

DOCKET NUMBER: 70-7001

CERTIFICATE HOLDER: United States Enrichment Corporation
Paducah Gaseous Diffusion Plant
Paducah, Kentucky

SUBJECT: COMPLIANCE EVALUATION REPORT FOR RECERTIFICATION
OF THE PADUCAH GASEOUS DIFFUSION PLANT

1 BACKGROUND

This report documents the United States Nuclear Regulatory Commission (NRC) staff Compliance Evaluation Report (CER) of the U.S. Enrichment Corporation (USEC) certification application for renewal of the Certificate of Compliance (COC), for the Paducah Gaseous Diffusion Plant (Paducah GDP), located in Paducah, KY. The Paducah GDP has a certificate allowing them to enrich natural uranium to a maximum of 5.5 weight percent (wt %) U-235, by the gaseous diffusion method.

On April 10, 2008, NRC received the application for renewal of the Paducah GDP Certificate (ML081070229). The application does not contain any changes to the existing documentation; USEC incorporates, by reference, all previous applications, statements, and reports into the renewal application. The application is based on USEC's initial application (through Revision 112¹), dated August 11, 2008, and USEC's Compliance Plan, as revised through Revision 9, dated December 1, 2000.

The renewal request is for a 5-year period and consisted of a reference to, and reliance on the existing: (1) Safety Analysis Report (SAR); (2) Technical Safety Requirements (TSRs); (3) Emergency Plan; (4) Quality Assurance Program; (5) Environmental Compliance Status Report; (6) Fundamental Nuclear Material Control Plan; (7) Security Program (encompassing a Physical Security Plan, a Transportation Security Plan, and a Classified Matter Security Plan); (8) Radioactive Waste Management Program; (9) Supplemental Environmental Information; and (10) Compliance Plan. The application for certificate renewal also includes reliance on the revised Depleted Uranium Management Plan, and Decommissioning Funding Program which were approved separately, by letter to USEC, dated June 16, 2008 (ML081560275).

The application and all nonproprietary, non-sensitive, and unclassified supporting documents are available electronically, for public inspection, in the NRC Public Document Room in Rockville, Maryland, or from the Publicly Available Records component of NRC's Agency Wide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

As part of the staff's consideration of the renewal application, a public comment period was provided. Notice appeared in the Federal Register (73FR26152) on May 08, 2008, providing a 30-day public comment period which expired June 9, 2008. In addition to the Federal Register Notice, a public meeting was held in Paducah, Kentucky, on May 12, 2008. The meeting transcript is available in ADAMS (ML081410602). There were no specific comments on the recertification application and no written comments were received.

¹ One revision has been received and incorporated into this review since the renewal request was received. The April 10, 2008 application referenced revision 111, however, the certification documents will reference revision 112.

This CER documents the staff effort to ensure that USEC has submitted all of the required information necessary to meet the requirements for renewal of the Certificate under 10 CFR 76.36 (a) (b) (c) & (d).

2 CERTIFICATION AND REGULATORY HISTORY

On September 16, 1996, the Director, Office of Nuclear Material Safety and Safeguards (NMSS), signed the Director's Decision on initial certification of the GDPs. Notice of this Decision appeared in the **Federal Register** (61FR49360) on September 19, 1996. The staff received several petitions requesting Commission review of the Decision. The Commission issued its decision in Memorandum and Order (CLI-96-12) on November 22, 1996. The Commission denied the petitions, allowing the certification to go forward.

On November 29, 2003, the Director, NMSS, last signed the Director's Decision approving renewed certification of the GDPs. Notice of this Decision appeared in the **Federal Register** (69FR384) on January 5, 2004. On December 31, 2003, NRC issued renewed COC GDP-1 for the Paducah GDP, with an expiration date of December 31, 2008.

That renewal action was based on review of USEC's renewal application, dated April 11, 2003, as documented in the staff's CER issued with the renewed certificate. That CER documents pertinent certification history, before the issuance of the renewed certificate, which is not repeated here. Further information on past renewals is covered in Section 3.2 below.

On November 5, 2004, NRC Order EA-04-191 was issued imposing requirements on licensees and certificate holders for the protection of certain safeguards information categorized as Safeguards Information Modified Handling. In a letter dated November 24, 2004, (ML082830046) USEC responded to the Order consenting to the requirements.

On January 27, 2005, NRC Order EA-04-123 was issued. That confirmatory Order addresses commitments associated with employee protections training and applied only to the Paducah GDP. It was issued to confirm certain commitments involving training related to employee protection. USEC responded in a letter (ML052230078) dated July 28, 2005, providing a summary of actions taken to come into compliance. The Order was discussed during an Alternative Dispute Resolution session and, subject to satisfactory completion of the commitments, the NRC did not pursue further enforcement action on this issue.

