

March 14, 2005

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

SUBJECT: AMENDMENT 04 - PADUCAH GASEOUS DIFFUSION PLANT - CHANGE TO
TECHNICAL SAFETY REQUIREMENTS FOR THE C-337-A NORTH CRANE
(TAC NO. L52564)

Dear Mr. Starkey:

In accordance with your application dated August 4, 2004, and pursuant to Part 76 to Title 10 of the Code of Federal Regulations, Certificate of Compliance GDP-1 is hereby amended. Specifically, Technical Safety Requirement (TSR) surveillance requirement (SR) 2.2.5.2-5 is eliminated and is replaced with new TSR 2.2.5.5 for the C-337-A jet station barrier frame.

Accordingly, Condition 9 is revised to include the date of August 4, 2004.

All other conditions of Certificate of Compliance GDP-1 shall remain the same.

This amendment is effective 30 days from the date of this letter.

Enclosed are copies of the revised Certificate of Compliance and the staff's Compliance Evaluation Report that describes the basis for the staff's review and conclusion.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter 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). If there are any questions regarding this action, please contact the Project Manager, Dan E. Martin, by telephone at (301) 415-7254, or by email at dem1@nrc.gov.

Sincerely,

/RA/

Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket: 70-7001
Certificate: GDP-1
Amendment 04

Enclosures: 1. Compliance Evaluation Report
2. Certificate of Compliance GDP-1

cc: Steven A. Toelle, USEC-Headquarters
Randall M. DeVault, DOE-Oak Ridge
Steve Penrod, Paducah

R. Starkey

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Gary S. Janosko, Chief
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cc: Steven A. Toelle, USEC-Headquarters
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Steve Penrod, Paducah

Closes TAC NO. L52564

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Docket: 70-7001 NMSS r/f FCSS r/f MThomas , RII
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ENCLOSURE 1

Compliance Evaluation Report

DOCKET NUMBER: 70-7001

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

SUBJECT: COMPLIANCE EVALUATION REPORT: CERTIFICATE
AMENDMENT REQUEST DATED AUGUST 4, 2004, TECHNICAL
SAFETY REQUIREMENT CHANGES TO THE C-337-A FEED
FACILITY CRANE DESIGN FEATURES AT THE PADUCAH
GASEOUS DIFFUSION PLANT (TAC No. L52564)

PROPOSED CHANGE

The purpose of this request is to change the Technical Safety Requirements (TSRs) to reflect a change in the design requirements for safety controls for the C-337-A building North crane, at the Paducah Gaseous Diffusion Plant (PGDP), operated by the United States Enrichment Corporation (USEC). The changes proposed would substitute a protective steel barrier frame on the cylinder jet station, and other administrative controls, for an existing crane travel limit switch. This request was submitted by letter dated August 4, 2004, and supplemented by a response, dated February 4, 2005, to a U. S. Nuclear Regulatory Commission (NRC) Request for Additional Information dated December 7, 2004. The NRC's review and evaluation was based on this, the current certificate, the current Safety Analysis Report (SAR), and other supplementary information.

DISCUSSION

The current requirements specified in the PGDP TSRs for UF₆ feed facility C-337-A are intended to ensure that the UF₆ cylinder handling cranes are designed, operated, and maintained in a manner that would not lead to primary system integrity failure. The current requirements for inspection and testing in TSR 2.2.5.2 were intended to ensure that the system design is maintained. The system design is to prevent an accidental drop of a liquid UF₆ cylinder on another cylinder or other equipment, or other fault that might lead to a release of hazardous material. In this building C-337-A TSR, the crane travel limit switch is intended to prevent a crane from being positioned above or near the primary system boundary equipment, in this case the jet station. The current controls (crane travel limit switches) for the C-337-A North crane are designed to prevent an accident scenario whereby a mechanical or human error results in the impact of a UF₆ cylinder with the primary system. The current North crane travel limit switches prevent the crane bridge from approaching within 18.5 feet of the C-337-A jet station, in compliance with Occupational Safety and Health Administration (OSHA) Standard 1910.179¹ and American National Standards Institute (ANSI) B30.2-1990, Section 2-1.12.4.i.

