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June 16, 1997

Dr. Carl J. Paperiello
Director, Office of Nuclear Material
Safety and Safeguards
Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SERIAL: GDP 97-0093

Paducah Gaseous Diffusion Plant (PGDP)

Docket No. 70-7001

Certificate Amendment Request - TSR Section 3.11.1 - Nuclear Criticality Safety Program Elements

Dear Dr. Paperiello:

In accordance with 10 CFR Part 76.45, the United States Enrichment Corporation (USEC or Corporation) hereby submits a request for amendment to the certificate of compliance for the Paducah, Kentucky Gaseous Diffusion Plant (GDP). This certificate amendment request revises Technical Safety Requirement (TSR) 3.11.1 to reflect the addition of a new fourth bullet that identifies the following Criticality Safety Program element, "Identification of SSCs and support systems necessary to meet the double contingency principle."

The need for a revision to TSR 3.11.1 was identified in SAR Section 3.16.8, Identification of Nuclear Criticality Safety SSCs. A list of nuclear criticality safety structures, systems and components (SSCs) and associated support systems required to meet double contingency has been developed and is included in the facility specific Q, AQ-NCS and AQ System Boundary Definition Manuals (referenced in SAR Section 3.15.2.2, Nuclear Criticality Safety SSCs). Also, as required in SAR Section 3.16.8, TSR 3.11.1 is being revised to state that the NCS program will address the identification of SSCs and support systems necessary to meet double contingency.

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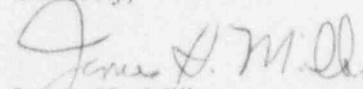


Dr. Carl J. Paperiello
June 16, 1997
GDP 97-0093 Page 2

Enclosure 1 to this letter provides a detailed description and justification for the proposed changes. Enclosure 2 is a copy of the revised TSR page and associated SAR pages that remove the completed commitment and reference where the list of SSCs for meeting double contingency can be located. Enclosure 3 contains the basis for USEC's determination that the proposed change associated with this certificate amendment request is not significant.

There are no commitments made in this letter. Any questions related to this subject should be directed to Ms. Lisamarie Jarriel at (301) 564-3247.

Sincerely,



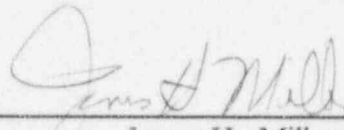
James H. Miller
Vice President, Production

Enclosures: As Stated

cc: NRC Region III Office
NRC Resident Inspector - PGDP
NRC Resident Inspector - PORTS
NRC Project Manager - PGDP

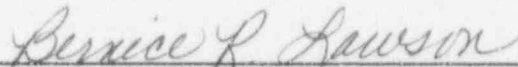
OATH AND AFFIRMATION

I, James H. Miller, swear and affirm that I am Vice President, Production, of the United States Enrichment Corporation (USEC), that I am authorized by USEC to sign and file with the Nuclear Regulatory Commission this Certificate Amendment Request for the Paducah Gaseous Diffusion Plant, 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.



James H. Miller

Subscribed to before me on this 16 day of June, 1997.



Notary Public

BERNICE R. LAWSON
NOTARY PUBLIC STATE OF MARYLAND
Certificate filed in Montgomery County
Commission Expires August 1, 1997

**United States Enrichment Corporation (USEC)
Proposed Certificate Amendment Request
Paducah Gaseous Diffusion Plant
Nuclear Criticality Safety Program Elements
Detailed Description of Change**

SAR Section 3.16.8, Identification of Nuclear Criticality Safety SSCs, requires the development of a list now referenced in SAR Section 3.15.2.2 as being located in the facility specific Q, AQ-NCS and AQ System Boundary Definition Manuals, which identifies the SSCs and the associated support systems required to meet the double contingency principle. SAR Section 3.16.8 also requires the revision of TSR 3.11.1 to add a new Nuclear Criticality Safety (NCS) program element which states the following, "Identification of SSCs and support systems necessary to meet the double contingency principle". This added NCS program element which is inherent to the performance of Nuclear Criticality Safety Approvals and Nuclear Criticality Safety Evaluations will enhance Paducah's ability to ensure that essential SSCs to NCS are properly addressed by the plant's Quality and Configuration Management programs.

