



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET SW SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

November 14, 2006

Mr. Russell B. Starkey, Jr.  
Vice President - Operations  
United States Enrichment Corporation  
Two Democracy Center  
6903 Rockledge Drive  
Bethesda, MD 20817

SUBJECT: LICENSEE PERFORMANCE REVIEW (LPR) OF CERTIFIED ACTIVITIES FOR  
THE PADUCAH GASEOUS DIFFUSION PLANT, DOCKET NUMBER 70-7001

Dear Mr. Starkey:

Managers and staff in our Region II office in Atlanta, Georgia, and the Office of Nuclear Material Safety and Safeguards (ONMSS) in Rockville, Maryland, completed a review of your performance in conducting NRC certified activities at the Paducah Gaseous Diffusion Plant. The review evaluated your performance during the period beginning September 26, 2004, and ending October 4, 2006. Paducah's performance was evaluated in four major areas: Safety Operations, Radiological Controls, Facility Support, and Special Topics. This letter and its enclosure provides to you the results of our review, and will be used as a basis for establishing the NRC oversight program for your conduct of certified activities during the next 24 months.

Paducah continued to conduct its activities safely as determined during the review period. An area needing improvement from the last assessment regarding nuclear criticality analysis and its documentation was adequately addressed by your staff during this period. In addition, we recognize that your staff has been effective in identifying issues regarding human performance, including adherence to procedures related to conduct of operations and maintenance. However, corrective actions to address those long-standing issues, which was an area identified needing improvement during the previous two periods, have not been effective in preventing recurring problems.

The results of our review will be discussed with you at your facility during a meeting open to the public on January 17, 2007. The area needing improvement is summarized in the enclosure to this letter. During the meeting, we expect you to discuss your view of your performance in the same major areas as the NRC evaluated. We ask you to specifically discuss why your corrective actions taken in response to previous licensee performance reviews to address long-standing issues regarding human performance have not been fully effective. In addition, please present how you will improve those practices in the future, and how you will monitor the effectiveness of the actions to be implemented.

In accordance with 10 CFR 2.390 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/reading-rm/adams.html> (the Public Electronic Reading Room).

Questions and comments about NRC's review of Paducah's performance should be referred to Mr. Jay Henson, who can be reached by telephone at 404-562-4731.

Sincerely,

*/RA/*

Douglas M. Collins, Director  
Division of Fuel Facility Inspection

Docket No. 70-7001  
Certificate No. GDP-1

Enclosure: Licensee Performance Review

cc w/encl: S. Penrod, Paducah General Manager  
S. R. Cowne, Manager, Nuclear Regulatory Affairs  
W. Jordan, Portsmouth General Manager  
S. A. Toelle, Director, Nuclear Regulatory Affairs, USEC  
R. M. DeVault, Regulatory Oversight Manager, DOE  
G. A. Newtown, Paducah Site Office, DOE  
Dewey Crawford, Department of Public Health, Commonwealth of Kentucky

R. B. Starkey Jr.

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Distribution w/encls:

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M. Thomas, RII  
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NAME	D. Hartland	J Henson	B. Pierson	L. SILVIOUS	J. Mundy		
DATE	11/14/2006	11/14/2006	11/13/2006	11/09/2006	11/09/2006		
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**LICENSEE PERFORMANCE REVIEW FOR PADUCAH**  
**ASSESSMENT PERIOD: September 26, 2004 to October 4, 2006**

The following is a summary of the performance of the Paducah Gaseous Diffusion Plant in the conduct of NRC certified activities.

**PERFORMANCE AREA: SAFETY OPERATIONS**

This area is comprised of chemical safety, nuclear criticality safety, plant operations, and fire safety.

**Program Areas Needing Improvement**

- No specific areas needing improvement were identified in Safety Operations.

**PERFORMANCE AREA: RADIOLOGICAL CONTROLS**

This area is comprised of radiation protection, environmental protection, waste management, and transportation.

**Program Areas Needing Improvement**

- No specific areas needing improvement were identified in Radiological Controls.

**PERFORMANCE AREA: FACILITY SUPPORT**

This area is comprised of maintenance and surveillance, training, emergency preparedness, and management organization and controls.

**Program Areas Needing Improvement**

- Effectiveness of corrective actions to address long-standing issues regarding human performance, including adherence to procedures related to conduct of operations and maintenance.

The certificatee identified two cylinders were heated that were filled above Technical Safety Requirements (TSR) and procedural weight limits. (Inspection Report (IR) 2004-008, Non Cited Violation (NCV))

The certificatee identified that equipment was operated without a procedure and maintenance was performed without instructions in a work package. (IR 2004-008, NCV)

Operators in a feed facility identified that they had inadvertently moved three cylinders containing fissile material during a Criticality Accident Alarm System outage. This action was not allowed by TSR 2.2.4.3. (IR 2005-001, NCV)

The inspectors identified failure to adequately implement the procedure for performing the inspection of the C-337A jet station barrier frame. (IR 2005-006, Severity Level IV violation)

The certificatee identified two TSR non-compliances. One involved an operator that mistakenly crossed a boundary without the required personal equipment during a planned Criticality Accident Alarm System outage. The other involved the failure to obtain an acceptable leak rate prior to disconnecting a pigtail. (IR 2005-009, Two NCVs)

During the inspection period, certificatee staff experienced four errors during preparation for and performance of maintenance activities that resulted in distraction to plant operators or unintended transients to plant equipment. (IR 2006-004)

## **PERFORMANCE AREA: SPECIAL TOPICS**

This area is comprised of safety licensing.

### **Program Areas Needing Improvement**

- No specific areas needing improvement were identified in Special Topi