



United States  
Enrichment Corporation

JAMES H. MILLER  
VICE PRESIDENT, PRODUCTION

United States  
Enrichment Corporation

2 Democracy Center  
6903 Rockledge Drive  
Bethesda, MD 20817

Tel: (301) 564-3200  
Fax: (301) 564-3201

Dir: (301) 564-3309  
Fax: (301) 571-8279

October 31, 1996

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 96-0191

**Paducah Gaseous Diffusion Plant (PGDP)**

**Docket No. 70-7001**

**Certificate Amendment Request-Change to Compliance Plan Due Date for Issue 14, Fire Protection Water System Reliability**

Dear Dr. Paperiello:

In accordance with 10 CFR 76.45, the United States Enrichment Corporation (USEC or Corporation) hereby submits a request for amendment to the proposed certificate of compliance for the Paducah, Kentucky Gaseous Diffusion Plant (GDP). This certificate amendment request revises the completion date specified in the DOE/ORO-2026, Plan for Achieving Compliance with NRC Regulations at the Paducah Gaseous Diffusion Plant (Compliance Plan), Revision 3, Change A, for the first item described in the Plan of Action and Schedule for Issue 14, Fire Protection Water System Reliability.

The first item in the Plan of Action and Schedule for Issue 14 of the Compliance Plan, Revision 3, Change A, requires that two of the electric fire water pumps be refurbished. This refurbishment includes scheduling, equipment procurement, installation, and system testing. The refurbishment was scheduled to be complete on October 31, 1996. As the system performance test for the second of the two pumps was being completed (the performance test for the first pump was successfully completed without incident), the second pump shut down when the stop button was pushed but did not remain shut down

9611060065 961031  
PDR ADDCK 07007001  
C PDR

Add: NM 33 / FceB T8H33  
Delete: LA

Dr. Carl J. Paperiello

October 31, 1996

GDP 96-0191 Page 2

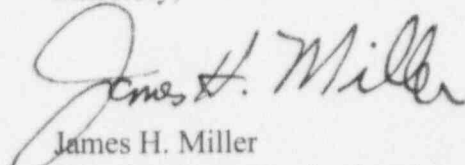
when the stop button was released two out of four times the shut down was manually initiated. The fire water pump did successfully complete all other aspects of the performance testing, and is capable of performing its intended function. Additional time will be required to enable troubleshooting of the pump shutdown circuitry so that the root cause can be determined and corrected. There are also a total of four punch list items for both electric fire water pumps that need to be completed as described in Enclosure 1. In the meantime, although the pumps are not considered operable, they can be made available to perform their intended function. This work will be completed by November 22, 1996.

Enclosure 1 to this letter provides a detailed description and justification for the proposed change. Enclosure 2 contains insert and removal instructions and a revised page for Compliance Plan Issue 14. Enclosure 3 contains the basis for USEC's determination that the proposed change associated with this certificate amendment request is not significant.

Since this proposed certificate amendment request is not required to support continued operation, USEC requests NRC review and approval at your earliest convenience. The amendment should become effective upon issuance.

Any questions related to this subject should be directed to Mr. Steve Routh at (301) 564-3251.

Sincerely,



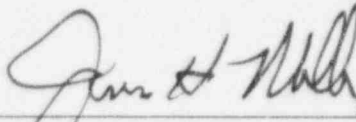
James H. Miller  
Vice President, Production

Enclosures: As Stated

cc: NRC Region III Office  
NRC Resident Inspector - PGDP  
NRC Resident Inspector - PORTS  
Mr. J. Dale Jackson (DOE)

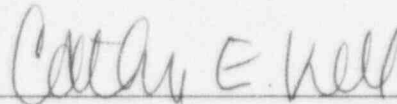
## OATH AND AFFIRMATION

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 31 day of OCTOBER, 1996.



Notary Public

CATHERINE E. KEEL  
NOTARY PUBLIC STATE OF MARYLAND  
My Commission Expires February 4, 1997

**United States Enrichment Corporation (USEC)  
Proposed Certificate Amendment Request  
Fire Protection Water System Reliability  
Detailed Description of Change**

Issue 14 in the Plan for Achieving Compliance with NRC Regulations at the Paducah Gaseous Diffusion Plant, Revision 3, Change A, requires that two of the electric fire water pumps be refurbished. This refurbishment includes scheduling, equipment procurement, installation, and system testing. The refurbishment was scheduled to be complete on October 31, 1996. As the system performance test for the second of the two pumps (Firewater Pump #3) was being completed (the performance test for the first pump, Firewater Pump #2, was successfully completed without incident), the second pump shut down when the stop button was pushed but did not remain shut down when the stop button was released two out of four times shutdown was manually initiated.

As a result of the testing, there is a total of four punch list items to be completed for both pumps. For Firewater Pump #2 and #3, the factory supplied surge protection device is not wired in accordance with vendor drawings. For Firewater Pump #3, the overcurrent trip and the stop/reset push button in controller #3 failed to stop the pump motor after two of four remote starts from Building C-300.

