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

October 9, 2013

EAs 06-140, 08-280, 08-344, 11-056
ENs 47376, 48990, 49233

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

SUBJECT: PADUCAH GASEOUS DIFFUSION PLANT – U.S. ENRICHMENT CORPORATION
NRC INTEGRATED INSPECTION REPORT 70-7001/2013-004

Dear Mr. Van Namen:

This letter refers to the results of the above referenced U.S. Nuclear Regulatory Commission (NRC) inspection conducted at your Paducah facility from July 1 through September 30, 2013. The purpose of the inspections was to determine whether activities authorized by the certificate were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of the inspections. The NRC inspectors discussed the inspection results with members of your staff during exit meetings held on July 25, August 21, September 19, and September 26, 2013.

The inspections were 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. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspections consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Based on the results of the inspections, no findings of significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of NRC's "Rules of Practice," a copy of this letter and its Enclosure will be made available electronically for public inspection in the NRC Public Document Room, or from the NRC's Agencywide Documents Access and Management System (ADAMS), which is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this letter, please contact me at 404-997-4628.

Sincerely,

/RA/

James A. Hickey, Chief
Fuel Facility Inspection Branch 2
Division of Fuel Facility Inspection

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

Enclosure:
NRC Inspection Report 70-7001/2013-004
w/Attachment: Supplementary Information

cc: (See page 3)

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cc: (See page 3)

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cc:
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Acting General Manager
Paducah Gaseous Diffusion Plant
United States Enrichment Corporation
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	70-7001
Certificate No:	GDP-1
Report No:	70-7001/2013-004
Licensee:	United States Enrichment Corporation
Facility:	Paducah Gaseous Diffusion Plant
Location:	Kevil, KY 42053
Dates:	July 1 through September 30, 2013
Inspectors:	D. Hartland, Senior Resident Inspector M. Thomas, Senior Fuel Facility Inspector N. Pitoniak, Fuel Facility Inspector P. Startz, Fuel Facility Inspector
Approved by:	J. Hickey, Chief Fuel Facility Inspection Branch 2 Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

United States Enrichment Corporation
Paducah NRC 2013 3rd Quarter Integrated Inspection Report 70-7001/2013-004
July 1 – September 30, 2013

U.S. Nuclear Regulatory Commission (NRC) resident and regional inspectors conducted inspections at the Paducah Gaseous Diffusion Plant during normal and off normal shifts in the areas of plant operations, radiation protection, radioactive waste management, transportation, maintenance and surveillance, management organization and controls, and emergency preparedness. 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 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program," dated January 27, 2010.

Safety Operations

- The facility was operated safely and in accordance with regulations, the certificate, the Safety Analysis Report, and certificate holder policies and procedures. (Paragraph A.1)

Radiological Controls

- The Radiation Protection program was implemented in accordance with the certificate and regulatory requirements. (Paragraph B.1)

- Radioactive waste activities were performed in accordance with regulatory requirements and procedures. (Paragraph B.2)

- Shipments of radioactive materials were prepared and shipped in accordance with applicable regulations and plant procedures. Certificates of compliance were maintained current. Shipping records were properly completed and maintained in accordance with applicable regulations. (Paragraph B.3)

Facility Support

- Maintenance and surveillance of safety controls were implemented in accordance with the certificate and regulatory requirements. (Paragraph C.1)

- Management organization and control activities were implemented in accordance with the certificate and regulatory requirements. (Paragraph C.2)

- The Emergency Preparedness program was implemented in accordance with the Emergency Plan and regulatory requirements. (Paragraph C.3)

Special Topics

- Two event notifications and four previously identified enforcement actions were closed. A minor violation of NRC requirements was identified concerning the failure to follow a plant procedure which resulted in the spread of uranium daughter products from heeled material during a cylinder disconnect operation. One event notification remains open to review the certificate holder's corrective actions. (Paragraph D)

Attachment

List of Persons Contacted
List of Documents Reviewed
List of Items Opened, Closed, and Discussed
List of Inspection Procedures Used

REPORT DETAILS

Summary of Plant Status

All uranium enrichment operations have been permanently terminated and enrichment equipment is being deactivated. The facility continued efforts to evacuate remaining uranium hexafluoride (UF_6) from the shutdown cascade equipment. The facility is continuing limited operations including UF_6 repackaging.

