



September 19, 2005  
GDP 05-0039

Mr. Jack R. Strosnider  
Director, Office of Nuclear Material Safety and Safeguards  
Attention: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**Paducah Gaseous Diffusion Plant (PGDP)  
Docket No. 70-7001, Certificate No. GDP-1  
Transmittal of Revision 97 to Paducah Certification Application**

Dear Mr. Strosnider:

In accordance with 10 CFR 76, the United States Enrichment Corporation (USEC) hereby submits six (6) copies of Revision 97 (September 16, 2005) to USEC-01, Application for United States Nuclear Regulatory Commission Certification, Paducah Gaseous Diffusion Plant.

Revision 97 incorporates Safety Analysis Report and Technical Safety Requirements changes that have been previously submitted for your review in accordance with 10 CFR 76.45 and approved in your letter dated September 6, 2005 (See the Reference) as Amendment 5 to Certificate of Compliance GDP-1. Revision bars are provided in the right-hand margin to identify changes. Revision 97 was implemented effective September 16, 2005.

Should you have any questions regarding this matter, please contact Mark Smith at (301) 564-3244. There are no new commitments contained in this submittal.

Sincerely,

Steven A. Toelle  
Director, Nuclear Regulatory Affairs

Mr. Jack R. Strosnider  
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Reference: Letter from Gary S. Janosko (NRC) to Russell Starkey (USEC), Amendment 5, Paducah Gaseous Diffusion Plant, Change to Safety Analysis Report Table 1-4 (TAC L52567) dated September 6, 2005.

Enclosures: 1. Oath and Affirmation  
2. USEC-01, Application for United States Nuclear Regulatory Commission Certification, Paducah Gaseous Diffusion Plant, Revision 97, Copy Numbers 1 through 6.

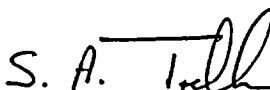
cc: G. Janosko, NRC HQ	(w/o)
J. Henson, NRC Region II	USEC-01, Copy Numbers 442, 664
B. Bartlett, NRC Senior Resident Inspector - PGDP	USEC-01, Copy Number 697
R. DeVault (DOE)	USEC-01, Copy Numbers 641- 644
D. Martin, NRC Project Manager – PGDP	(w/o)
D. Hartland, NRC Region II	(w/o)

**Enclosure 1**  
**GDP 05-0039**

**Oath and Affirmation**

## OATH AND AFFIRMATION

I, Steven A. Toelle, swear and affirm that I am the Director, Nuclear Regulatory Affairs of the United States Enrichment Corporation (USEC), that I am authorized by USEC to sign and file with the Nuclear Regulatory Commission Revision 97 (September 16, 2005) to USEC-01, Application for United States Nuclear Regulatory Commission Certification, Paducah Gaseous Diffusion Plant, as described in USEC Letter GDP 05-0039, that I am familiar with the contents thereof, and that the statements made and matters set forth therein are true and correct to the best of my knowledge, information, and belief.



Steven A. Toelle

On this 19th day of September, 2005, the person signing above personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof I hereunto set my hand and official seal.



Robin D. Johnson, Notary Public  
State of Maryland, Montgomery County  
My commission expires June 1, 2006

Enclosure 2 to  
GDP 05-0039

USEC-01  
Application for the United States  
Nuclear Regulatory Commission Certification  
Paducah Gaseous Diffusion Plant  
Revision 97 (September 16, 2005)

APPLICATION FOR UNITED STATES  
 NUCLEAR REGULATORY COMMISSION CERTIFICATION  
 PADUCAH GASEOUS DIFFUSION PLANT  
 REMOVAL/INSERTION INSTRUCTIONS  
 September 16, 2005 - REVISION 97

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TSR 2.3 2.3-21	TSR 2.3 2.3-21

Reviewed for Classification and UCNI by:

John W. Salvador #4530 9/14/05  
 (Derivative Classifier) (Number) (Date)  
Regulatory Engineer 28-890  
 (Title) (Organization)

Derived From: CG-PGD-5 (12/95) + TG-PGD-1 (8/96)  
 (Source Document or Classification Guide and Date Guide)

**UNCLASSIFIED - NOT UCNI**

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Table 1 - 3. Possession limits for NRC regulated materials and substances.