The fire water pumps did successfully complete all other aspects of the performance testing, and are capable of performing their intended function to start in any manual or automatic mode. The problem will not inhibit the design flow to the sprinkler systems in the associated facilities.

As a result, additional time will be required to enable troubleshooting of the pump shutdown circuitry so that the root cause can be determined and corrected, and to complete other punch list items. In the meantime, the pumps can still perform their intended function. This work will be completed by November 22, 1996. Therefore, the completion date for the first item in the Plan of Action and Schedule for Compliance Plan Issue 14 will be revised from October 31, 1996 to November 22, 1996. Since the fire water pumps are both still available to perform their intended function during the time the cause of the problem is investigated and corrected, there is no decrease in the margin of safety for the fire water system.

<b>Proposed Certificate Amendment Request Paducah Gaseous Diffusion Plant Letter GDP 96-0191 Removal/Insertion Instructions</b>	
<b>Remove Pages</b>	<b>Insert Pages</b>
<b>Compliance Plan</b>	
<b>Issue 14</b> Page 3/4	<b>Issue 14</b> Page 3/4

3. Guidance for fire equipment inspection, testing, and maintenance, including frequencies of performance.

It is this guidance that is used as the basis for the "major elements of the inspection program and their associated frequencies" as stated in Section 5.4.4, "Testing and Inspection," in the revised Safety Analysis Report. Procedures and Instructions exist to implement the identified tests and inspections.

Additional fire water system capacity is provided by the SFWS. The SFWS consists of five fire water pumps, ranging in capacity from 600 to 2000 gallons per minute (gpm). The two 2000-gpm pumps are driven by high reliability dual electric and diesel drives. The SFWS supplies a yard supply loop in close proximity to the HPFWS yard supply loop and supplies sanitary, domestic, and fire suppression systems in non-safety-related buildings. SFWS water can be made available from hose stations to fight fires in safety-related buildings.

The performance and maintenance of all five existing HPFWS pumps will be monitored closely to ensure operability until the new and refurbished pumps are on line.

2. (For Noncompliance 2) The fixed automatic fire suppression systems in Process Building C-315 are currently supplied by the SFWS. Additionally, the SFWS provides fire water to non-safety-related buildings and the domestic, sanitary, and equipment cooling loads throughout the site. The SFWS consists of five pumps that take suction from the "clear well" with a capacity maintained at 500,000 gallons. The SFWS pumps are the only pumps taking suction from this source of water. The clear well is gravity fed from four settling basins with a combined capacity of 8,000,000 gallons. Two of the five SFWS pumps have dual drives and may be driven by either an electric motor or a diesel engine. The fire water demand can be met and maintained by any combination of two or more pumps.

The SFWS is also supplied by a 250,000-gallon elevated tank connected to the pump discharge header, which maintains pressure on the supply header to the SFW systems. The level in the tank is maintained at 85% capacity, (approximately 212,500-gallons). Analysis has shown that this tank provides sufficient inventory to meet the design basis fire requirements for a fire in Building C-315. SFWS pumps may still be needed to supply the low-priority loads depending upon system demand.

The Building C-315 design basis fire is a 75-minute fire. Fire system demand for this design basis fire is approximately 1400 gpm. Providing an additional hose stream of 750 gpm to assist in fighting the fire would increase the fire fighting demand to approximately 2150 gpm. Assuming an available inventory of 212,500 gallons in the elevated storage tank, water is available to the Building C-315 fire suppression system and to support fire fighting for over 100 minutes, providing domestic demand is maintained by the SFWS pumps alone. For a 75-minute duration fire, the storage tank of 212,500 gallons could supply approximately 2800 gpm, equivalent to the fire fighting demand of 2150 gpm and an additional domestic sanitary demand of 650 gpm. Even with a loss of pumping, the elevated tank has sufficient capacity to meet the fire fighting requirements for the design basis fire, assuming the operator restores pumping capability and/or isolates low priority demand in approximately 30 minutes. Upon indication of increased system demand, such as decreasing system pressure, the operator is required by procedure to take action to maintain system pressure within desired limits.



The domestic sanitary requirement, as listed in KY/G-392, is 2000 gpm, and the combined flow required for fire protection and sanitary use is approximately 4200 gpm. The adequacy and the reliability of the SFWS to deliver 4200 gpm during the period of this compliance plan item is assured by the redundancy in sources of fire water, fire tower and pumps, volumes of water available from individual and combined water sources, and other water system availability for temporary cross connections to the sanitary water system.

Until TSR 2.3.4.8 is in place, an operator is permanently stationed at the C-611 pump station to ensure the reliability of the SFWS to support postulated fires, including a fire in Building C-315. This operator monitors and maintains the settling basin levels, SFWS pump operation, and elevated storage tank level. In the event of a fire, the operator will ensure the availability of the SFWS supply to Building C-315 by starting additional pumps and reducing flow to low-priority systems. Additionally, the SFWS servicing C-315 will be maintained as an AQ system until the connection is complete. (The HPFWS is an AQ system.) System boundaries are discussed in SAR chapter 3.

