

February 6, 2001

Mr. J. Morris Brown
Vice President - Operations
United States Enrichment Corporation
Two Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: NRC INSPECTION REPORT NO. 70-7001/2001-001(DNMS) (PADUCAH)
AND NOTICE OF VIOLATION

Dear Mr. Brown:

On January 8, 2001, the NRC completed a routine resident inspection at the Paducah Gaseous Diffusion Plant. The purpose of the inspection was to determine whether activities authorized by the certificate were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection, the inspectors discussed the findings with members of your staff.

Areas examined during the six week inspection period are identified in the report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with personnel, and observations of activities in progress.

Based on the results of the inspection, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding the violation are described in detail in the enclosed report. The violation is of concern because your staff failed to develop an adequate winterization procedure that prescribed the essential actions needed to safely operate the plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, the enclosures, and your response to 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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

J. Brown

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA by M. Phillips acting for/

Patrick L. Hiland, Chief
Fuel Cycle Branch

Docket No. 70-7001
Certificate No. GDP-1

Enclosure: 1. Notice of Violation
2. Inspection Report No. 70-7001/2001-001(DNMS)

cc w/encls: H. Pulley, Paducah General Manager
L. L. Jackson, Paducah Regulatory Affairs Manager
P. D. Musser, Portsmouth General Manager
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NOTICE OF VIOLATION

United States Enrichment Corporation
Paducah Gaseous Diffusion Plant

Docket No. 70-7001
Certificate No. GDP-1

During an NRC routine inspection conducted from November 28, 2000 through January 8, 2001, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," Revision 1, the violation is listed below.

10 CFR 76.93, "Quality Assurance," requires, in part, that the certificatee shall establish and execute a quality assurance program.

Section 2.2.2.b of the Quality Assurance Program (QAP) requires, in part, that the QAP applies to augmented quality (AQ) items to the extent described in Appendix A. Section 2.5 of Appendix A states that Section 2.5 "Instructions, Procedures, and Drawings" of the Q program applies. Section 2.5.3.1 of the Quality Assurance Program requires, in part, that: 1) activities affecting safety or quality are prescribed and performed in accordance with documentation instructions, procedures, or drawing of a type appropriate to the circumstances, and 2) these documents include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities were satisfactorily performed.

Safety Analysis Report, Section 3.15, "Q and AQ Structures, Systems, and Components," specifies the High Pressure Fire Water (HPFW) system as an augmented quality (AQ) system.

Contrary to the above, between October 13, 2000 and December 23, 2000, actions taken to winterize process buildings failed to ensure that the HPFW system remained operable during cold weather. The procedure did not include appropriate acceptance criteria for determining that the required activities were satisfactorily performed. Specifically, Procedure CP4-CO-CM6032 did not include an acceptance criteria to ensure that ventilation fans were operable as required to preclude freezing of the HPFW system.

This is a Severity Level IV violation (Supplement VI). **(VIO 70-7001/2001001-01)**.

Pursuant to the provisions of 10 CFR 76.70, United States Enrichment Corporation is hereby required to submit a written statement or explanation in reply to the violation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at Paducah, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). Your reply to the violation should be clearly marked as a "Reply to a Notice of Violation" and should include for the violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order or a Demand for Information may be issued as to why the Certificate should not be modified, suspended, or revoked, or why such other action, as may be proper, should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (for example, explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 6th day of February 2001

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 70-7001
Certificate No: GDP-1

Report No: 70-7001/2001-001(DNMS)

Licensee: United States Enrichment Corporation

Facilities: Paducah Gaseous Diffusion Plant

Location: 5600 Hobbs Road
P.O. Box 1410
Paducah, KY 42001

Dates: November 28, 2000 through January 8, 2001

Inspectors: Courtney A. Blanchard, Senior Resident Inspector
David J. Hartland, Portsmouth Senior Resident Inspector

Approved By: Patrick L. Hiland, Chief
Fuel Cycle Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