Enclosure 2
GDP 97-0093
8 Pages

Certificate Amendment Request Paducah Gaseous Diffusion Plant Letter GDP 97-0093 Removal/Insertion Instructions	
Remove Pages	Insert Pages
VOLUME 1	
Section 3.15 Page 3.15-47/3.15-48	Section 3.15 Page 3.15-47/3.15-48
Section 3.16 Page 3.16-3/3.16-4	Section 3.16 Page 3.16-3/3.16-4
VOLUME 4	
Section 3.0 Page 3.0-10	Section 3.0 Page 3.0-10

3.15.2.2 Nuclear Criticality Safety SSCs

AQ Function

These SSCs are those identified in NCSAs/NCSEs as required to meet the double contingency principle.

See Section 5.2.

Boundary

A list of the NCS SSCs and the associated support systems required to meet the double contingency principle are maintained within the System Boundary Definition Manuals.

3.15.2.3 Cylinder Valve Protector

AQ Function

The cylinder valve protector protects the cylinder valve from damage. If the cylinder valve is damaged, a UF₆ release could result. These protectors are used on product and tails cylinders (14-ton, 10-ton, and 2.5-ton).

See Section 3.7.3 for a description of this system.

Boundary

The boundary is the valve protector.

3.15.2.4 2S Sample Cylinders and 1-kg Sample Cylinders

AQ Function

These cylinders provide containment for small amounts (1 to 2 kg) of liquid UF₆.

See Section 3.7.1 for a description of this system.

Boundary

These sample cylinders consist of the cylinder body plus adapters and the cylinder valve.

3.15.2.5 Process Gas Coolers

AQ Function

The stage coolers, the recycle coolers, and the booster station coolers are R-114 heat exchangers which regulate the temperature of the process gas. The function is to provide a boundary between R-114 and the process gas stream. Failure of the boundary could result in over-pressurization of the process system.

See Section 3.3.5.5.1 for a description of this system.

Boundary

Cooler components that separate R-114 and process gas.

3.15.2.6 UF₆ Scales

AQ Function

The importance of the beam scales in C-310, C-315, C-333A, C-337A, and C-360 (basement) with respect to safety and safeguards is Nuclear Material Control and Accountability (NMC&A) and prevention of overfilling a cylinder.

The scales are described in Fundamental Nuclear Materials Control Plan, and Section 4.1.1.

Boundary

The beam scales are identified and listed in Table 4.2 of the Fundamental Nuclear Material Control Plan. Included within the boundary is the balance scale in its entirety.

3.15.2.7 Inventory Instrumentation Require for Nuclear Material Accountability

AQ Function

The inventory instrumentation performs a safeguards function by providing a means to demonstrate compliance with NMC&A requirements.

Also see the Fundamental Nuclear Materials Control Plan.

The sanitary and fire water system (SFWS, reference Section 3.9.2.3) currently supplies water to the C-315 automatic wet-pipe sprinkler systems. A modification is planned to change this source to the high pressure fire water system (HPFWS, reference Section 3.15.2.11). The SFWS will be controlled as AQ until this modification is complete. After completion of that modification, the SFWS will be classified non-safety (NS).

Two new cranes are being installed in C-360 (north) and C-337A (south). The components of these new cranes were included in the boundaries rather than the old cranes' components (reference Sections 3.15.1.1.7 and 3.15.1.4.10).

3.16.8 Identification of Nuclear Criticality Safety SSCs

Section Deleted

3.16.9 CAAS Audibility

There are areas of process buildings where the CAAS horns (reference Sections 3.15.1.1.6, 3.15.1.2.5, 3.15.1.3.7, 3.15.1.4.9, 3.15.1.5.1, 3.15.1.6.1, 3.15.1.7.1, and 3.15.1.8.1) are not audible due to high ambient noise levels. Modifications will be initiated to ensure that the CAAS alarm horns are capable of being heard throughout the affected areas of the process buildings.