A. Safety Operations

1. 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 alarm indicators, instrumentation, and data recorders to identify abnormalities and to determine the plant status. The inspectors reviewed control room and plant shift superintendent log entries, 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 action statements during abnormal conditions.

The inspectors toured portions of the cascade and UF_6 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 system alignment, physical condition, and operability.

The inspectors determined all required notices to workers were appropriately and conspicuously posted in accordance with the Title 10 of the Code of Federal Regulations Part 19 (10 CFR 19) and 10 CFR Part 21. The inspectors confirmed that the certificate holder 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.

b. Conclusion

No findings of significance were identified.

B. Radiological Controls

1. Radiation Protection (IP 88030)

a. Scope and Observations

The inspectors reviewed the 2012 Radiation Protection (RP) program review report to ensure that the program performance was being reviewed, at least annually, to comply with certificate requirements. The inspectors discussed organizational changes and personnel responsibilities with the acting Radiation Protection Manager (RPM) to determine the radiation protection function's responsibilities and independence from operations. The RPM reported to the Production Support Manager who in turn reported to the Plant Manager. The RPM also had direct access to the General Manager and the Plant Manager on radiation safety matters. The inspectors verified the RP program was independent of direct operations management.

The inspectors reviewed the RP program and associated implementation procedures to determine if they were consistent with NRC regulations and certificate requirements. Through interviews with responsible staff and a review of a representative sample of procedure changes, the inspectors determined that RP procedures were reviewed and updated when necessary and contained an appropriate level of detail for the operations involved. The inspectors determined that modifications of the RP program and procedures were reviewed, approved, and implemented in accordance with regulations and certificate requirements

The inspectors examined selected portable survey instruments and fixed monitoring equipment to verify that the equipment was calibrated and in good operating condition. The inspectors observed repair and calibration activities of radiation monitoring equipment. The inspectors reviewed records associated with the calibration of portable survey instruments and portal monitors. The inspectors reviewed calibration and source response check sources for appropriate configuration and to confirm suitability of sources for their intended function. Through interviews with health physics technicians assigned to various buildings and examination of selected radiation survey instruments throughout the facility, the inspectors observed that radiation survey equipment was source-checked to confirm proper operation prior to use and was maintained in accordance with certificate requirements and certificate holder's procedures.

The inspectors reviewed the certificate holder's implementation of the external dosimetry program and determined that the certificate holder maintained Total Effective Dose Equivalent (TEDE) results less than the regulatory limit of 5 rem per year. The inspectors reviewed the 2012 personnel dosimeter results as submitted to the certificate holder by their contractor and determined that the Lens Dose Equivalent and Shallow Dose Equivalent results were less than the regulatory limit of 15 rem and 50 rem/yr, respectively. The inspectors verified that the thermoluminescent detectors (TLDs) issued by the certificate holder were provided and processed by a supplier that was accredited by the National

Voluntary Laboratory Accreditation Program. The inspectors also confirmed that the certificate holder had adequate procedures for ensuring the timely issuance and processing of TLDs.

The inspectors reviewed the certificate holder's internal dosimetry program used to assess doses resultant from the uptake of uranium by workers and to verify the adequacy of the RP program. The certificate holder's calculation of internal dose to employees was primarily based on in-vitro urine bioassay samples using mass spectroscopy for uranium in coordination with the air sampling program to determine time periods of exposure and radionuclides involved. The inspectors reviewed procedures and documentation associated with bioassay exposure calculations and determined that, if samples results exceeded the certificate holder's administrative limits, additional sampling and isotopic analysis was conducted utilizing contract laboratories. The inspectors also confirmed that the certificate holder had implemented adequate procedures to ensure that routine bioassay samples were collected as required.