On April 30, 2007, NRC Order EA-07-087 was issued imposing fingerprinting and criminal history records check requirements for unescorted access to radioactive material or other property. This Order applies to both the Paducah and Portsmouth GDPs. As required by the Order, on July 2, 2007, USEC responded consenting to the requirements and providing nominee(s) as reviewing officials. On August 7, 2007, (ML072120243) NRC acknowledged their submission and accepted their nominee, stating that they were authorized to serve as USEC reviewing officials.

During the past 5 years, the Paducah GDP has requested and was granted 12 amendments to its COC. The majorities of these requests were administrative in nature and were required because they changed commitments within the TSRs or other licensing documents; however, one of note was required when the facility wanted to start operating at the top of its power range. During this period, some parts of the facility that had been operating at sub-atmospheric pressure would be pressurized and therefore, safety equipment required for above-atmospheric operations needed to be installed.

3.0 STAFF EVALUATION

There are no guidance documents available for the recertification of the GDPs. Therefore, staff has relied upon the Regulations and Statements of Consideration in evaluating the application.

3.1 Timeliness and Content of Application

The request for renewal of the COC for the Paducah GDP dated April 10, 2008, was received by the staff prior to April 15, 2008. On April 15, 2008, the staff determined that the application contained the information as required by 10 CFR 76.33, and was accepted for NRC review. The regulatory requirement is that the application be received before April 15, of the year specified. In this case the year is 2008. Therefore, the staff has concluded that the applicable requirements of 10 CFR 76.36(a) have been met.

3.2 Reliance on Previous Application Information

USEC is relying on information provided in the previously-reviewed and approved certification documents. As stated in the application for renewal, USEC has not proposed to make any new changes to the existing certificate conditions, technical safety requirements, or other previously approved documents.²

NRC issued the initial COC (GDP-1) for the Paducah GDP for a period of two years on November 26, 2006, and assumed regulatory jurisdiction over the Paducah GDP on March 3, 1997. The Director of NMSS renewed the Certificates, for the first time, in 1998 for a period of 5 years. The 2003 renewal, published December 29, 2003, is available in ADAMS (ML033440612). Thus, the staff has three times reviewed and found acceptable the information in the previous application submittals. Therefore, the staff concludes that, because certificate conditions have not changed, the approvals already reached and documented within those determinations remain valid. All current exemptions will remain in place (see Section 3.5 below).

3.3 Changes Made by the Paducah GDP Under 10 CFR 76.68

USEC's is allowed to make changes to licensing documents as long as they are evaluated under the provisions of 10 CFR 76.68. The evaluations are documented in records that are maintained in accordance with plant procedures and are available for inspection at the facility. The changes are submitted to NRC on at least an annual basis, as part of the continuous update of the SAR.

As part of the recertification review, and to meet the requirements of 10 CFR 76.36 (c) (2), staff must ensure that the cumulative effect of the 10 CFR 76.68 changes, when taken as a whole, and in consideration of the changes approved by NRC staff under 10 CFR 76.45, have not degraded the safety basis for the Paducah GDP.

² An exception as noted in the USEC application referenced a Certificate Amendment Request (GDP 08-0001) previously submitted to the NRC January 07, 2008, which involved a revision of X-326 Cell Treatment Monitoring Technical Safety Requirement and HEU/MEU Deposit Removal Project. However, this amendment (#9) was approved on May 30, 2008.

Through the staff's annual review, routine regional inspection activities, and the additional review conducted during certificate renewal (discussed below), the staff concludes that there is reasonable assurance that facility changes were appropriately made in accordance with the requirements of 10 CFR 76.68.

Further, the staff finds that USEC has incorporated all 10 CFR 76.68 changes, made since the previous recertification, into the appropriate certification documents per the requirements of 10 CFR 76.68(b).

Therefore, the staff finds that the regulatory approvals, already reached and documented during the review of the previous applications, remain valid and the changes made under 10 CFR 76.68, do not adversely affect previously approved certificate conditions or technical safety requirements.

A Memo from Michael Raddatz, to Thomas Hiltz, documenting the staff review of the 10 CFR 76.68 changes, made at the Paducah GDP is available in ADAMS (ML082770095).

3.4 Changes to Certificate Conditions or TSRs

For proposed changes that do not meet the 10 CFR 76.68 requirements, 10 CFR 76.45 requires that USEC obtain NRC approval before making the changes. Upon approval, the certificate is then amended. There have been a total of 12 amendments requested and approved by NRC since the certificate was last renewed in 2003. Appendix A contains a summary of the amendments.