Type of Material	Atomic Number	Physical Form	Chemical Form	Possession Limit	Description
	<sup>99</sup> Tc 43	Any	Any	100 μCi in addition to that quantity remaining as a consequence of the historical feed of recycled uranium	Process contaminants and wastes, material held in equipment from previous operations Samples for analysis <sup>d, e</sup> Instrument calibration material
	93, 95-100	Any	Any	100 μCi in addition to that quantity remaining as a consequence of the historical feed of recycled uranium	Instrument check sources Process contaminants and wastes, material held in facilities and equipment from previous operations Samples for analysis <sup>d, e</sup> Instrument calibration material
E. Neutron Sources	241 Am-Be <sup>d</sup>	Solid	Metal Oxides	500 mCi	Instrument check sources Instrument calibration source
	<sup>252</sup> Cf	Solid	Metal Oxides	100 mCi	Soil density and moisture meter UF <sub>6</sub> assay and flow instrumentation

- a. Metric tons uranium
- b. See 10 CFR 76 definitions, Plutonium, Uranium 233, Uranium enriched in isotope 233 or in the isotope 235 and any other material that the Commission, pursuant to the provisions of Section 51 of the Act, determines to be nuclear material, but does not include source material or any material artificially enriched in the foregoing but does not include source material.
- c. Uranium to be fed to the cascade will meet the requirements of ASTM Standard C996, "Standard Specification for Uranium Hexafluoride Enriched to Less Than 5% <sup>235</sup>U," or ASTM Standard C787, "Standard Specification for Uranium Hexafluoride for Enrichment," for reprocessed UF<sub>6</sub>. All other uranium that does not meet the requirements of ASTM C996 or C787 for reprocessed UF<sub>6</sub> may be accepted by USEC for storage and subsequent dispositioning but will not be introduced to the cascade, with the exception of small amounts (e.g., 50 pounds of UF<sub>6</sub>) associated with sampling, subsampling, and analyses required to establish receiver's values.
- d. Includes analysis of DOE collected samples of groundwater, surface water, soils, biota, scrap, etc. in support of the site remediation effort. All samples are directly related to previous uranium enrichment operations and are needed to support the eventual decontamination and decommissioning of the site.
- e. Excludes environmental low-level blind control samples from offsite companies for performance evaluation of laboratory operations.

Table 1-4. Authorized uses of NRC-regulated materials.

Material Type	Authorized Use
A. Source Material, Element 92 <sup>b</sup>	<ol style="list-style-type: none"> <li>1. Heating cylinders and feeding contents into the diffusion process.</li> <li>2. Enrichment of uranium up to 5.5 percent enrichment by weight <sup>235</sup>U.</li> <li>3. Receipt, storage, inspection, and acceptance sampling of cylinders containing natural or recycled uranium, and uranium depleted in <sup>235</sup>U generated from domestic gaseous diffusion plant operations.</li> <li>4. Filling, assay, storage, and shipment of cylinders with natural uranium and uranium depleted in <sup>235</sup>U.</li> <li>5. Cleaning and inspection of cylinders used for the storage and transport of process feed, product, and tails containing source or special nuclear material</li> <li>6. Storage of process wastes containing uranium, transuranic elements, and other contaminants and decay products</li> <li>7. Process, characterize, package, ship, or store low-level radioactive and mixed wastes</li> <li>8. Radiation protection, process control and environmental sample collection, analysis, instrument calibration and operation checks</li> <li>9. Maintenance, repair, and replacement of process equipment</li> <li>10. Process Control Laboratory analysis and testing</li> <li>11. Cold feeding<sup>a</sup></li> <li>12. Transfer between cylinders</li> <li>13. Receipt, storage, inspection, and acceptance sampling of two cylinders containing depleted uranium hexafluoride (UF<sub>6</sub>) from the former Starmet CMI site.</li> <li>14. Receipt, storage, inspection, acceptance sampling and enrichment of one cylinder containing depleted uranium derived from four off-specification cylinders transferred from DOE to USEC.</li> </ol>
B. Source Material, Element 90	<ol style="list-style-type: none"> <li>1. Calibration and use of portable health physics and fixed laboratory equipment</li> <li>2. Process Control Laboratory analysis and testing</li> <li>3. Process, characterize, package, ship, or store low level radioactive and mixed wastes</li> </ol>

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**SECTION 2.2 SPECIFIC TSRS FOR UF<sub>6</sub> FEED FACILITIES (C-333-A AND C-337-A)**

**2.2.4 GENERAL LIMITING CONDITIONS FOR OPERATION**

**2.2.4.3 CRITICALITY ACCIDENT ALARM SYSTEM (continued)**

**LCO 2.2.4.3b:** Criticality accident alarm shall be operable (audible).

**APPLICABILITY:** In areas where the maximum foreseeable absorbed dose in free air exceeds 12 rad, except areas in permit-required confined spaces. This LCO is applicable when the new criticality accident alarm system supplied by air accumulators is operable.