United States Enrichment Corporation Paducah Gaseous Diffusion Plant NRC Inspection Report 70-7001/2001-001(DNMS)

Plant Operations

- The inspectors identified a weakness in plant management's interim actions to address abnormal operating conditions and a defective quality component. In addition, the inspectors noted a weakness in operational staff's identification and documentation of abnormal operating condition during routine activities. Since the implementation of the corrective action review team, the inspectors concluded that interim actions imposed were conducted in accordance with procedural requirements which ensured that the breadth, depths, and timeliness of issues were correctly addressed. (Section O1.1)
- The inspectors identified a violation of section 2.5, "Procedures," of the Quality Assurance Program. Specifically, plant staff used an inadequate procedure to perform winterization activities required to ensure the high pressure firewater system (HPFW) remained operable. The procedure failed to include acceptance criteria for the ventilation fans for each fan room which must be operable to preclude HPFW pipe freezing. (Section O2.1)
- The inspectors concluded that plant staff effectively prepared for and performed technical safety requirement surveillance which had not been required to be conducted in two years. Additionally, plant staff developed a useful tool to aid operation in effectively identifying process gas leak detection operability. (Section O4.1)

Maintenance

- The inspectors identified some deficiencies during review of maintenance work packages. In response, maintenance management issued a reminder to personnel regarding attention to detail when completing documentation and directed front line managers to perform daily reviews. (Section M1.1)

Engineering

- The inspectors concluded that the certificatee's qualifications to be a procedural writer exceeded requirements for a non-regulated position. The inspectors concluded that plant management's decision to allow three incumbent senior procedure writers to remain in their positions after newly imposed training requirements were enacted appeared reasonable for a non-regulated position. (Section E1.1)

Plant Support

- The inspectors concluded that plant staff effectively implemented the radioactive materials transportation program during preparation for shipment of low-level waste. (Section A1.1)

Report Details

I. Operations

O1 Conduct of Operations

O1.1 Implementation of Procedures

a. Inspection Scope (88015 and 88100)

The inspectors reviewed the initial response, interim actions, the root cause investigation, and corrective actions imposed by plant staff to address abnormal operating conditions and a defective quality component. In addition, the inspectors reviewed the plant staff's preparation for abnormal ambient temperatures.

b. Observations and Findings

On December 4, plant staff was notified of a cylinder valve defect. Specifically, a cylinder valve manufacturer identified a metallurgical defect with some packing valve nuts and issued a letter to customers identifying the defect. The vendor identified several lots of valves which had packing nuts that, during the forging metallurgical process, had developed stress cracks. The inspectors noted that the plant shift superintendent (PSS) notified building management in the feed and withdrawal facilities to check all cylinders in production for the defective valves and their respective cylinder staging areas. No defective valves were identified during this initial site wide inspection effort.

The inspectors noted that the failure of a cylinder valve packing nut had the potential to release a significant quantity of uranium hexafluoride (UF_6) to the atmosphere. The packing nut compressed the packing material around the valve's stem and body which produced a seal to prevent UF_6 from escaping through the valve's stem and body. The inspectors noted that the stress cracks observed had the potential to cause a catastrophic failure of the packing nut which could allow the packing material to eject from the valve body when a cylinder was heated (under pressure). Without the packing material the UF_6 had a clear path between the valve stem and body to atmosphere.

On December 8, after learning of approximately 200 defective valves that had not been accounted for at the site, the inspectors inspected the feed and withdrawal areas and discussed with cognizant operators the interim actions imposed to ensure that a cylinder with a defective valve was not used. In discussions with the inspectors, feed and withdrawal operators explained that they had no further action to inspect cylinder valves after the initial December 4 inspection. These operators explained that chemical operators inspected for the defective valves prior to cylinder movement. However, inspectors noted that the feed and withdrawal operators checked the cylinder valves for a previously identified valve defect during routine activities which appeared to be a prudent time to validate the chemical operators inspection. On December 12, after discussions with the inspectors, plant staff issued a long term order that required feed and withdrawal operators to inspect for the defective cylinders.

