



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

April 29, 2011

Mr. Robert Van Namen  
Senior Vice President, Uranium Enrichment  
United States Enrichment Corporation  
Two Democracy Center  
6903 Rockledge Drive  
Bethesda, MD 20817

**SUBJECT: NRC INSPECTION REPORT NO. 70-7001/2011-002 AND NOTICE OF VIOLATION**

Dear Mr. Van Namen:

This letter refers to the results of the above-referenced Nuclear Regulatory Commission (NRC) inspection conducted at your Paducah facility from January 1 through March 31, 2011. The purpose of the inspection was to determine whether activities authorized by the certificate were conducted safely and in accordance with NRC requirements. At an exit meeting held on March 31, 2011, the NRC inspectors discussed the findings with members of your staff.

The inspection was an examination of activities conducted under your certificate of compliance as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your certificate of compliance. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

The NRC has determined that two violations of regulatory requirements occurred. One violation concerned a failure to properly secure a radioactive source and the second violation was associated with a failure to make a required 24-hour report. These violations were evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is available on the NRC's Web site at [www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html](http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html). These violations are cited in the enclosed Notice of Violation (Notice), and the circumstances surrounding them are described in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC.

If you contest the violations or the significance, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region II, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration in presenting the corrective actions, the guidance from NRC Information Notice 96-28, Suggested Guidance Relating to Development and Implementation of Corrective Action, is available on the NRC

website and may be helpful. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact us.

Sincerely,

**/RA by J. Calle/**

Joselito O. Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection

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

Enclosures:

1. Notice of Violation
2. NRC Inspection Report No. 70-7001/2011-002

cc w/encls: (See page 3)

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Sincerely,

**/RA by J. Calle/**

Joselito O. Calle, Chief  
 Fuel Facility Inspection Branch 2  
 Division of Fuel Facility Inspection

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cc w/encls: (See page 3)

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ADAMS:  Yes      ACCESSION NUMBER: ML111190634       SUNSI REVIEW COMPLETE

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NAME	RRussell	RPrince	DHartland	MMiller			
DATE	4/29/2011	4/29/2011	4/29/2011	4/29/2011			
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c w/encl:

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Vice President & General Manager  
Paducah Gaseous Diffusion Plant  
United States Enrichment Corporation  
Electronic Mail Distribution

Jim Lewis  
Plant Manager  
Paducah Gaseous Diffusion Plant  
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R. Van Namen

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Letter to Robert Van Namen from Joselito O. Calle dated April 29, 2011

Subject: NRC INSPECTION REPORT NO. 70-7001/2011-002 AND NOTICE OF VIOLATION

Distribution w/encl:

T. Hiltz, NMSS

J. Calle, RII

T. Liu, NMSS

J. Pelchat, RII

M. Miller, PGDP

R. Russell, PGDP

R. Prince, PGDP

## NOTICE OF VIOLATION

USEC-PGDP  
Paducah, Kentucky

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

During an NRC inspection conducted from January 1 through March 31, 2011, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. 10 CFR Part 76.60(d) states, in part, that the Corporation shall comply with the applicable provisions of 10 CFR Part 20.

10 CFR Part 20.1801 states, in part, that the certificate holder shall secure from unauthorized removal or access licensed materials that are stored in controlled areas.”

Section 6.4.3 of Procedure CP2-HP-RP1046, “Sealed Radioactive Source Control,” requires, in part, the control of storage rooms and cabinets containing sealed sources by keeping secured to prevent theft or unauthorized removal.

Section 8.4.8 of Procedure CP4-HP-RP2102, “Radioactive Source Control,” requires, in part, that if sources are not in use, keep secured in a lockable storage container or room.

Contrary to the above, on February 21, 2011, the certificate holder failed to secure a licensed neutron producing source from unauthorized removal or access. Specifically, a 66 milliCurrie americium-beryllium calibration source located in a radioactive material storage area in the Building 720 lobby was not secured in a lockable storage container or room to prevent access or unauthorized removal while not in use.

This is a Severity Level IV violation (Enforcement Policy 6.7d) VIO 70-7001/2011-002-01.