**ACTIONS:**

Condition	Required Action	Completion Time
A. Area does not have an audible criticality accident alarm.	A.1 Implement the following for areas, equipment, or processes where a criticality accident could result in a maximum foreseeable dose exceeding 12 rad in the area of inaudibility and LCO 2.2.4.3a or 2.4.4.2a applies.	Immediately
	A.1.1 Discontinue movement of cylinders containing UF <sub>6</sub> enriched to ≥ 1 wt % <sup>235</sup> U.	
	A.1.2 Cylinder processing with UF <sub>6</sub> enriched to ≥ 1 wt % <sup>235</sup> U will be discontinued. [In-progress cylinder operating cycle(s) may be completed, stopped and/or re-started as necessary, as long as the in-progress autoclave(s) remain in Mode 5. However, these autoclaves may be placed in Mode 2 at any time.]	
	A.1.3 Perform Required Actions A.1.1 through A.1.6 of TSR 2.4.4.2b.	
	A.1.4 Discontinue movement of uranium enriched to ≥ 1 wt % <sup>235</sup> U.	Immediately
	A.2.1 Evacuate area of inaudibility applicable to this LCO.	
	A.2.2 Restrict access to area evacuated in A.2.1.	
A.3 Provide personnel allowed into the area that would be restricted under Action A.2.1 with an alternate means of criticality alarm notification, such as a device that will alarm on sensing a 10 mr/hr dose rate, or a radio in constant communication with the Central Control Facility.	Immediately	
B. Area does not have an audible criticality accident alarm.	B.1 Restore criticality accident alarm to operable status.  TSR 1.6.2.2d is not applicable.	Prior to reinitiating activities

**SECTION 2.3 SPECIFIC TSRS FOR PRODUCT AND TAILS WITHDRAWAL FACILITIES**

**2.3.4 GENERAL LIMITING CONDITIONS FOR OPERATION**

**2.3.4.7 CRITICALITY ACCIDENT ALARM SYSTEM (continued)**

**LCO 2.3.4.7b:** Criticality accident alarm shall be operable (audible).

**APPLICABILITY:** In areas where the maximum foreseeable absorbed dose in free air exceeds 12 rad, except areas in permit-required confined spaces. This LCO is applicable when the new criticality accident alarm system supplied by air accumulators is operable.

**ACTIONS:**

Condition	Required Action	Completion Time	
A. Area does not have an audible criticality accident alarm.	A.1 Implement the following for areas, equipment, or processes where a criticality accident could result in a maximum foreseeable dose exceeding 12 rad in the area of inaudibility and LCO 2.3.4.7a applies.	Immediately	
	A.1.1 Discontinue movement of cylinders containing UF <sub>6</sub> enriched to ≥1 wt % <sup>235</sup> U. <u>AND</u>		
	A.1.2 NaF traps containing uranium enriched to ≥1 wt % <sup>235</sup> U shall not be handled. <u>AND</u>		
	A.1.3 Waste containing uranium enriched to ≥1 wt % <sup>235</sup> U shall not be transported. <u>AND</u>		
	A.1.4 Discontinue maintenance activities that require breach of containment of equipment containing uranium enriched to ≥ 1 wt % <sup>235</sup> U. <u>AND</u>		
	A.1.5 Cylinder Filling with UF <sub>6</sub> enriched to ≥ 1 wt % <sup>235</sup> U will be discontinued. [In-progress cylinder filling cycle(s) may be completed, stopped, and/or re-started as necessary. Normal operation of withdrawal compressors, condensers, and accumulators is not restricted by this action.] <u>AND</u>		
	A.1.6 Perform Required Actions A.1.1, A.1.2, A.1.3, A.1.4, A.2.1, A.2.2, A.3, B.1 of TSR 2.4.4.2b. <u>AND</u>		
	A.2.1 Evacuate area of inaudibility <u>AND</u>		Immediately
	A.2.2 Restrict access to the area of inaudibility. <u>AND</u>		
	A.3 Provide personnel allowed to enter the area of inaudibility with an alternate means of criticality alarm notification such as a device that will alarm on sensing a 10mr/hr dose rate, or a radio in constant communication with the Central Control Facility.		Immediately
B. Area does not have an audible criticality accident alarm.	B.1 Restore criticality accident alarm to operable status.	48 hours (effective when NRC assumes regulatory authority)	
	TSR 1.6.2.2d is not applicable.		