The inspectors reviewed plant management's imposed interim process to inspect cylinders for the defective valve. In discussions with the inspectors, the chemical

operations manager explained that front line managers (FLM) verbally communicated the inspection criteria to the chemical operators each shift. However, the inspectors noted that some chemical operators appeared to be confused about the current cylinder valve defect. Specifically, some chemical operators were cognizant of the previous valve defect and thought that the current valve defect was the same issue. After learning of this confusion, the inspectors discussed with the Chemical Operation Manager the observed inspection finding. The Chemical Operation Manager stated that the interim inspection criteria should have been documented in a long term order. Shortly following this discussion, the inspectors noted that a long-term order was issued, which clearly articulated the defective valve inspection criteria and noted no additional issues pertaining to the required actions taken by the chemical operators to address the valve defect.

On December 20, plant staff identified that the temperature in the Building C-331 "E" and "F" surge drum room had dropped below the nuclear criticality safety analysis (NCSA) requirement. The inspectors noted that NCSA CAS-005 implemented two controls on moderation to establish double contingency. The first nuclear criticality safety (NCS) control required that the "E" and "F" surge drum room temperature be maintained above 105° F and the second control required the surge drum pressure to be maintained below 20 pounds per square inch absolute (psia). The inspectors noted Procedure CP4-CO-CN2007, Revision 9, "Operation of Surge Drums," Section 5.0, "Precautions and Limitations," articulated that the actual temperature was 11° F lower and pressures were 1.5 psia higher in the surge drums than indicated on the gages operators used to maintain NCS controls. The inspectors noted that two engineering evaluations supported the temperature and pressure uncertainty incorporated into Procedure CP4-CO-CN2007 to ensure that operators maintained the surge drums within NCS controls. In addition, plant staff conservatively incorporated a 10 psia margin of safety into the surge drum pressure in Procedure CP4-CO-CN2007. Therefore, due to the aforementioned reasons, Procedure CP4-CO-CN2007 required surge drum minimum temperature to be maintained at 116° F and maximum surge drum pressure 8.5 psia. On December 20, operators read a temperature of 115° F for the "E" and "F" surge drums.

The inspectors reviewed the circumstances that led to an "E" and "F" surge drum room temperature NCS violation on December 20. Approximately one month prior to the December 20 NCS event, the inspectors discussed on-going concerns with select Building C-331 management. Building C-331 management explained that operations had issued several work requests to fix the exterior ventilation louvers at the surge drum end of Building C-331 where the surge drums were located because of temperature concerns. On December 22, the inspectors observed that plant staff had not completed the installation of plastic covers over the exterior Building C-331 louvers, had not issued an assessment and tacking report (ATR) to identify the potential NCS issue, nor increased the surveillance frequency to ensure that the critical operability temperature was maintained in the surge drums. In review of the routine operation logs, the inspectors noted that from December 16 to 20 the surge drum room temperature was within 2° F of the minimum NCS temperature but this was not documented in the narrative section of the routine logs. Several operators explained that the surge drum rooms' normal operating temperature was approximately 125° to 140° F and explained that the adverse temperature trend should have been recorded in the narrative section of the log to highlight the issue to the FLM. However, the inspectors identified that operators appeared confused about the minimum 116° F surge drum room operating

temperature specified in the routine log. Specifically, operators were knowledgeable of the 105° F NCS temperature limit but did not clearly understand that the 116° F temperature related to an actual temperature of 105° F when the maximum instrument uncertainty of 11° F was subtracted. The inspectors noted that the routine log sheet did not denote which operating parameters were NCS or technical safety requirements (TSR).