- B. 10 CFR Part 76.120(c) states, in part, that the Corporation shall notify the NRC within 24 hours after the discovery of a unplanned contamination event that requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls, involves a quantity of material greater than five times the lowest annual limit on intake specified in appendix B of 10 CFR part 20 for the material, and causes access to the contaminated area to be restricted for any reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

Contrary to the above, on February 4, 2011, the licensee certificate holder to notify the NRC within 24 hours following an unplanned contamination event in the withdrawal room in Building C-310 that required access to the contaminated area by workers to be restricted for more than 24 hours by imposing additional radiological

controls, involved a quantity of material greater than five times the lowest annual limit on intake specified in appendix B of 10 CFR part 20 for the material; and caused access to the contaminated area to be restricted for reasons other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

This is a Severity Level IV violation. (Enforcement Policy 6.9d) VIO 70-7001/2011-002-02.

Pursuant to the provisions of 10 CFR 76.70, the United States Enrichment Corporation, Paducah Gaseous Diffusion Plant is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, and a copy to the NRC Senior Resident Inspector at the Paducah Gaseous Diffusion Plant within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation," and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (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 previous 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 of compliance 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, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, classified, or safeguards information so that it can be made available to the public 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 (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(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 at Atlanta, Georgia this 29<sup>th</sup> day of April 2011

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket No.: 70-7001

Certificate No.: GDP-1

Report No.: 70-7001/2011-002

Licensee: USEC-PGDP

Facility: Paducah Gaseous Diffusion Plant

Location: Kevil, KY 42053

Dates: January 1 through March 31, 2011

Inspectors: M. Miller, Senior Resident Inspector  
R. Prince, Acting Senior Resident Inspector  
R. Russell, Resident Inspector

Approved by: J. Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection

## **EXECUTIVE SUMMARY**

United States Enrichment Corporation  
Paducah NRC 2011 1st Quarter Integrated Inspection Report 70-7001/2011-002  
January 1 – March 31, 2011

U.S. Nuclear Regulatory Commission (NRC) resident inspectors conducted inspections at the Paducah Gaseous Diffusion Plant during normal and off normal shifts in the areas of plant operations, maintenance and surveillance, and management and controls. The inspectors performed a selective examination of activities which was accomplished by direct observation of safety-significant activities and equipment, tours of the facilities, interviews and discussions with personnel, independent verification of safety system status and limiting operation conditions, corrective actions, and a review of facility records. The NRC's program for overseeing the safe operation of uranium enrichment facilities is described in Manual Chapter (MC) 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program," dated March 21, 2008.

### **Plant Operations**

- The inspectors identified two violations of NRC requirements. One violation concerned a failure to properly secure a radioactive source and the second violation was associated with a failure to make a required 24-hour report. (Section 2)
- The inspectors observed routine operations in the central control facility, the cascade buildings, the feed vaporization facilities, product and tails withdrawal facilities, the toll and transfer facility, and all associated control rooms. The operations reviewed were performed in accordance with procedures. (Section 2)
- The inspectors toured portions of the cascade and uranium hexafluoride (UF<sub>6</sub>) handling areas to assess safety conditions, general plant cleanliness, and equipment status. The inspectors conducted a detailed semi-annual safety system review of the Process Gas Leak Detection (PGLD) System. The areas toured and systems inspected were being maintained in a safe configuration. (Section 2)

### **Surveillance Observations**

- During performance of periodic surveillances required by the Technical Safety Requirements (TSR) and plant procedures, the inspectors verified activities were conducted in accordance with the administrative and safety controls. The inspectors observed portions of the conduct of the surveillance tests and verified testing was done by qualified personnel, test data was accurate and complete, test discrepancies were rectified, and systems were properly restored to service. (Section 3)
- The inspectors verified surveillance activities were performed in a safe manner, TSR Limiting Conditions for Operations were entered when appropriate, test acceptance criteria was clear and conformed with the TSR and the Safety Analysis Report, and any deficiencies or out-of-tolerance values identified were properly resolved by appropriate management personnel. (Section 3)