For the purpose of recertification, and to meet the review requirements of 10 CFR 76.36(c)(2), staff must ensure that the cumulative effect of the amendments, when taken as a whole, and in consideration of the changes made under 10 CFR 76.68, have not degraded the safety basis for the Paducah GDP.

The staff has reviewed the amendments granted in the past 5 years and concluded that the certificate conditions and technical safety requirements as modified through the amendment process do now and will continue to protect public health and safety, and the common defense and security.

3.5 Exemptions

USEC has not requested any new exemptions as part of this renewal application. Three exemptions will remain in effect and be part of the renewed certificate, as discussed below.

1) Nuclear Materials Management and Safeguards System (NMMSS) -- On April 30, 1997 and November 21, 1997, the NRC exempted USEC from certain requirements of 10 CFR 74.13(a) regarding submitting reports of facility-generated inventory records reconciled with NMMSS-generated M-742 reports to the cognizant DOE field office, and allowed USEC to reconcile facility-generated inventory records with NMMSS-generated M-742 reports for the semiannual periods ending on March 31 and September 30 of each year.

The appropriate reporting guidance (NUREG/BR-0007) has been revised however, in a letter dated September 30, 2003 USEC contended that the system would still pose a significant

adverse regulatory burden without providing any apparent benefit. Therefore, USEC has requested a continuation of the exemption to 10 CFR 74.13(a). That request is still under review, and until the staff has made a decision, the current exemption will remain in effect.

2) 10 CFR Part 20 Requirements for Labeling Containers -- Section 20.1904 requires each container of radioactive material to be labeled such that the radionuclide(s), including their estimated quantities, radiation levels, enrichment, and forms, are identified. USEC states that it is impractical to label every container located in Radiation Areas. In November 1996, as part of the original certification, USEC was exempted from these requirements and instead, will continue to place one caution sign in the area stating that every container may contain radioactive material. In addition, USEC will continue to survey all containers removed from contaminated or potentially contaminated areas to ensure that contamination is not spread around the plant site.

The staff finds, with the exception of the exemption described above, that there have been no substantive changes to the Radiation Protection Program since the initial certification. On this basis, the staff concludes that the Radiation Protection Program remains acceptable and that these exemptions should be continued.

3) Written Reporting for Certain Events – On November 15, 2002, the NRC approved USEC's September 5, 2001, request for an exemption to the requirement in 10 CFR 76.120(d)(2) to submit written event reports within 30 days. USEC requested that such reports be submitted within 60 days, and stated that a 60-day period would allow greater time for completion of root cause investigations, and would result in fewer supplemental reports, thereby reducing regulatory burden for both USEC and the NRC.

The staff finds that there have been no substantive changes to the Event Reporting and Investigation Program since the initial certification. On this basis, the staff concludes that the Event Reporting and Investigation Program remain acceptable. Notice of this decision appeared in the Federal Register (67FR68699) on November 12, 2002.

4 OVERALL CONCLUSION

On completing the compliance evaluation of USEC's application as discussed above, staff concludes that there is reasonable assurance that the plant will continue to be operated such that public health and safety will be adequately protected, and that the common defense and security will not be endangered. Furthermore, the staff has determined that the application fulfills the requirements of 10 CFR Part 76. The staff recommends that USEC be issued a renewed Certificate of Compliance in accordance with the statements and representations contained in the Safety Analysis Report dated August 11, 2008, which includes the: Technical Safety Requirements, Quality Assurance Program, Emergency Plan, Environmental Compliance Status Report, Fundamental Nuclear Material control Plan, Transportation Protection Plan, Physical Protection Plan, Security Plan for Classified Mater, Radioactive Waste Management Program Description, USEC Funding Program for Depleted Uranium Disposition and Compliance Plan.

In order to update the certificate, the staff concludes that the following conditions will continue to be part of the certification (note that the first three conditions may be revised to reflect any amendments made by USEC, and separately reviewed and approved by staff, between the submittal of Revision 112 and the date of recertification):