On December 23, the Portsmouth PSS notified the Paducah PSS that plant staff at Portsmouth had identified a problem with HPFW standpipes. Immediately following this discussion, the PSS requested the shift engineer to develop an inspection criteria to check process buildings for freezing standpipes. The inspection criteria required plant staff to inspect standpipes in any area of the process buildings where the temperature was less than 38° F and report any standpipes with measured temperatures below 38° F. In addition, the PSS staff began an independent inspection of the process buildings and a site-wide inspection of systems that were subject to being effected by the abnormally low ambient temperatures. The inspectors noted that the inspection criteria included a list of all HPFW systems for each process building and required a signature verifying that plant staff inspected the system. The inspectors noted that plant staff identified several standpipes with temperatures below the 38° F as measured by an infrared temperature gauge. Plant staff checked the clarity of all standpipes with measured temperatures below 38° F. This inspection effort identified that the D-2 HPFW supply header, an augmented quality (AQ) system, was frozen in Building C-337 and the system was declared inoperable. The inspectors noted that plant staff entered the appropriate limiting condition for operations (LCO) in accordance with TSR section 2.4.4.5, "Fire Protection System - Building Sprinkler System," and notified the NRC of the safety system failure.

The inspectors discussed with cascade operators the types of abnormal observations and conditions that they would document during routine rounds. Specifically, the inspectors discussed potential security, fire loading, and abnormal building temperature scenarios with select cascade operators. Conclusively, operators stated that they had never observed a potential security issue and have personally addressed housekeeping issues when identified. One cascade operator admitted that he had not considered the ambient temperature in a process building to be critical but clearly understood the impact of the frozen HPFW supply header in Building C-337. However, cascade operators stated they would not document these type of issues in the narrative section of the round sheet, rather these types of issues would be discussed with their respective FLM. The inspectors noted that these operators were focused on verifying the operating parameters specified on the round sheets.

The inspectors noted the plant staff's action to ensure that interim actions were implemented to preclude the reoccurrence of issues. Following the December 23 HPFW system event, plant management instituted a corrective actions review team (CART) to formally review significant and current ongoing issues. The CART members include the Enrichment Plant Manager, Operations Manager, Cascade Operation Manager, and PSS Manager. The inspectors observed that the routine daily activities of the CART included assigning an action manager to address operational issues characterized as significant conditions adverse to quality, required notice of violation (NOV) actions, human factor errors, and TSR and NCS violations. The action manager reported on the breadth of the issue, the immediate corrective actions taken, and interim actions to preclude reoccurrence. The inspectors noted that since the implementation of

the CART, several site issues that required interim corrective actions had been addressed in a timely manner and with greater rigor using the appropriate approved processes.

c. Conclusions

The inspectors identified a weakness in plant managements interim actions to address abnormal operating conditions and a defective quality component. In addition, the inspectors noted a weakness in operational staff's identification and documentation of abnormal operating condition during routine activities. Since the implementation of the CART, the inspectors concluded that interim actions imposed were conducted in accordance with procedural requirements which ensured that the breadth, depths, and timeliness of issues were correctly addressed.

O2 Operational Status of Facilities and Equipment

O2.1 Inadequate Preparation for Cold Weather

a. Scope of Inspection (88100)

The inspectors reviewed the winterization methodology used to prepare HPFW and other systems.

b. Observations and Findings

The inspectors reviewed the procedure used to ensure that the HPFW system remained operable during cold ambient temperatures. On or around October 13, 2000, plant staff completed the winterization program in accordance with the guidance of Procedure CP4-CO-CM6032, "Preparation For and Recovery From Cold Weather Protection." The inspectors noted that Procedure CP4-CO-CM6032 included a step to verify that the ventilation dampers would open and close as designed in process buildings but failed to ensure the ventilation system operated as designed. Specifically, during the warmer weather the filter room ventilation system automatically opened the exterior louvers, configured dampers to direct warmer cell floor air to the outside, and operated fans to draw cooler exterior air into the process buildings. During colder weather the filter room ventilation system automatically closed exterior louvers and directed the warm cell floor air to the operating floor through the filter houses. The inspectors observed that the operating floor exhaust vents directed the warm cell floor air across the HPFW supply piping that entered the process buildings. On December 23, the louvers and dampers were appropriately positioned but six of the six ventilation fans were inoperable at the filter house location adjacent to the D-2 HPFW supply pipe. The inspectors noted that without operable ventilation fans the warm air from the cell floor was not drawn down to the operating floor and the abnormal frigid ambient temperature caused the temperature in SW corner of Building C-337 to drop below 32° F which resulted in freezing the water in the D-2 HPFW supply pipe.

