upgrade Project licensing review
- Timeliness and thoroughness of responses to requests for information related to licensing actions other than the High Assay Upgrade Project

Projected Challenges to Performance

- None