### **Maintenance Observations**

- The inspectors verified the selected maintenance activities observed were adequate to ensure the reliable operation of the plant's safety systems, were performed in accordance with regulatory requirements and approved work documents, and removal and restoration of the affected components were properly accomplished. (Section 4)
- The inspectors confirmed maintenance activities were conducted using proper work control requirements and special authorizations for activities involving welding, confined space, fall protection, radiological controls, and other personnel safety controls. The inspectors verified the proper radiation work permits were used following the as-low-as-reasonably-achievable (ALARA) principles. (Section 4)
- The inspectors reviewed the lock-out/tag-out (LOTO) records for selected systems to ensure the impact on the system's operability was properly evaluated, the LOTO permits were properly prepared and implemented, and the systems were properly returned to the normal configuration after the completion of maintenance. The inspectors verified the proper selection and placement of tags on breakers, switches, and valves. (Section 4)
- The inspectors reviewed the licensee's program for tracking and trending maintenance activities and performance indicators to monitor system health to ensure reliability of systems and components. (Section 4)

### **Management Organization and Controls**

- The inspectors verified plant procedure changes were made in accordance with procedures and plant operations review committee (PORC) meetings were conducted to evaluate the changes. The inspectors verified procedure adherence policies were clear and appropriately disseminated. (Section 5)
- The inspectors verified the Assessment & Tracking Report (ATR) system was effective in resolving problems by proper assessment, prioritization, and tracking of issues. (Section 5)

### **Attachment**

List of Persons Contacted

List of Documents Reviewed

List of Items Opened, Closed, and Discussed

List of Inspection Procedures Used

## REPORT DETAILS

### 1. Summary of Plant Status

The facility was operated continuously during this inspection period, and the licensee performed routine operations and maintenance activities safely throughout the inspection period. The operators controlled power levels and product assay according to the production schedule.

### 2. Plant Operations (Inspection Procedure (IP) 88100)

#### a. Scope and Observations

The inspectors observed routine operations in the central control facility, the cascade buildings, the feed vaporization facilities, product and tails withdrawal facilities, the toll and transfer facility, and all associated control rooms. The inspectors observed control room personnel to determine whether proper control room staffing was maintained, access to the control room was properly controlled, and operations were conducted in a manner commensurate with the plant configuration and plant activities in progress.

The inspectors examined the status of selected control room annunciators, instrumentation, and recorder traces to identify abnormalities and to determine the plant status. The inspectors reviewed control room and plant shift superintendent log books, daily operating instructions, and corrective action program entries to obtain information concerning operating trends and activities.

The inspectors observed on-duty operators to verify the attentiveness in carrying out their assigned duties. The inspectors compared operator actions to approved procedures for ongoing activities and evaluated compliance with the appropriate technical safety requirements (TSRs) limiting condition for operation (LCO) action statements during abnormal conditions.

The inspectors toured portions of the cascade and uranium hexafluoride (UF<sub>6</sub>) handling areas to assess safety conditions, general plant cleanliness, and equipment status. The inspectors assessed the handling and storage of portable gas cylinders and flammable material, management of fire loads, postings and controls of radioactive material control zones and radiation areas, and implementation of criticality controls. The inspectors walked-down portions of the fire protection system to verify the correct alignment, equipment condition, and operability.

The inspectors conducted a detailed semi-annual safety system review of the Process Gas Leak Detection (PGLD) System. The inspectors reviewed PGLD operational data maintained by the system engineer. The inspectors interviewed the system engineer, plant shift superintendent, area control room operators, and instrument mechanics. The inspectors reviewed Procedure CP4-CO-CN6020t, "TSR Surveillance – Test Firing of PYR-A-Larm Type 1, High Voltage UF<sub>6</sub> Detection Systems in C-331/333/335/337," to evaluate operator actions for PGLD testing and identification of power supply locations.

The inspectors performed a detailed walk down of a representative sample of the accessible portion of PGLD safety system components to verify their operability in Buildings C-331, C-333, C-333A, C-335, C-337, C-310, C-315, and C-360. The inspectors examined system lineup drawings in comparison to the as-built configuration. The inspectors evaluated component conditions, hangers and supports for proper alignment, and major system components labeling. The inspectors assessed the interior of circuit breaker cabinets for proper labeling, the presence of debris and loose material, jumpers, and evidence of infestation.