¹The staff notes that OSHA stated in its interpretation dated March 4, 1991, that existing equipment constructed and installed prior to August 31, 1971, is not required to meet this specification. Cranes constructed prior to this date and later modernized are also exempted.

As a result of the location of the crane travel limit switch, the C-337-A North crane is prevented from accessing the two autoclaves that are closest to the cylinder jet stations. This operational limitation is a result of the North crane design. The C-337-A South crane is a newer design and does not have a drift that is as great as the North crane and, therefore, does not have the same operational restriction.

USEC is requesting this change to allow the PGDP to remove the operational restrictions on the C-337-A North crane that prevent the crane from accessing two autoclave positions. In its request, USEC removes the PGDP TSR 2.2.5.2 requirement for the crane travel limit switch and replaces it with a new surveillance requirement (SR) 2.2.5.5-1 and basis for the jet station barrier frame in C-337-A stating that the jet station barrier frame shall be inspected for structural defects every 5 years.

The staff has reviewed the PGDP SAR and discussion of the barrier frame analysis for the jet station. In addition to the August 4, 2004 request, the staff reviewed USEC's response, dated February 4, 2005, to the NRC's Request for Additional Information dated December 7, 2004. The NRC reviewed the analysis and concluded that it was adequate to bound the likely accident scenario and provide adequate assurance that the protective jet station frame would perform as designed. Although the frame would deflect and may receive permanent deformations when impacted by a 14-ton cylinder moving at the crane's highest rated speed, the frame would perform its intended function of preventing a primary system breach. The staff also reviewed the proposed SR for inspection of the jet station barrier frame and concluded, that if the procedure is used as described, the inspection will correctly identify problems with the barrier frame if they exist. USEC is also modifying SAR Section 3.15 to add the jet station barrier frame as a Q safety system.

In addition, the staff reviewed the operation of the crane for the proposed changes. The staff evaluated load drops in the event an operator attempted to lift a cylinder above the jet station. The NRC concluded that hoist speed is a small percentage of horizontal bridge or trolley speed and the analysis supporting this TSR change bounds this scenario. In addition, rigging procedures result in a load that is sufficiently distant from the crane trolley so that when it is in its most retracted position, the load will not clear the jet station. Other administrative controls (i. e., procedures, training, and experience) that prohibit movement of the North crane at maximum speed when near the jet station constitute additional preventative controls. If these administrative controls fail, the jet station barrier frame is designed to prevent damage to the jet station, thereby reducing the failure likelihood of jet station piping and preventing the accident. This hardware control alone is sufficient to prevent an accident, however, the defense-in-depth specified by the certificate holder has been reviewed and is found to provide additional assurance that the postulated accident will be prevented. The staff finds this approach to be acceptable.

ENVIRONMENTAL REVIEW

Approval of this amendment is subject to the categorical exclusion provided in 10 CFR 51.22(c)(19) and will not have a significant impact on the human environment. Therefore, in accordance with 10 CFR 51.22(b), neither an environmental assessment nor an environmental impact statement is required for the proposed action.

CONCLUSION

Based on its review and evaluation of the information provided by USEC in its CAR, dated August 4, 2004, as supplemented by its response to NRC's Request for Additional Information, dated February 4, 2005, the NRC staff finds that the revisions proposed for Paducah TSRs and associated TSR bases are acceptable, are in compliance with the requirements of 10 CFR Part 76, and should be approved.

Principal Contributor:

William C. Gleaves

ENCLOSURE 2

Certificate of Compliance

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE

FOR OPERATION OF GASEOUS DIFFUSION PLANTS

Pursuant to the Atomic Energy Act of 1954, as amended, Title II of the Energy Reorganization Act of 1974, as amended (88 Stat 1242), and Title 10, Code of Federal Regulations, Part 76, and in reliance on statements and representations heretofore made by the applicant, a certificate is hereby issued. This certificate is issued to certify that operation of the Gaseous Diffusion Plant identified in No. 5 below is in compliance with the standards set forth in Title 10 Code of Federal Regulations, Part 76, "Certification of Gaseous Diffusion Plants." This certificate shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