The inspectors toured the controlled access area and verified that radiological signs and postings accurately reflected radiological conditions within the posted area. Areas were posted in accordance certificate requirements. The inspectors also observed cylinder receipt activities and associated surveys, reviewed survey documentation, and interviewed health physics technicians and determined that surveys adequately evaluated the magnitude and extent of radiation levels in accordance with certificate requirements.

The inspectors reviewed the 2012 annual As Low As Reasonably Achievable (ALARA) Report and determined that RP program elements and personnel exposure reports were reviewed quarterly by the Radiation Protection Committee. The inspectors determined that ALARA program requirements were in compliance with the certificate requirements.

b. Conclusion

No findings of significance were identified.

2. Radioactive Waste Management (IP 88035)

a. Scope and Observations

The inspectors evaluated whether the certificate holder had established and maintained adequate procedures and quality assurance programs to ensure compliance with the requirements of 10 CFR Part 20 and 10 CFR Part 61 applicable to low-level radioactive waste form, classification, stabilization, and shipment manifests/tracking.

The inspectors reviewed procedures and observed performance of tasks related to radioactive waste. The procedures were clearly written and adequately delineated responsibilities related to radioactive waste management. The operators were familiar with their responsibilities and performed their tasks in accordance with facility procedures.

The inspectors reviewed the quality assurance program for radioactive waste management and determined that the certificate holder was performing the required audits. The findings from these audits were entered into the certificate holder's corrective action program for resolution.

The inspectors reviewed the certificate holder's program for classifying low-level radioactive waste. The inspectors reviewed the procedures for classifying waste as well as records relating to waste. The inspectors reviewed the certificate holder's program for ensuring that waste was properly packaged to ensure the waste form met the requirements of 10 CFR 61.56.

The inspectors reviewed the certificate holder's procedures for labeling waste shipments and tracking radioactive waste. The procedures were adequate to ensure that radioactive waste was properly labeled and specified actions to be taken should the shipments not reach the intended destination in the time specified. Additionally, the inspectors reviewed the procedures for placement, inspection, and repackaging of radioactive waste.

The inspectors performed walk-downs of selected radioactive material storage areas. The storage areas had adequate postings to ensure that the proper material was being stored in the area and the material was safely stored in accordance with the nuclear criticality safety requirements. The containers were properly labeled to reflect their contents and were in good physical condition.

b. Conclusion

No findings of significance were identified.

3. Transportation of Radioactive Material (IP 86740)

a. Scope and Observations

The inspectors evaluated whether the certificate holder had established and was maintaining an effective program to ensure radiological and nuclear safety during the receipt, packaging, delivery, and private carriage of licensed radioactive materials. The inspectors also evaluated whether transportation activities were in compliance with the applicable transport regulations.

The inspectors reviewed a number of shipping records involving the shipment and receipt of special nuclear material products and waste disposal. The certificate holder ensured that the appropriate documentation accompanied the packages being shipped. The certificate holder recorded the required information on the packaging and shipping orders including the transportation index, package activity, labeling, and placards.

The inspectors reviewed the training records to ensure that the certificate holder had administered 49 CFR 172.704 hazardous materials transportation training to affected personnel as required by the Department of Transportation and the certificate**.** The inspectors reviewed shipping records and surveys for recent cylinder shipments. The inspectors observed a survey of a cylinder receipt.

The inspectors verified that the certificate holder met the 10 CFR 71.21 conditions required to use the general license provision for transport of licensed material. The inspectors reviewed audits of the transportation program and determined the certificate holder was performing periodic audits of the program as required. The results of the audits were appropriately addressed in the corrective action program.

The inspectors reviewed the corrective actions taken for 10 CFR 71.95(a)(3) reports submitted in 2012 and 2013 related to the UX-30 package, ADAMS Accession Numbers ML12020A133, ML12062A109, ML12167A256, ML12227A367, and ML12354A130, ML13231A074 respectively. The certificate holder implemented the appropriate corrective actions to address the issues.

b. Conclusion

No findings of significance were identified.

C. Facility Support

1. Maintenance and Surveillance of Safety Controls (IPs 88102 and 88103)

a. Scope and Observations

The inspectors conducted onsite records reviews, observations of work activities, and interviewed cognizant staff and management to determine whether maintenance and surveillance activities were adequately implemented to assure that equipment and facilities used to protect health and minimize danger to life or property remained available and reliable to perform their safety function.