The inspectors observed area control room (ACR) operators in Building C-333 as they performed cylinder switching operations using Procedure CP4-CO-CN2045a, "Operation of the C-333A and C-337A Vaporizer Facilities".

The inspectors determined that all required notices to workers were appropriately and conspicuously posted in accordance with 10 CFR 19.11. The inspectors confirmed that the licensee met the requirement to conspicuously post copies of NRC Form-3, "Notice to Employees," in sufficient quantities and locations to permit workers engaged in licensed activities to observe them on the way to or from any activity location as required. The inspectors reviewed the postings located in the vicinity of the normal employee access and egress locations

On February 23, 2011, while performing a validation of the licensee's source inventory program, the inspectors requested to verify the presence of a 66 mCi americium-beryllium (Am-Be) neutron calibration source stored in building 720. The inspector discovered that the source was stored in a shielded storage container but that the container was not locked and the room not secured. During followup, the inspectors learned from the source custodian that a leak test of the source had been performed on February 21, but the source had apparently not been secured after the leak test was completed. Upon discovery, the licensee locked and secured the source prior to the inspector leaving the area. The licensee also entered the item into the corrective action program (ATRC-11-0551).

The inspectors determined the licensee's failure to lock and secure the source from unauthorized removal or access was a violation of regulatory requirements. The inspectors determined the violation to be more than minor since the quantity of Am-241 in the source exceeded 10 times the 10 CFR 20, Appendix C limit for Am-241. The failure occurred despite a functional program to detect and deter security of radioactive material violations that included training, staff awareness, detection (including auditing), and corrective action.

10 CFR Part 76.60(d) stated, in part, that the Corporation shall comply with the applicable provisions of 10 CFR Part 20. 10 CFR Part 20.1801 stated, in part, that the licensee shall secure from unauthorized removal or access licensed materials that are stored in controlled areas. Section 6.4.3 of Procedure CP2-HP-RP1046, "Sealed Radioactive Source Control," required, in part, the radioactive materials user to control of storage rooms and cabinets containing sealed sources by keeping secured to prevent theft or unauthorized removal. Section 8.4.8 of Procedure CP4-HP-RP2102, "Radioactive Source Control," required, in part, if sources were not in use, they were kept secured in a lockable storage container or room.

Contrary to the above, on February 21, 2011, the licensee failed to secure a licensed neutron producing source from unauthorized removal or access. Specifically, a 66 milliCurrie americium-beryllium calibration source located in a radioactive material storage area in the Building 720 lobby was not secured in a lockable storage container or room to prevent access or unauthorized removal while not in use. This is a violation (VIO 70-7001/2011-002-01).

On February 3, 2011, in preparation for maintenance work to remove and replace the UF<sub>6</sub> evacuation header piping in Building C-310 above the product withdrawal room, the licensee formed a team to scope the job requirements. The job involved radiological contamination because the piping had visible uranium oxide on the outside and work area radiological surveys identified contamination. In addition, the area had legacy issues regarding chemical contaminants and asbestos, so the team was suited in a high level of personal protective equipment. The overhead space in the area was very limited and the team was required to crawl to get under piping and duct work. One of the members accidentally bumped a steam condensate line that caused the line to fail.

Steam and water flooded the area and water accumulated above the withdrawal room in areas that were concrete diked for structural support. The diked areas were not water tight so water leaked through holes, lighting fixtures, and other penetrations through the ceiling down to the product withdrawal area below. In the diked areas, the water accumulated faster than the water drained to the area below. The water accumulated to approximately 3.4 inches. The water draining through the ceiling carried radioactive contamination to the withdrawal room. The licensee roped off and posted the flooded area in the withdrawal room as a contamination control area.

The licensee conducted a walk down of the area to evaluate the event and formulate corrective actions. During the review, the licensee discovered the fire sprinkler heads installed above the withdrawal room were rated at 160°F and not the required minimum activation temperature of 200°F.