Activities to ensure the availability and operability of the SFWS pumps and suppression systems in Building C-315 will be performed and documented in accordance with DOE ORO Office fire prevention and protection policies. These policies identify the fire protection program elements and policies that will maintain and improve program performance. These policies specify the fire protection system inspection and testing requirements to be performed throughout DOE ORO facilities.

#### Interim Regulatory Commitments

The following commitments derived from the ROA requirements will remain in effect until replaced by Application commitment implementation:

1. Fixed fire suppression systems, where provided, shall be tested in accordance with the commitments provided in the application. (Noncompliance No. 2)
2. Automatic fire suppression systems shall be provided for areas containing safety systems. (Noncompliance No. 2)
3. A water supply shall be maintained to provide a 6875-gpm capacity as required in PGDP SAR Section 3.9.2.5. (Noncompliance No. 1)

#### **PLAN OF ACTION AND SCHEDULE**

- i. A Nuclear Safety Upgrade project provides for refurbishment of two of the electric fire water pumps. These two pumps are in excess of 30 years old. This project includes scheduling, equipment procurement, installation, and system testing. The scheduled completion date for these actions is November 22, 1996.
2. A Nuclear Safety Upgrade project provides for the reconfiguration of the fire water supply piping to Building C-315. The fixed automatic fire suppression systems covering those areas of Building C-315 in which Q systems are located will be supplied from the HPFWS. This

**United States Enrichment Corporation (USEC)  
Proposed Certificate Amendment Request  
Fire Protection Water System Reliability  
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 proposed change to the Compliance Plan affects only the scheduled completion date for the refurbishment of two of the electric fire water pumps (High-Pressure Fire Water System). The proposed change is to complete the actions by November 22, 1996, rather than by October 31, 1996. During testing of the refurbished equipment, it was determined that although both refurbished pumps started and pumped satisfactorily, certain wiring for the surge protection device (pumps # 2 and 3) was not in accordance with vendor drawings, an overcurrent trip in pump # 3 failed to stop the pump motor, and the stop/reset push button in pump controller #3 failed to stop the pump motor. The pump can be stopped using a breaker, however.

As described in the SAR (section 3.9.2.5) and TSR (2.3.4.11), at least two High-Pressure Fire Water System pumps need to be operable. The FSAR (section 4.9.2.5 and 5.3.2.5) and OSR KY/D-3971 Rev. 5E Section 3.1.4 require High-Pressure Fire Water System operability. Two pumps remain fully operable. Therefore, the effectiveness of the High-Pressure Fire Water System is unaffected by their condition and the proposed change to the compliance plan.

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

The changes associated with the compliance plan enhance the availability of the High-Pressure Fire Water System equipment. None of the Conditions to the Proposed Certificate of Compliance for Operation of Gaseous Diffusion Plants (GDP-1) specifically address the High-Pressure Fire Water System. Thus, the proposed changes have no impact on any of the Conditions to the Proposed Certificate of Compliance.



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

The Plan of Action and Schedule for Issue 14 of the Plan for Achieving Compliance with NRC Regulations at Paducah Gaseous Diffusion Plant, requires the completion of the refurbishment of two of the electric fire water pumps and system testing by October 31, 1996. The proposed change in the completion date (to November 22, 1996) is submitted in accordance with the Compliance Plan and creates no significant changes to the Compliance Plan nor to any conditions of the Compliance Plan.

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

The pump refurbishments enhance the availability of the High-Pressure Fire Water. Although two of the four pumps require punch list items to be completed, all four pumps are capable of being started and providing the require fire water. Therefore, there is still assurance that the function will be available if required. Therefore, the consequences of previously evaluated accidents are not increased. The refurbishment of the pumps has no impact on the probability of occurrence of a fire in the cascade (equipment/facility being protected.) The existing justification for continued operation (Issue 14 of the Compliance Plan) during the refurbishment is not impacted.

5. No New or Different Type of Accident

The pump refurbishment has no impact on the existing operating ranges of the fire protection equipment. The changes during this refurbishment and system testing create no new operating conditions or new plant configurations that could lead to a new or different type of accident.

6. No Significant Reduction in Margins of Safety

The capability to provide the require High-Pressure Fire Water System flow capacity and/or amount of fire water is not decreased. Consequently, the proposed changes cause no reductions in the margins of safety.

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

The proposed system changes associated with Compliance Plan Issue 14 enhance the availability of the High-Pressure Fire Water. The change in the completion date for refurbishment and system testing have no impact on the effectiveness of the Fire Protection Program or of any other programs or plans contained in the application.

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 proposed change to the schedule completion date for refurbishment of two of the electric fire water pumps does not affect the ability to mitigate the consequences of postulated accidents (fires). As such, this change does not represent an undue risk to public health and safety. In addition, this revision has no impact on plant effluents or on the programs and plans in place to implement physical security. Consequently, this proposed change has no adverse impact on safety and poses no undue risk to the environment or the common defense and security.