The inspectors verified that maintenance and surveillance activities performed on safety-related equipment and components as specified in the certificate holder's Safety Analysis Report (SAR) and TSRs were adequate to assure that the controls were available and reliable to perform their safety function when needed. The inspectors determined that adverse conditions related to the maintenance and surveillance program were sufficiently identified and tracked to completion.

The inspectors reviewed maintenance and surveillance work packages and procedures for accuracy and to ensure that testing challenged and verified operability of safety-related equipment and components per the accident analysis in the SAR. The inspectors noted that acceptance criteria, where appropriate, was provided in the work packages.

The inspectors evaluated maintenance activities and work control requirements for special authorizations for activities involving welding, radiological controls, and personnel safety controls including the radiation work permits, confined space permits, hot work permits, fall hazards precautions, and other industrial hygiene permits and evaluations.

The inspectors reviewed the lock-out/tag-out (LOTO) records for selected systems to determine if there was any impact on the systems' operability status. For the LOTOs, the inspectors confirmed that systems were properly returned to the normal configuration after the completion of maintenance.

The inspectors observed daily maintenance and operations plan-of-the-day meetings and attended pre-job briefings conducted prior to maintenance activities. The inspectors also observed maintenance work activities on selected systems and processes, and determined that work activities were conducted in accordance with certificate holder requirements and approved procedures, and that personnel were knowledgeable of the requirements.

The inspectors noted that effective corrective actions were taken when safety controls failed or were degraded. The inspectors verified that post-maintenance testing and calibrations as specified by the certificate holder requirements were adequately performed prior to restoring equipment to operational status. Completed work packages were adequately reviewed prior to returning equipment to service.

The inspectors reviewed surveillance documentation to verify that required administrative approvals and tag-outs were obtained before test initiation. The inspectors observed portions of the surveillance test and verified that testing was done by qualified personnel, reviewed test data for accuracy and completeness, and confirmed the safety systems were properly returned to service.

The inspectors reviewed the certificate holder's problem identification and resolution program and determined that performance issues relating to the maintenance and surveillance of safety related equipment and components were entered into the corrective action program, and evaluated the adequacy of corrective actions taken.

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

b. Conclusion

No findings of significance were identified.

2. Management Organization and Controls (IP 88105)

a. Scope and Observations

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

b. Conclusion

No findings of significance were identified.

3. Emergency Preparedness (IP 88050)

a. Scope and Observations

The inspectors interviewed staff, reviewed records, and determined that changes made to the Emergency Plan had been properly coordinated within the Emergency Preparedness

program. The inspectors reviewed Emergency Plan implementing procedures with significant revisions since the last emergency preparedness inspection and determined that the changes were in compliance with the Emergency Plan. The inspectors discussed the certificate holder's emergency call list and verified that the list was current.

The inspectors reviewed training records and interviewed the certificate holder's staff regarding Emergency Plan training in the past year. The inspectors determined that the programmatic training requirements remained in compliance with the Emergency Plan. The inspectors verified that the certificate holder had provided adequate training for its fire department personnel and emergency equipment as required by the Emergency Plan and that the individuals responsible for utilizing the equipment maintained qualifications. The inspectors verified that the certificate holder provided training for hypothetical emergency situations which were effective and consistent with the frequency and performance objectives required in the Emergency Plan. The inspectors attended a security emergency drill conducted the week of July, 21, 2013 with the security staff involving a simulated accidental shooting at its C-200 firing range.

The inspectors reviewed written agreements with off-site agencies and verified that organizations required by the Emergency Plan had up-to-date agreements. The inspectors interviewed off-site organization representatives including a local fire department and a local hospital, and determined that they maintained an adequate understanding of the written agreements. The inspectors verified that routine communication checks with onsite and off-site organizations were being performed at a frequency as required by the Emergency Plan.