On February 4, the licensee made a 24 hour notification (EN 45692) to the NRC pursuant to Bulletin 91-01, Supplement 1, "Reporting Loss of Criticality Safety", to report the loss of one leg of a double contingency for criticality control. The first leg of the double contingency for a safe mass was maintained; however, the second leg limiting moderating liquids in open containers to less than 0.5 inches, as well as the sprinkler head activation temperature to be greater than 200°F, was not maintained. This issue was dispositioned in Inspection Report 70-7001/2011-201.

On February 7, during a facility tour, the inspectors noted the area in the withdrawal room involved in the event described above was still posted as a contamination control area. The inspectors questioned the licensee concerning the status of the contaminated area. Personnel were not aware that the area was still posted as a contaminated area and access to the contaminated area in the withdrawal room was restricted for more than 24 hours by imposing additional radiological controls.

10 CFR Part 76.120(c) stated, in part, that the Corporation shall notify the NRC within 24 hours after the discovery of a unplanned contamination event that required access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls, involved a quantity of material greater than five

times the lowest annual limit on intake specified in appendix B of 10 CFR part 20 for the material; and caused access to the contaminated area to be restricted for any reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

Contrary to the above, on February 4, 2011, the licensee failed to notify the NRC within 24 hours following an unplanned contamination event in the withdrawal room in Building C-310 that required access to the contaminated area by workers to be restricted for more than 24 hours by imposing additional radiological controls. This is a violation (VIO 70-7001/2011-002-02).

On December 2, 2010, a maintenance worker became contaminated while performing asbestos abatement work above the withdrawal room in Building C-310. After unsuccessful attempts to remove the contamination, the worker was sent to the on-site medical clinic where additional decontamination actions were implemented.

While reviewing the regulatory requirements for reporting, the inspectors noted an inconsistency between the regulatory requirements and the licensee's Safety Analysis Report (SAR). The inspectors noted that 10CFR Part 76.120 required the licensee to notify the NRC within 24 hours for events involving unplanned medical treatment of a radioactive contaminated individual at a medical facility. In contrast, the SAR Section 6.9, "Event Investigations and Reporting," allowed an exclusion for reporting contaminated workers treated at the on-site medical facility.

Upon further review, the inspectors noted that in October 1994, the NRC published *Certification of Gaseous Diffusion Plants; Final Rule*. In the *Summary of Requirements and Analysis of Public Comments*, the Corporation suggested a modification to Sec. 76.120 to reflect that both gaseous diffusion plants had onsite medical facilities that negated the need for reporting radioactive contamination of personnel. The NRC did not accept the suggestion and stated the purpose of the requirement was to make the NRC aware of any event in which a worker needs medical attention, either onsite or offsite, due to radiological contamination. The inconsistency between the SAR and the NRC's documented position regarding reporting requirements regarding contaminated workers requiring medical treatment was opened as an unresolved item. (URI - 07007001/2011002-03)

b. Conclusions

The inspectors identified two violations of NRC requirements. One violation concerned a failure to properly secure a radioactive source and the second violation was associated with a failure to make a required 24-hour report.

### **3. Surveillance Observations (IP 88102)**

#### **a. Scope and Observations**

The inspectors reviewed the performance of periodic surveillances required by the TSR and plant procedures to verify activities were being conducted in accordance with the administrative and safety controls. The inspectors reviewed the surveillance documentation to verify that required administrative approvals and tagouts were obtained before test initiation. The inspectors observed portions of the conduct of the surveillance test, checked to verify testing was done by qualified personnel, reviewed test data for accuracy and completeness, confirmed that surveillance test documentation was reviewed and that test discrepancies were rectified, and evaluated the restoration of the system to service.

The inspectors observed quality control (QC) inspectors in Building C-315 conduct monthly surveillances using Procedures CP4-QA-QI6085, "Inspection and Load Test of UF<sub>6</sub> Cylinder Handling Cranes", and CP4-QA-QI6089, "Structural and Mechanical Below-The-Hook Lifting Device Inspections". The inspectors observed QC inspectors in Building C-333 conduct tasks described in Procedure CP4-QA-QI6081, "Overhead and Semigantry Crane Inspection".