The inspectors reviewed the safety significance associated with the frozen D-2 HPFW system. The SAR Section 4.0 "Accident Analysis," included a review of significant incidents at the Paducah GDP. The inspectors noted that this section discussed a UF₆/hot metal reaction and an exothermic reaction which incidents were both terminated using the HPFW as designed. In addition, SAR Section 5.4, "Fire Protection," required that the plant operations review committee (PORC) provide an oversight and review role

in fire protection. Specifically, the PORC Committee was responsible to implement a program to ensure that the HPFW system remained operable. The fire protection program included TSR surveillance requirements due to the importance of the system to protect health and safety and limit danger to life or property from fires. The inspectors noted that the inoperable D-2 HPFW protected the lube oil system in Building C-337 and was classified as a AQ system.

Title 10 of the Code of Federal Regulations, Section 76.93, "Quality Assurance," requires, in part, that the plant staff establish and execute a quality assurance program. Section 2.2.2.b of the Quality Assurance Program (QAP) requires, in part, that the QAP applies to augmented quality (AQ) items to the extent described in Appendix A. Section 2.5 of Appendix A states that Section 2.5 "Instructions, Procedures, and Drawings" of the Q program applies. Section 2.5.3.1 of the Quality Assurance Program requires, in part, that: 1) activities affecting safety or quality are prescribed and performed in accordance with documentation instructions, procedures, or drawing of a type appropriate to the circumstances, and 2) these documents include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities were satisfactorily performed. Safety Analysis Report, Section 3.15, "Q and AQ Structures, Systems, and Components," specifies the HPFW system as an augmented quality (AQ) system.

Contrary to the above requirement, between October 13 and December 23, 2000, actions taken to winterize process buildings failed to ensure that HPFW system remained operable during cold weather. The procedure did not include appropriate acceptance criteria for determining that the required activities were satisfactorily performed. **(VIO 70-7001/2001001-01)**. Specifically, Procedure CP4-CO-CM6032 did not include an acceptance criteria to ensure that ventilation fans were operable as required to preclude freezing of the HPFW system.

Following identification of the inadequate winterization procedure plant staff conducted several interim actions to winterize the site during the abnormal cold temperatures. Specifically, plant staff checked all ventilation fans for operability throughout the site, developed an acceptance criteria for the ventilation fans for each fan room, developed and implemented a steam trap operability surveillance, and ensured that all filter room exterior louvers were covered with a plastic cover in Buildings C-335 and C-337. In addition, plant management requested plant staff to review cognizant work activities for winterization concerns and formulated a task team to revise the winterization procedure. The inspector noted that the team was systematically reviewing each process facility and addressing plant staff suggestions to facilitate the development of an effective winterization program.

c. Conclusions

The inspectors identified a violation of Section 2.5, "Procedures," of the Quality Assurance Program. Specifically, plant staff used an inadequate procedure to perform winterization activities required to ensure the HPFW system remained operable. The procedure failed to include acceptance criteria for the ventilation fans for each fan room which must be operable to preclude HPFW pipe freezing.

O4 Operator Knowledge and Performance

O4.1 Cascade Operations above Atmospheric Pressure

a. Inspection Scope 88100

The inspectors noted the plant staff's preparation and knowledge associated with operating the cascade above atmospheric pressure.

b. Observations and Findings

The inspectors reviewed the safety significance of operating the cascade in mode 2 (above atmospheric pressures) and observed operators perform the required twice a shift TSR surveillance. The inspectors noted that plant staff had operated the cascade consistently in mode 1 (below atmospheric pressure) for approximately 2 years, in part, to perform a power supply enhancement for the process gas leak detection (PGLD) system. Technical Safety Requirement, Section 2.4.4.1, "UF₆ Release Detection System," requires that a minimum number of PLDG heads be operable and tested twice a shift. The basis for the TSR requirements was to identify a UF₆ process leak which could occur when operating a UF₆ system above atmosphere. The reaction of the UF₆ with atmospheric humidity generated hydrogen fluoride gas which was a significant inhalation health concern.