3.16.10 Autoclaves

Several issues have been identified relative to the autoclaves that will be addressed as part of the Compliance Plan. These issues include the following:

- The present instrumentation is not capable of measuring the vacuum required by the UF₆ piping test procedure to verify integrity of piping connections. In addition, the present pressure monitoring instrumentation on the autoclaves in C-333A, C-337A, and C-360 has too large of an accuracy range to ensure a sufficient margin between operating/trip pressures.
- The SAR Upgrade activities have identified transfer and sampling piping in C-360 where the UF₆ detection system initiates closure of only one containment isolation valve.
- The autoclaves in C-360 do not have a low instrument air pressure switch to initiate containment upon loss of instrument air.
- The autoclaves in C-360 are not prevented from being inadvertently opened when an Autoclave High-Pressure Isolation System containment isolation signal is present.

- The capability is not provided to leak test the following containment isolation valves for the autoclaves in C-333A, C-337A, and C-360:
 - a. Air and steam inlet line valves.
 - b. Valves between the autoclaves and the cylinder over-pressure protection system.

3.16.11 Power for Cell Trips

The motive power for tripping cell motors is provided by the DC power system and by the air pressure supplied to the "000" air circuit breakers. The specific values for battery performance requirements provided in the related TSR must be verified and the TSR and TSR basis statement revised accordingly. The air pressure requirements for the "000" air circuit breakers must be established and SAR Section 3.9.1.3.2 revised accordingly.

3.16.12 Slaving of CAAS Alarm Systems

Several leased buildings that are located within the evacuation area of buildings with criticality accident alarm system (CAAS) clusters do not have evacuation horns and lights slaved to these clusters (reference Section 3.12.6). Furthermore, the criticality alarm horns from adjacent alarmed buildings cannot be heard within most of these unslaved buildings. Therefore, the requirements that a criticality accident be annunciated into all areas requiring evacuation is not met.

SECTION 3.0 ADMINISTRATIVE CONTROLS

- f. All nuclear criticality safety evaluations and approvals;
- g. All proposed Requests for Enforcement Discretion;
- h. NRC-required event reports.

3.10.6 RECORDS

Written records of PORC reviews shall be maintained. As a minimum, these records shall include:

- a. Results of the activities conducted under the provisions of TSR 3.10;
- b. Recommended approval or disapproval of items considered under TSR 3.10.5;
- c. Determination of whether each item considered under TSR 3.10.5 requires prior NRC approval before implementation per 10 CFR 76.68 and 76.45.
- d. Minutes of PORC meetings, as approved by the chair or his/her designee.
- e. Appointments of PORC members and alternates.

3.11 NUCLEAR CRITICALITY SAFETY PROGRAM

3.11.1 A Criticality Safety Program shall be established, implemented, and maintained as described in the Safety Analysis Report and shall address the following elements:

- Adherence with ANSI/ANS Standards
- Nuclear Criticality Safety Responsibilities
- Process Evaluation and Approval
- Identification of SSCs and support systems necessary to meet the double contingency principle
- Design Philosophy and Review
- Criticality Accident Alarm System Coverage
- Procedure Requirements
- Posting and Labeling Requirements
- Change Control
- Operation Surveillance and Assessment
- Technical Aspects

**United States Enrichment Corporation (USEC)
Proposed Certificate Amendment Request
Paducah Gaseous Diffusion Plant
Nuclear Criticality Safety Program Elements
Significance Determination**

The United States Enrichment Corporation (USEC) has reviewed the proposed changes associated with this certificate amendment request and provides the following Significance Determination for consideration.

1. No Significant Decrease in the Effectiveness of the Plant's Safety, Safeguards, or Security Programs

The addition of an NCS program element to the TSR that involves SSCs and support systems required to meet double contingency is not addressed in plant safety, safeguards, or security programs contained in Volume 3 of the Application for United States Nuclear Regulatory Commission Certification for the Paducah Gaseous Diffusion Plant. Therefore, the effectiveness of these programs is unaffected by this change.