The inspectors observed instrument maintenance personnel conduct cell datum and cell deviation annual Surveillance Requirement (SR) 2.4.4.11-2, using Procedure CP4-GP-IM6130, "000 Cell Datum and Deviation Calibration". In addition, the inspectors observed operators using Procedure CP4-GP-IM4133, "Buggy Connection and Disconnection", in Buildings C-333 and in C-337.

The inspectors observed the operators perform a simulated power failure in Building C-337 using Procedure CP4-CO-CP6001z, "C-337 Emergency Diesel Power Systems Test Operation."

#### **b. Conclusions**

No findings of significance were identified.

### **4. Maintenance Observations (IP 88103)**

#### **a. Scope and Observations**

The inspectors observed selected maintenance activities in the field to determine if the activities were completed in accordance with approved work documents. Inspection activities consisted of observations, review of documents, and interviews of maintenance personnel. Maintenance activities were evaluated to determine if they were adequate in ensuring the reliable operation of the plant's safety systems and if activities were performed in accordance with regulatory requirements.

The inspectors evaluated if personnel were knowledgeable of the requirements contained in work packages and if they were complying with procedural requirements. The inspectors noted that acceptance criteria, where appropriate, was provided in work packages. The inspectors reviewed completed work package documents for accuracy and completeness. The inspectors reviewed procedures associated with the preventive maintenance, surveillance testing, and work control programs. The inspectors evaluated the status of equipment and systems in the licensee's plant tracking system. Inspectors examined day and back shift maintenance activities for the various functional areas (i.e., mechanical, electrical, instrument and control). The inspectors attended pre-job briefings conducted prior to maintenance activities.

The inspectors reviewed the lock-out/tag-out (LOTO) records for selected systems to determine if there was any impact on the system's operability status. For the LOTOs, the inspectors confirmed that systems were properly returned to the normal configuration after the completion of maintenance. The inspectors selected safety-related LOTOs in effect and independently evaluated if they were prepared and implemented by verifying proper selection and placement of tags on breakers, switches, and valves. Additionally, the inspectors verified that tagged components were in the required positions. The inspectors reviewed and walked down LOTO # 10-333-277 for a converter replacement and LOTO # 11-333-036 for a pump belt replacement in Building C-333.

The inspectors reviewed the licensee's program for tracking and trending maintenance activities and for maintaining equipment and component reliability. The inspector reviewed associated documentation and conducted discussions with responsible personnel. The inspectors evaluated the licensee's program for tracking and trending various performance indicators to monitor system health.

The inspectors evaluated maintenance activities and work control requirements for special authorization for activities involving welding, radiological controls, and personnel safety controls including the radiation work permits for appropriate as-low-as-reasonably-achievable (ALARA) reviews, and confined space, fall hazards, and other industrial hygiene permits and evaluations.

The inspectors observed the operators returning a cell on stream following maintenance activities using Procedure CP4-CO-CN200, "Charging a 00 or 000 Cell from Cascade and Placing On-Stream", in Building C-331.

The inspectors observed electrical maintenance personnel perform maintenance of cell circuit breakers and transformers in Building C-333 using Procedure CP4-GP-EM6130, "Dry Type Power and Distribution Transformers, Cleaning and Repair."

The inspectors observed operators perform leak testing following replacement of a UF<sub>6</sub> process recycle valve in Building C-333 using Procedures CP3-CO-CO2060, "Leak Testing 'Q' and 'AQ-NCS' Systems," CP2-CO-CO1032, "Shift Routines and Operating Practices," and Procedure CP2-SH-SH1031, "Confined Space Program." The inspectors reviewed the radiation, confined space, and safety and health work permits associated with the job.

The inspectors observed maintenance activities associated with a converter replacement in Building C-331 using Procedure CP2-CO-CN2030, "Inspection, Removal, Installation, and Handling of Uranium Contaminated Cascade Equipment". The inspectors observed QC inspectors at the hold points perform weld inspections using CP4-QA-QI4055, "Visual Examination of Welds and Cascade Equipment." The inspectors reviewed the permits associated with the activities and evaluated the supervisor, radiation safety personnel, confined space watch, and fire watch in the performance of their duties.

b. Conclusions

No findings of significance were identified.