The inspectors conducted off-site inspections of all facility-owned and operated community alarm siren towers and determined that the equipment was being adequately maintained. The inspectors observed emergency equipment and apparatus in its onsite fire department and verified that the equipment inventories were maintained as required by the certificate holder's procedures. The inspectors toured the Emergency Operation Center and verified that the areas were readily assessable and the appropriate amount of communication equipment was maintained. The inspectors reviewed the accountability procedure and verified that accountability meeting locations were accessible.

The inspectors reviewed documentation of self-assessments and past events since the last Emergency Preparedness inspection which required the implementation of the Emergency Plan. The inspectors verified that any problems or deficiencies associated with the performance of the Emergency Plan or activity were entered into the corrective action program and either corrected or were progressing through the corrective action process.

b. Conclusion

No findings of significance were identified.

C. Special Topics

1. Follow-up on Previously Identified Issues

a. Enforcement Action (EA)-06-140: Violation of 10CFR76.7, Retaliation Against a Former Quality Control Manager (Closed)

As part of the alternate dispute resolution (ADR) settlement agreement, the certificate holder agreed to a number of actions including having a third party conduct an independent assessment of the safety conscious work environment (SCWE) and provide SCWE training (including case studies) to all employees. Corrective actions to address the weaknesses identified from the assessment were incorporated into the certificate holder's safety culture improvement plan. Those included improvements/enhancements to further develop the SCWE program and development of an assessment tool to periodically evaluate the effectiveness of the SCWE program. The inspectors reviewed the corrective actions and had no further issues. This Confirmatory Order is closed.

b. EA-08-280: Willful Violation, Package Containing Classified Information Mailed to Address That was not an Approved Classified Mailing Address (CMA) (Closed)

As part of the ADR settlement agreement, the certificate holder agreed to a number of corrective actions including: CMA procedural revisions and related training; the continuation of recurring training for Operations and Maintenance supervisor's to reinforce "conduct of" principles and procedure compliance; the conduct of interactive informational training sessions with employees to identify critical job tasks and tools to prevent and protect against causing adverse events; and, lessons learned communications with all staff. The inspectors reviewed the corrective actions and had no further issues. This Confirmatory Order is closed.

c. Unresolved Item (URI) 70-7001/2009-004-01 (EA-08-344): Operators Deliberately Concealed Damaged Equipment and Falsified records of a Procedural Error While Moving a UF_6 Cylinder (Closed)

As part of the ADR settlement agreement, the certificate holder agreed to a number of corrective actions including addressing the willful actions of employees, procedure use, and recurring training for Operations and Maintenance supervisor's to reinforce "conduct of" principles and procedure compliance.

The certificate holder also agreed to conduct a review of this incident and a limited number of other significant events to determine if weaknesses in any of the 13 safety culture components, as identified in NRC Regulatory Information Summary 2006-13, caused or significantly contributed to the event. The evaluation concluded an overall weakness existed in the four components that make up the human performance area, namely: work practices, resources, work control, and decision making.

Corrective actions to address this weakness were incorporated into the certificate holder's safety culture improvement plan. Those included actions to increase the rigor of the corrective action program by requiring organizational managers to review apparent cause determinations and corrective action plans associated with precursor errors and conduct a

review of employee training to ensure that human performance elements were adequately addressed. The inspectors reviewed the corrective actions and had no further issues. This Confirmatory Order is closed.

d. EA-11-056: Operator Willfully Violated Radiation Protection Procedures (Closed)

As part of the ADR settlement agreement, the certificate holder agreed to a number of corrective actions including enhancing new employee orientation and General Employee Training to ensure that personnel clearly understand the consequences of deliberate acts of non-compliance with regulations and expanding its independent assessment of the SCWE (required by EA-06-140) to include an assessment of the safety culture components of decision making and work practices.

The results from the more recent assessment determined that improvements implemented as a result of the assessment required by EA-06-140 were effective. The certificate holder also consulted with several industry groups and sources and concluded that it was consistent with other facilities with regards to the metrics used to measure the health of the site safety culture. The inspectors reviewed the results of the latest assessment and had no further issues. This Confirmatory Order is closed.