The inspectors observed operators perform the twice a shift required TSR surveillance of the PGLD system. System engineering has evaluated the number of PGLD detectors required and their locations in cell and associated system housings. The inspectors noted that utilizing a written description to provide operators with the status of these PGLD detectors' operability requirements was significantly detailed and impractical for operators to effectively understand. In response, plant staff developed a system schematic which visually identified operability requirements for the locations of PGLD detectors. The inspectors noted that this schematic was updated each time operators performed the required PGLD surveillance. In addition, the inspectors noted that the operators were cognizant of the PGLD leak detection system operability status during routine tours of Building C-333 (process area operated above atmosphere) and had taken the appropriate actions required by Procedure CP4-CO-CN6020t, Rev. 7, "TSR Surveillance - Test firing of PYR-A-LARM Type 1, High Voltage UF₆ Detection System in C-331/333/335/337," to address PGLD identified problems. On December 6, the inspectors observed operators in Building C-333 perform the PGLD leak detection surveillance using the requirements of Procedure CP4-CO-CN6020t. The inspectors observed that the operators followed each step of the procedure. Additionally, the inspectors heard the local control center (LCC) and area control room (ACR) operators communicating in accordance with the site's ongoing human performance enhancement program and no communication errors were identified.

c. Conclusions

The inspectors concluded that plant staff effectively prepared for and performed TSR surveillance which had not been performed in two years. Additionally, plant staff developed a useful tool to aid operations in effectively identifying PGLD operability.

O8 Miscellaneous Operations Issues

08.01 Certificatee Event Reports

The certificatee made the following operations-related event reports during the inspection period. The inspectors reviewed any immediate safety concerns indicated at the time of the initial verbal notification. In the case of retracted notifications, the inspectors reviewed the basis for the certificatee's retraction of the notification at the time of the retraction. The inspectors will evaluate the associated written report for each of the events following submittal.

<u>Number</u>	<u>Status</u>	<u>Title</u>
37606	Open	Primary condensate alarm received on the C-337A position 3 East autoclave Water Inventory Control System.
37625	Open	C-331 E and F surge drum room temperature was found to be at 103 F which is in violation of NCSA.CAS-005.
37632	Open	During a check of the temperature of the standpipes it was discovered that the standpipe for HPFW system D-2 was frozen.

08.02 Bulletin 91-01 Reports

The certificatee made the following reports pursuant to Bulletin 91-01 during the inspection period. The inspectors reviewed any immediate nuclear criticality safety (NCS) concerns associated with the report at the time of the initial verbal notification. Any significant issues emerging from these reviews are discussed in separate sections of the report.

<u>Number</u>	<u>Date</u>	<u>Title</u>
37643	1/2/2001	Mass of U-235 incorrectly copied from Request for Waste Classification on the Waste Consolidation Container Log Sheet.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance Work Package Deficiencies

a. Inspection Scope (88102 and 88103)

The inspectors observed maintenance activities and reviewed work packages to ensure that maintenance was performed in accordance with certificate requirements.

b. Observations and Findings

The inspectors identified some deficiencies during review of maintenance work packages:

- Pre-job briefing check sheets for testing non-safety related local control center alarms in Building C-310 were not completed prior to starting the testing. In one case, the check sheet was completed and signed in February 2000. The testing was apparently postponed and ultimately rescheduled during the current inspection period. During followup, the inspectors noted that the check sheets were not required to be completed for routine, non-safety related work activities. However, the inspectors determined that the appropriate action would have been to mark the sheets "N/A" and document the basis for not performing the pre-job briefings on the sheets prior to starting the testing.
- In Building C-360, the operations personnel did not complete a sign-off on a work package that verified that an AQ-NCS system was declared inoperable prior to beginning the work activity. During followup, the inspectors learned that an operability call was not required for systems/components that were not TSR-related. However, the inspectors determined that the appropriate action would have been to "N/A" the sign-off and document the basis for doing so prior to authorizing the activity to start.