1. CERTIFICATE NUMBER GDP-1	2. AMENDMENT NUMBER 4	3. EXPIRATION DATE December 31, 2008
4. ISSUED TO (Name and Address) United States Enrichment Corporation 2 Democracy Center 6903 Rockledge Drive Bethesda, MD 20817	5. FACILITY AND LOCATION Paducah Gaseous Diffusion Plant Paducah, KY	6. DOCKET NUMBER 70-7001
7. CONDITIONS This certificate is conditional upon fulfilling the requirements of 10 CFR Part 76, as applicable, and the conditions below.		

8. The United States Enrichment Corporation (USEC or the Corporation) shall conduct its operations in accordance with the statements and representations contained in the Certification Application through Revision 84 dated November 3, 2003, and in the Compliance Plan through Revision 9 dated December 1, 2000, as modified by letter dated June 18, 2004.
9. The United States Enrichment Corporation shall conduct its operations in accordance with the Technical Safety Requirements that are contained in Volume 4, Revision 84 of the Application, dated November 3, 2003, as modified by letter dated December 12, 2003 (GDP 03-0066), approved by Amendment 1, letters dated September 23, 2003, and January 22, 2004, approved by Amendment 2, and letter dated August 4, 2004, approved by Amendment 4. Changes to the Technical Safety Requirements shall require NRC approval prior to implementation.
10. 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 84 dated November 3, 2003.
11. If, at any time after the privatization date, the Corporation obtains information reasonably indicating changes described in the National Industrial Security Program Operating

CERTIFICATE OF COMPLIANCE GDP-1

Certificate Number

SUPPLEMENTARY SHEET

70-7001

Docket Number

Manual, DOD 5520.22-M, January 1995 (NISPOM), Chapter 1, Section 3, 1-302(h), to the information previously submitted to NRC, described in the NISPOM, Chapter 2, Section 3, 2-302b.(1) through (11), the Corporation shall notify NRC in writing within 15 days.

12. If the Corporation enters into negotiations for the proposed merger, acquisition, or takeover by a foreign person, the Corporation shall submit notification to 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.
13. USEC, or its successors, as the Executive Agent for the United States for implementing the Russian HEU Agreement, shall notify 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.
14. 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 31st of each year.
15. 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.
16. Deleted.
17. Condition 16 was deleted based on NRC acceptance of the Nuclear Criticality Safety (NCS) controls for the Normetex product withdrawal pumps, relied on for double contingency, in NCSE 041, as provided to the NRC on June 28, 2002, and NCSA 310-003, as provided to the NRC on July 23, 2002, specifically the uranium to oil structural barrier, the High Oil Pressure Detection System (HOPDS) and HOPDS pump trip, and the weekly oil sampling program. Future revisions of NCSE 041 and NCSA 310-003 that modify these specific NCS controls for the Normetex pumps (i.e., the uranium to oil structural barrier, the HOPDS and HOPDS pump trip, and the weekly oil sampling program) shall be submitted to the NRC for review and approval prior to implementation.

CERTIFICATE OF COMPLIANCE GDP-1
Certificate Number

SUPPLEMENTARY SHEET 70-7001
Docket Number

FOR THE NUCLEAR REGULATORY COMMISSION

Date: March 14, 2005

By: /RA/
Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards
Washington, DC 20555



CERTIFICATE OF COMPLIANCE GDP-1

Certificate Number

SUPPLEMENTARY SHEET

70-7001

Docket Number

List of GDP-1 Amendments Since Last Renewal (December 29, 2003)

Amd. #	App. Doc. Amended	Subject	Application Date/s	Issuance Date	Effective Date
1	TSR	Cascade Equipment Assay Limitations	December 12, 2003	January 21, 2003	30 days from issue
2	TSR	Minimum Fire Service Staffing	September 19, 2003, and January 22, 2004	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	June 30, 2004	June 30, 2004
4	TSR	TSR controls - C-337-A North crane	August 4, 2004	March 14, 2005	April 14, 2005