2. Event Follow-up

a. Licensee Event Report (LER) 70-7001/2011-008: C-310A Side Accumulator Safety System Failure (Closed)

The Building C-310A Side Accumulator developed a linear defect in the vessel shell that resulted in a small UF_6 release on October 21, 2011. The release was contained to the immediate area inside the building. The 60-day report was made under 10 CFR 76.120(c)(2) when equipment was disabled that was required by TSRs to prevent UF_6 releases. TSR 2.3.5.6 was a design feature that required the withdrawal area UF_6 accumulators to have a minimum required metal thickness in accordance with ASME requirements.

The certificate holder identified that the root cause was that the repair of a defect identified during fabrication of the vessel by an approved vendor was accomplished with less than adequate quality control. During review for extent of condition, the certificate holder determined differences in vintage, material of construction, sign, and manufacturer eliminated any significant commonality with other similar vessels.

As corrective action, the certificate holder repaired the vessel in accordance with ASME requirements and inspected the rest of the vessel to ensure no other such defects existed. The certificate holder also put a restriction on applicable activities performed by the vendor until a surveillance was performed to verify that appropriate correction actions were implemented. The inspectors reviewed the certificate holder's event investigation, work package that was used to repair the vessel and other corrective actions and had no further issues. This item is closed.

b. URI 70-7001/2013-003-02 (EN 48990): Inadvertent Contamination Event During Heel Cylinder Operations (Closed)

On April 30, 2013, after operators disconnected a cylinder in an autoclave in Building C-337A, radioactive contamination was discovered on the cylinder, on the grating within the autoclave, and on the autoclave locking ring. The cylinder was removed to a saddle in an adjacent area for decontamination. Due to the contamination, access requirements to the area were increased from a contamination control zone to a contaminated area and decontamination efforts were initiated. There was no indication of measureable personnel exposure as evidenced by negative air samples, bioassays, and personnel monitoring (whole-body frisker) surveys. Because the area/cylinder could not be decontaminated and radiological controls returned to the original state within 24 hours, the NRC Operations Center was notified in accordance with 10 CFR 76.120.

The certificate holder determined that the root cause for the event was that the operators failed to recognize a pressure spike in the cylinder during heeling operations and did not request additional management/health physics oversight during the cylinder disconnect as required by plant procedure. The failure resulted in the spread of uranium daughter products from the heeled material during the disconnect. As corrective action, the certificate holder performed operations crew briefings describing the circumstances of the event including a reiteration of the required procedure steps. The procedure was also revised to aid in minimizing the potential for the cylinder pressure spike to occur.

The inspectors determined the failure to follow procedure is a violation of certificate requirements. However, the failure was determined to be of minor significance because the spread of contamination did not result in measureable personnel exposure as evidenced by negative air samples, bioassays, and personnel monitoring (whole-body frisker) surveys. Therefore, the violation will be dispositioned as a minor violation and formal enforcement action will not be taken. The inspectors reviewed the corrective actions and had no further issues. This item is closed.

c. LER 70-7001/2013-01-00 (EN 49233): Unplanned contamination event at C-337 (Open)

On August 2, 2013, while health physics technicians were checking radiological control wrapping in a waste storage area in the C-337 process building, radiological contamination was discovered on the floor around some valve subassemblies. A contamination area was established around the affected area and, because the area could not be decontaminated and radiological controls returned to the original state within 24 hours of discovery, the certificate holder notified the NRC Operations Center in accordance with 10 CFR 76.120. This event will remain open pending a review of the certificate holder's root cause investigation and corrective actions, as documented in the 60-day report to the NRC.

D. Exit Meeting

The inspection scope and results were summarized on July 25, August 21, September 19, and September 26, 2013, with Mr. M. Buckner, Acting General Manager, at the quarterly exit meeting with members of his certificate holder's staff. The certificate holder acknowledged the issues presented. The inspectors confirmed no proprietary information was identified.