As a corrective action, maintenance management issued a reminder to personnel stressing the importance of attention to detail regarding completion of documentation in work packages. In addition, management directed FLMS to perform daily reviews of work packages to ensure that documentation was being properly completed.

c. Conclusions

The inspectors identified some deficiencies during review of maintenance work packages. In response, maintenance management issued a reminder to personnel regarding attention to detail when completing documentation and directed FLMS to perform daily reviews of work package.

III. Engineering

E5 Engineering Staff Training and Qualification

E1.1 Review of Technical Procedural Writers Qualification and Training

a. Inspection Scope (88100 and 88103)

The inspectors reviewed the regulatory and company requirements to be a procedure writer and the plant staff's implementation of these requirements.

b. Observation and Findings

The inspectors reviewed the regulatory requirements to be a senior procedure writer. Title 10 of CFR, Section 76.87, "Technical Safety Requirements," required in part, that the certificatee develop administrative controls to ensure the safe operation of the Gaseous Diffusion Plants (GDP). Technical Safety Requirement, Section 3.0,

“Administrative Controls,” specifies that the Safety Analysis Report (SAR) described minimum qualifications, functions, and responsibilities for key staff positions. In addition, this section describes the training requirements for individuals relied upon to operate, maintain, or modify the plant in a safe manner. The inspectors noted that the SAR, Section 6.1, “Organization and Administration,” included the requirements for key staff positions but did not include requirements for procedural writers. The SAR, Section 6.6.3, “Systems Approach to Training,” required a formal training program for plant staff who operate, maintain, or modify systems, but did not require a formal program for procedural writers. In addition, the inspectors have not noted a problem with procedures which would result from unqualified procedure writer work activities. The inspectors reviewed certificatee’s current and past qualifications for selecting senior procedural writers. The inspectors noted that the current requirement for a procedural writer included a bachelor’s degree in a management field or technology-related discipline, plus at least a year of related work experience to qualify for the procedure writer’s training program. In a review of selected qualification records for procedural writers, the inspectors noted that procedural writers met these requirements. However, the Operational Manager explained that, the position description used to select and promote senior procedure writers had been as follows:

- Around 1989, to be selected as a senior procedural writer required extensive procedure writing/process knowledge or experience with a Bachelor of Science degree in a science or technology related field or equivalent work experience. Technical writing skills and experience and proficiency with a personal computer and word processing/graphics software was required. In addition, one year GDP experience was required, preferably in a supervisory position.
- In October 1999, USEC Human Resources revised the position descriptions for the procedure writer positions to provide a clear and understood path for advancement. The advancement path to a senior procedure writer included criteria for performance and satisfactory completion of additional training requirements, such as qualified reviewer (QR) training. The inspectors noted that four procedure writer levels were established at this time. The new procedure writer levels were procedure writer I, procedure writer II, senior procedure writer, and procedure specialist. The inspectors noted that these position descriptions were approved in November 1999, but that the three previously classified senior procedure writers did not have the required qualified reviewer training.

The Operational Manager explained that the three senior procedural writers without the required QR training were “grandfathered,” until the required training was offered. The inspectors noted that the three senior procedural writers successfully completed the QR training in August 2000.

c. Conclusions

The inspectors concluded that the certificatee’s requirements to be a procedural writer exceeded requirements for a non-regulated position. The inspectors concluded that plant management’s decision to allow three incumbent senior procedure writers to remain in their positions after newly imposed training requirements were enacted appeared reasonable for a non-regulated position.