2. No Significant Change to Any Conditions to the Certificate of Compliance

None of the Conditions to the Certificate of Compliance for operation of the Paducah Gaseous Diffusion Plant specifically address the identification of SSCs and support systems necessary to meet the double contingency principle. Thus, the proposed change has no impact on any of the Conditions to the Certificate of Compliance.

3. No Significant Change to Any Condition of the Approved Compliance Plan

The proposed change to revise TSR 3.11.1 to add the following, "Identification of SSCs and support systems necessary to meet the double contingency principle" is not addressed by the Compliance Plan nor any conditions of the Compliance Plan. The revision of TSR 3.11.1 was contingent upon the preparation of the SSCs and support systems list necessary to meet the double contingency principle as noted in SAR Section 3.16.8 and as referred to in Compliance Plan Issue 21, Plan of Action and Schedule, item 1, first bullet. The Boundary Definition Manuals have been revised to include AQ-NCS items.

4. No Significant Increase in the Probability of Occurrence or Consequences of Previously Evaluated Accidents

The revision of the TSR and associated SAR Section 3.15.2.2 to add the NCS program element for the identification of SSCs and support systems necessary to meet the double contingency principle will not increase the probability of occurrence or consequence of any postulated

**United States Enrichment Corporation (USEC)
Proposed Certificate Amendment Request
Paducah Gaseous Diffusion Plant
Nuclear Criticality Safety Program Elements
Significance Determination**

accident currently identified in the SAR. The analysis of postulated accidents did not take credit for the double contingency principle but analyzed each event based on individual accident initiators and preventers, and the new NCS program element does not change any accident initiator or preventer.

5. No New or Different Type of Accident

The revision of TSR 3.11.1 to add another NCS program element will not create a new or different type of accident than those previously analyzed. This is due to the fact that the new NCS program element does not change or add any new accident initiator.

6. No Significant Reduction in Margins of Safety

Since there is no increase in the probability or consequence of a criticality as result of the proposed change to the TSR, nor have there been any new accident initiators identified, there is no significant reduction in the margin of safety. The margin of safety will be enhanced due to the added emphasis on the identification of SSCs and support systems necessary to meet the double contingency principle.

7. No Significant Decrease in the Effectiveness of any Program or Plans Contained in the Certificate Application

The addition of an NCS program element to the TSR that involves SSCs and support systems required to meet double contingency is not addressed in any program or plans contained in the certificate application. Therefore, the effectiveness of these programs is unaffected by these changes.

8. The proposed changes do not result in undue risk to 1) public health and safety, 2) common defense and security, and 3) the environment

The addition of an NCS program element to the TSR that involves SSCs and support systems required to meet double contingency does not increase the probability or consequence of any previously analyzed accident. As such, this change does not represent an undue risk to public health and safety. This change due to its NCS programmatic nature will have no adverse impact on environment or the common defense and security.

United States Enrichment Corporation (USEC)
Proposed Certificate Amendment Request
Paducah Gaseous Diffusion Plant
Nuclear Criticality Safety Program Elements
Significance Determination

9. No Change in the Types or Significant Increase in the Amounts of Any Effluents that May be Released Offsite

This change has no effect on the generation or disposition of effluents, therefore it does not change the types or amounts of effluents that may be released offsite.

10. No Significant Increase in Individual or Cumulative Occupational Radiation Exposure

The revision of the TSR and the associated SAR Section 3.15.2.2 to add the NCS program element for the identification of SSCs and support systems necessary to meet the double contingency principle will not increase the probability of occurrence or consequences of any postulated accident currently identified in the SAR. Therefore, there is no significant increase in individual or cumulative occupational radiation exposure.

11. No Significant Construction Impact

This change does not involve a plant modification. Therefore, there is no significant construction impact.

12. No Significant Increase in the Potential for, or Radiological or Chemical Consequences from, Previously Analyzed Accidents

The revision of the TSR and the associated SAR Section 3.15.2.2 to add the NCS program element for the identification of SSCs and support systems necessary to meet the double contingency principle will not increase the probability of occurrence or consequences of any postulated accident currently identified in the SAR. Therefore, there is no significant increase in the potential for radiological or chemical consequences from previously analyzed accidents.