

DOCKET NUMBER: 70-7002

CERTIFICATE HOLDER: United States Enrichment Corporation  
Portsmouth Gaseous Diffusion Plant  
Piketon, Ohio

SUBJECT: COMPLIANCE EVALUATION REPORT FOR RECERTIFICATION  
OF THE PORTSMOUTH 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, for the Portsmouth Gaseous Diffusion Plant (Portsmouth GDP), located in Portsmouth, Ky. The Portsmouth GDP has a certificate allowing them to enrich natural uranium to a maximum of 10 weight percent (wt %) U<sup>235</sup>, by the gaseous diffusion method.

On April 10, 2008, (ML081070220) NRC received the application for renewal of the Portsmouth GDP\_Certificate. 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 91<sup>1</sup>), dated August 8, 2008, and USEC's Compliance Plan, as revised through Revision 11, dated January 31, 2003.

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 (EP); (4) Quality Assurance Program (QAP); (5) Environmental Compliance Status Report (ECSR); (6) Fundamental Nuclear Material Control Plan (FNMCP); (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 (CP). The application for certificate renewal also includes reliance on the revised Depleted Uranium Management Plan (DUP), and Decommissioning Funding Program (DFP) which were approved separately, by letter to USEC, dated June 16, 2008 (ML081560275).

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, the NRC held a public meeting in Piketon, Ohio, on June 10, 2008, which was well attended. The transcript is available via ADAMS Accession No. ML081710260. The overwhelming majority of comments received at the meeting were related to areas outside the scope of this renewal. Commenters discussed the American Centrifuge Plant (ACP) and several DOE activities that fell outside the scope of this renewal. The agency also received four written feedback forms from attendees at the meeting. Two of the commenters requested that

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<sup>1</sup> Two revisions have been received and incorporated into this review since the renewal request was received. The April 10, 2008 application referenced revision 89, however, the certification documents will reference revision 91.

the NRC provide a better sound system, and two commenters complimented the NRC staff for both its professionalism and patience with the attendees.

USEC ceased enrichment operations at the Portsmouth GDP in 2001. At that time, equipment sufficient to allow for a stand-alone enrichment capacity of 3 million SWU per year was placed in a “cold standby” activity condition. “Cold standby” is a process condition such that the 3-million Separative Work Unit (SWU) capacity could be re-established in approximately 18 months. In 2006, the U.S. Department of Energy (DOE) directed USEC to transition from a “cold standby” to a “cold shutdown” condition, with the ultimate goal of placing associated “cold standby” equipment in a more permanent shutdown condition and ceasing the surveillance and maintenance activities that were previously required.

Because of its passive nature, this process condition does not require continuous or frequent routine monitoring. The only remaining systems important to safety that will continue to be operable will be the criticality accident alarm system and the high-pressure fire water system. However, the Portsmouth GDP transfer facility continues to be used for processing out-of-specification UF6 and limited decommissioning activities.

The application and all nonproprietary, 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 the NRC’s ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

This Compliance Evaluation Report (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 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 Certificate of Compliance GDP-2 for the Portsmouth 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 (SGI-M). In a letter dated November 24, 2004, (ML082830046) USEC responded to the order consenting to the requirements.

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.

The NRC has approved eight amendments, requested by USEC and 1, an editorial fix initiated by Staff, for a total of 9, since last renewing the certificate in 2003. The staff evaluated each amendment and prepared a CER as part of the approval process. Appendix A, to this document, summarizes the amendments. None of the individual amendments resulted in either extensive physical changes to the facility or significant modifications to the procedures or documents that are relied upon for safety.

USEC did not submit any additional information in support of their current renewal application<sup>2</sup>. Instead, USEC stated that it was relying on the currently reviewed and approved safety basis. Based on the approved safety basis, the NRC's knowledge of the facility, and the documentation supporting the previous renewals, the staff has not conducted a new review of previously reviewed application documents, except as described below.

### **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 Certificate of Compliance for the Portsmouth GDP dated April 10, 2008, was received by 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 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.

NRC issued the initial Certificate of Compliance (GDP-2) for the Portsmouth GDP for a period of two years on November 26, 2006, and assumed regulatory jurisdiction over the Portsmouth GDP on March 3, 1997. The Director, 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

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<sup>2</sup> An exception is a USEC request for an amendment received August 8, 2008 for a change to the TSRs involving "On-Site Functional Staffing Requirements." This request is related to the transition to Cold-Shutdown and will be dispositioned outside the recertification process.