IV. Plant Support

A1 Conduct of Transportation Activities

A1.1 Observation of Radioactive Material Shipments

a. Inspection Scope (86740)

The inspectors observed the preparation for shipment of radioactive materials and reviewed associated records.

b. Observations and Findings

On November 29, the inspectors observed the preparation for shipment of low-level radioactively contaminated waste. The inspectors noted that the waste containers were appropriately surveyed for radioactivity, labeled, and secured for shipment as required by 10 CFR Part 71 and Department of Transportation (DOT) regulations. The inspectors also verified that the shipping papers contained the bill of lading with the correct identification of container contents, shipper certification, and emergency response information as required by Department of Transportation regulations. Plant staff preparing the shipment were knowledgeable of the transportation requirements.

c. Conclusions

The inspectors concluded that plant staff effectively implemented the radioactive materials transportation program during the preparation for shipment of low-level waste.

S8 Miscellaneous Security Issues

S8.1 Certificatee Security Reports (90712)

The certificatee made the following security-related 24 hour loggable reports pursuant to 10 CFR 95 during the inspection period. The inspectors reviewed any immediate security concerns associated with the reports at the time of the initial verbal notification.

<u>Date</u>	<u>Title</u>
11/27/2000	The C-100 upstairs vault left unsecured between 11:47 a.m. and 12:35 p.m.
11/30/2000	Two secret envelopes containing classified documents discovered on top of file cabinets in the C-200 basement.
1/10/2001	Classified information transmitted via an e-mail to another employee. Second employee used this information in a report that was distributed. When the report was reviewed it was discovered that the report contained classified information.
1/10/2001	A classified document for which a receipt had been signed, cannot be located.

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of the certificatee's staff and management at the conclusion of the inspection on January 8, 2001. The certificatee staff present for the exit meeting acknowledged the findings. The inspectors asked the certificatee staff whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

United States Department of Energy

W. D. Seaborg, Paducah Site Manager

United States Enrichment Corporation

- *M. A. Buckner, Operations Manager
- *L. L. Jackson, Nuclear Regulatory Affairs Manager
- *J. A. Labarraque, Safety, Safeguards and Quality Manager
- *S. R. Penrod, Enrichment Plant Manager
- *H. Pulley, General Manager

U.S. Nuclear Regulatory Commission

- *C. A. Blanchard, Senior Resident Inspector
- D. J. Hartland, Portsmouth Senior Resident Inspector

*Denotes those present at the exit meeting on January 8, 2001.

Other members of the plant staff were also contacted during the inspection period.

INSPECTION PROCEDURES USED

- IP 86740: Transportation of Radiological Materials
- IP 88015: Criticality Control
- IP 88100: Plant Operations
- IP 88102: Surveillance Observations
- IP 88103: Maintenance Observations
- IP 90712: Inoffice Review of Events

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

70-7001/2000009-05	NOV	Inadequate weather preparation procedure which contributed to a frozen HPFW standpipe.
37606	CER	Primary condensate alarm received on the C-337A, position 3 East autoclave Water Inventory Control System.
37625	CER	C-331 E and F surge drum room temperature violation per NCSA.CAS-005.
37632	CER	HPFW D-2 standpipe found frozen.

Closed

none

Discussed

none

LIST OF ACRONYMS USED

ACR	Area Control Room
AQ	Augmented Quality
ATR	Assessment and Tracking Report
CART	Corrective Action Review Team
CFR	Code of Federal Regulations
DOT	Department of Transportation
F	Degrees Fehrenheit
FLM	Front Line Manager
HF	Hydrogen Fluoride
HPFW	High Pressure Fire Water System
LCC	Local Control Center
LCO	Limiting Conditions for Operations
NCS	Nuclear Criticality Safety
NCSA/E	Nuclear Criticality Safety Analysis/Evaluation
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
PORC	Plant Operations Review Committee
PSS	Plant Shift Superintendent
QR	Qualified Reviewer
TSR	Technical Safety Requirement
UF6	Uranium Hexafluoride
USEC	United States Enrichment Corporation