5. **Management Organization and Controls (IP 88105)**

a. Scope and Observations

During this period, the inspectors evaluated plant procedures changes and attended plant operations review committee (PORC) meetings. The inspectors reviewed facility staffing and overtime records, including management approval of overtime. The inspectors verified personnel were notified and trained on procedure changes in a timely manner and procedure adherence policies were clear and appropriately disseminated. The inspectors reviewed the Assessment & Tracking Report (ATR) system (problem-identification system) to evaluate the licensee's effectiveness in resolving problems. The inspectors verified that deficiencies identified during other inspection activities were inputted and tracked using the ATR system. The inspectors attended the engineering's ATR screening meetings to evaluate the licensee's assessment and prioritization of issues.

b. Conclusions

No findings of significance were identified.

6. **Exit Meeting**

The inspection scope and results were summarized on March 31, 2011, with Mr. Steve Penrod and members of his staff. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified. No dissenting comments were received from the licensee.

## ATTACHMENT

### 1. List of Persons Contacted

<u>Name</u>	<u>Title</u>
*Keith Ahern	Production Support Manager
Paul Beane	Nuclear Safety and Quality Manager
*Mike Boren	Regulatory Compliance and Nuclear Operations
*Mike Buckner	Customer Service and Product Scheduling Manager
*Spencer Childers	Quality Control Manager
Sherrill Gunn	Operations Manager
*Lee Fink	Regulatory Engineer
*Robert Helme	Engineering Manager
*Tracey Henson	Nuclear Criticality Safety Manager
*O.E. Hickman	Radiation Protection Manager
*Jim Lewis	Plant Manager
Charlie Martin	Field Services Manager
*Louis Moffatt, II	Cascade Manager
* Steve Penrod	Vice President and General Manager
*Vernon Shanks	Regulatory Affairs Manager
*Stephen Smith	Security Manager
*Diane Snow	Environmental, Safety, and Health Manager
*Dave Stadler	Lead, Regulatory Engineer
*Jeffery Stephens	Regulatory Engineer
*Craig Willett	Maintenance Manager

\*Denotes those in attendance at the exit meeting.

### 2. List of Documents Reviewed

CP4-CO-CN6020t, TSR Surveillance – Test Firing of PYR-A-Larm Type 1, High Voltage UF<sub>6</sub> Detection Systems in C-331/333/335/337, Rev. 17  
CP4-CO-CN2045a, Operation of the C-333A and C-337A Vaporizer Facilities, Rev. 37  
CP2-HP-RP1046, Sealed Radioactive Source Control, Rev. 1  
CP4-HP-RP2102, Radioactive Source Control, Rev. 5  
CP4-QA-QI6085, Inspection and Load Test of UF<sub>6</sub> Cylinder Handling Cranes, Rev 9  
CP4-QA-QI6089, Structural and Mechanical Below-The-Hook Lifting Device Inspections, Rev. 6  
CP4-QA-QI6081, Overhead and Semigantry Crane Inspection, Rev, 6  
CP4-GP-IM6130, 000 Cell Datum and Deviation Calibration, Rev. 9  
CP4-GP-IM4133, Buggy Connection and Disconnection, Rev. 11  
CP4-CO-CP6001z, C-337 Emergency Diesel Power Systems Test Operation, Rev. 5  
CP4-CO-CN200, Charging a 00 or 000 Cell from Cascade and Placing On-Stream, Rev. 14  
CP4-GP-EM6130, Dry Type Power and Distribution Transformers, Cleaning and Repair, Rev. 5  
CP3-CO-CO2060, Leak Testing 'Q' and 'AQ-NCS' Systems, Rev. 0  
CP2-CO-CO1032, Shift Routines and Operating Practices, Rev. 18  
CP2-SH-SH1031, Confined Space Program, Rev. 5

**3. List of Items Opened, Closed, and Discussed**Opened

07007001/2011002-01	VIO	Unsecured Radioactive Source
07007001/2011002-02	VIO	Failure to Report Unplanned Contamination
07007001/2011002-03	URI	Report of Medical Care for Contaminated Worker

**4. List of Inspection Procedures Used**

88100	Plant Operations
88101	Configuration Control
88102	Surveillance Observations
88103	Maintenance Observations
88105	Management Organization and Controls