- 1) The United States Enrichment Corporation shall conduct its operations in accordance with the statements and representations contained in the Certification Application through Revision 112, dated August 11, 2008, and in the Compliance Plan through Revision 9, dated December 1, 2000.
- 2) The United States Enrichment Corporation shall conduct its operations in accordance with the Technical Safety Requirements that are contained in Volume 4, Revision 112, dated August 11, 2008. Changes to the Technical Safety Requirements shall require NRC approval prior to implementation.
- 3) The United States Enrichment Corporation is hereby granted the special authorizations and exemptions in Chapter 1, Section 1.8 of the Safety Analysis Report, Revision 112.
- 4) If, at any time after the privatization date, the Corporation obtains information reasonably indicating changes described in the National Industrial Security Program Operating Manual, DOD 5520.22-M, January 1995 (NISPOM), Chapter 1, Section 3, 1-302(h), to the information previously submitted to the NRC, described in the NISPOM, Chapter 2, Section 3, 2-302b (1) through (11), the Corporation shall notify the NRC in writing within 15 days.
- 5) If the Corporation enters into negotiations for the proposed merger, acquisition, or takeover by a foreign person, the Corporation shall submit notification to the NRC, in writing, within 15 days of the commencement of such negotiations. The submission shall include the type of transaction under negotiation (stock purchase, asset purchase, etc.), the identity of the potential foreign person investor, a plan to negate foreign ownership, control, or domination, and copies of any related loan, purchase and shareholder agreements, annual reports, bylaws, articles of incorporation, partnership agreements, and reports filed with other federal agencies.
- 6) USEC, or its successors, as the Executive Agent for the United States for implementing the Russian HEU Agreement, shall notify the NRC in writing within 15 days, of any termination or material change in the provisions of the "Memorandum of Agreement Between the United States Acting By and Through the United States Department of State, and the United States Department of Energy and the United States Enrichment Corporation, for USEC to Serve as the United States Government's Executive Agent Under the Agreement Between the United States and the Russian Federation Concerning the Disposition of Highly Enriched Uranium Extracted from Nuclear Weapons," entered into as of April 18, 1997.
- 7) The United States Enrichment Corporation shall review the decommissioning cost estimates and associated funding levels in October of each year and adjust the estimates and funding levels as necessary. If USEC determines that the existing financial instruments do not adequately cover the adjusted decommissioning cost estimate, USEC shall submit financial instruments to cover the new cost estimates by December 31 of each year.
- 8) Notwithstanding the requirements of TSR 2.4.4.4, USEC shall use the safe mass curve in TSR 2.5 Appendix B, instead of the safe mass curve in TSR 2.4 Appendix B, for determining entry into TSR 2.4.4.4 Condition C. The combined mass of all deposits in the affected equipment shall be used in making this determination, if double batching is not considered.
- 9) Revisions of NCSE 041 and NCSA 310-003 that modify NCS controls for the Normetex pumps (i.e., the uranium to oil structural barrier, the High Oil Pressure Detection System (HOPDS) and HOPDS pump trip, and the weekly oil sampling program) shall be submitted to the NRC for review and approval prior to implementation.

PRINCIPAL CONTRIBUTOR

Michael Raddatz

Appendix A

Paducah GDP Amendment List

Amd . #	App. Doc. Amended	Subject	Application Date/s	Issuance Date	Effective Date
1	TSR	Cascade Equipment Assay Limitations	December 12, 2003 ML033530150	January 21, 2004 ML040270206	30 days from issue
2	TSR	Minimum Fire Service Staffing	September 19, 2003, and January 22, 2004 ML032790448 ML040300267	March 2, 2004	Issuance date
3	SAR	Table 1-4, allow receipt, inspection, storage, etc. for 2 cylinders of DU from Starmet CMI	June 18, 2004 ML041760307	June 30, 2004 ML041840319	June 30, 2004
4	TSR	TSR controls - C-337-A North crane	August 4, 2004 ML042380517	March 14 , 2005 ML050740030	April 14, 2005
5	SAR & TSR	SAR Table 1-4	June 17, 2005 ML051740350	September 6, 2005 ML052490193	September 6, 2005
6	TSR	TSR 2.2, Appendix A	December 13, 2005 ML060190087	February 24, 2006 ML060520576	30 days from issue
7	TSR	TSR Table 3.2.2.1	January 4, 2006 ML060090358	May 25, 2006 ML061440383	Issuance date
8	TSR	TSR 2.6.4.1	July 19,2006 ML062060316	July 27, 2006 ML062060454	Issuance date
9	TSR	TSR Table 3.2.2.1	June 23, 2006 ML061840148	August 3, 2006 ML062120758	Issuance date
10	LC-18	Temporary Security Modifications	February 14, 2007 Security Related	February 23, 2007 ML070520673	Issuance date
11	TSR	TSR Sections 1.0. 2.2, and 3.2.2	April 25, 2007 ML071230136	July 18, 2007 ML071860215	Issuance date
12	TSR	TSR Sections 2.4.4.1	July 5, 2007 ML071900208	August 9, 2007 ML072040325	30 days from issue