ADAMS (ML033440617). Thus staff has three times reviewed and found acceptable the information in 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 Portsmouth 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 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 Portsmouth GDP.

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 made at the Portsmouth GDP changes is available in ADAMS (ML082800308).

### 3.4 Changes to Certificate Conditions or Technical Safety Requirements

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 9 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 the changes made under 10 CFR 76.68, have not degraded the safety basis for the Portsmouth 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.

### 3.6 Other Requirements

Before its transition from DOE to NRC oversight, USEC leased the X-326 Building, which included equipment known as the HEU suspension cells (cells shut down after the U.S. Department of Defense suspended its contract). Those cells contain what USEC describes as “holdup material” (e.g., U235 of greater than 10 percent enrichment). As part of the original certification, the NRC, DOE, and USEC determined this to be acceptable, based on the assumption that the holdup material remained “inaccessible.” USEC would control the equipment, yet it would not own the material contained within. Specifically, the NRC would regulate the equipment, but DOE would own the material. Therefore, the holdup would not count against the USEC possession limits. If the holdup material became accessible (e.g., compressor cut out of the cascade), DOE would become both the regulator and the owner of the material.

DOE established the Caretaker Project to periodically monitor the shutdown cells to ensure that material is not being diverted. Since the NRC had a stake in this arrangement, it established a certificate condition to ensure that the holdup material did in fact remain inaccessible.

## 4 OVERALL CONCLUSION

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 8, 2008, which includes the: Technical Safety Requirements, dated August, 8 2008, which includes the: 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 between the submittal of Revision 91 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 91, dated August 8, 2008, and in the Compliance Plan through Revision 11 dated January 31, 2003.
- 2) The United States Enrichment Corporation shall conduct its operations in accordance with the Technical Safety Requirements that are contained in Volume 4, Revision 91 of the Application. 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 91.
- 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) The United States Enrichment Corporation (USEC) shall inform the U.S. Nuclear Regulatory Commission (NRC) in writing no less than 30 days before any planned reduction in the surveillance requirements of the Caretaker Project being conducted for the U.S. Department of Energy (DOE) for the installed shutdown and buffered cascade equipment in the X-326 Building. In addition, USEC shall inform the NRC in writing within 15 days of obtaining a result of a measurement, as part of the Caretaker Project, of a holdup quantity of uranium enriched in uranium-235 equal to or above 10 weight percent in installed equipment leased by USEC from DOE that is outside the measuring instrument's accuracy range.

## **PRINCIPAL CONTRIBUTOR**

Michael Raddatz

**Appendix A**  
Ports Amendment List

Amd. #	App. Doc. Amended	Subject	Application Date/s	Issuance Date	Effective Date
1	NA	Correction of administrative error	NA	February 23, 2004 <a href="#">ML040550432</a>	Issuance date
2	SAR, FNMCP	Approves, through step 5, non-standard cylinder procedures	February 26, 2004 <a href="#">ML040650507</a>	February 27, 2004 <a href="#">ML040641153</a>	Issuance date
3	SAR, FNMCP	Approves non-standard cylinder procedures for 4 DOE cylinders	February 26, 2004 <a href="#">ML040650507</a>	March 15, 2004 <a href="#">ML040780977</a>	Issuance date
4	TSR	TSR 3.1.4, TSR Table 3.2.2-1	February 1, 2006 <a href="#">ML060390338</a>	March 8, 2006 <a href="#">ML060650552</a>	20 days from issue
5	NA	One time DOE helicopter radiological survey	June 21, 2007 <a href="#">ML071780081</a>	July 13, 2007 <a href="#">ML071970450</a>	Issuance date
6	SAR	Physical Security and Classified Information Plan	May 22, 2007 <a href="#">ML071450205</a>	September 20, 2007 <a href="#">ML072890257</a>	Issuance date
7	SAR	Physical Security and Classified Information Plan	October 17, 2007 <a href="#">ML072920036</a>	November 2, 2007 <a href="#">ML073050011</a>	30 days from the approval of the ACP Security Plan
8	TSR	TSR Sections 2.7.3.5 Cell Treatment Monitoring	January 7, 2008 <a href="#">ML080090195</a>	May 30, 2008 <a href="#">ML081370454</a>	Issuance date
9	SAR	Addition of Cold Box to equipment description, and operating procedures	May 31, 2008 <a href="#">ML081630088</a>	August 06, 2008 <a href="#">ML081920101</a>	Issuance date