SUPPLEMENTAL INFORMATION

1. List of Persons Contacted

Name	Title
B. Bell	Waste Management/Environmental Compliance Manager
M. Boren	Regulatory Compliance Manager
M. Buckner	Plant Manager
D. English	Nuclear Safety and Quality Manager
M. Grisham	Acting Health Physics Manager
S. Gunn	Operations Manager
S. McKinney	Engineering Manager
L. Moffatt, II	Cascade Manager
V. Shanks	Regulatory Affairs Manager
S. Smith	Security Manager
D. Snow	Environmental, Safety, and Health Manager
C. Willett	Maintenance Manager

2. Partial List of Documents Reviewed

Records:

CP-22650, Flat Rock/30B Cylinder Shipment Survey Results, dated August 20, 2013
PCR-PDF-12-989961, Plant Change Review for CO2-EP-EP5058

Procedures:

CP2-EP-EP5030, Personnel Accountability, Revision (Rev). 12
CP2-EP-EP5031, Oil and HAZMAT Spills and Releases, Rev. 22
CP2-EP-EP5032, Plant Emergency Management Program, Rev. 9
CP2-EP-EP5042, Termination and Recovery after Emergencies, Rev. 3
CP2-EP-EP5043, Medical Emergencies, Rev. 5, Change C
CP2-EP-EP5044, Mutual Emergency Assistance, Rev. 4, Change C
CP2-EP-EP5046, Emergency Operations Center, Rev. 16
CP2-EP-EP5052, Emergency Response Drills and Exercises, Rev. 9
CP2-EP-EP5055, Emergency Classification, Rev. 21
CP2-EP-EP5056, Emergency Notification, Rev. 14
CP2-EP-EP5057, Emergency Monitoring, Rev. 7
CP2-EP-EP5058, Maintenance of Emergency Facilities & Equipment, Rev. 14
CP2-EP-EP5059, Emergency Communications, Rev. 5
CP2-EP-EP5062, Fire Emergencies, Rev. 8
CP2-HP-RP1030, Conduct of Radiological Operations, Rev. 2, dated August 27, 2010
CP2-HP-RP1032, Radiological Protection as Low as Reasonably Achievable (ALARA) Program, Rev. 0, Change B, dated March 29, 2011
CP2-HP-RP1036, Radiological Protection Training and Qualification, Rev. 1, dated October 13, 2009
CP4-HP-RP2101, Performance of Radiological Surveys, Rev. 8, dated August 2, 2012
CP4-HP-RP1105, Health Physics Self-Assessments and Internal Surveillances, Rev. 4, Change B, dated March 22, 2012
CP4-HP-RP2106, Posting and Tagging Requirements, Rev. 7, Change F, dated July 12, 2013
UE2-HP-RP1030, Conduct of Radiological Operations, Rev. 4, Change B, dated October 23, 2012
UE2-HP-RP1031, Radiological Work Permits, Rev. 4, dated March 31, 2006

UE2-HP-RP1034, Dosimetry Program Standards, Rev. 3, Change B, dated May 28, 2010
CP2-HP-RP1046, Sealed Radioactive Source Control, Rev. 2, dated March 9, 2012
CP2-HP-IO2030, Use of Electronic Personal Dosimeters, Rev. 3, dated May 18, 2011
CP4-HP-DS-7000, Routine and Special In Vitro Bioassay, Rev. 4, dated March 22, 2012
CP4-HP-DS-7603, Calculation of Intake Estimates and Assignment of Internal Dose from Bioassay Measurements, Rev. 2, dated March 28, 2011
CP2-EW-WM1039, Preparation of Waste for Commercial Disposal, Rev. 7
CP4-EW-WM2107, Operation of Low-Level Radioactive Waste Storage Facilities, Rev. 7
CP4-EW-WM2110, Waste Container Handling, Overpacking, and Transportation, Rev. 12
CP2-MA-PK1030, UF6 Cylinder and Receipt, Rev. 5
CP4-MA-PK1100, Hazardous Waste Shipment, Rev. 4
CP4-MA-PK1103, Shipment of UF6 Cylinders, Rev. 11
CP4-QA-QI6094, UX-30 Annual Weld Inspection and In-Service Inspection, Rev. 4
CP4-TE-EA1002, Shipment and Receipt of UF6 Cylinders, Protective Structural Packages, and Miscellaneous Equipment, Rev. 4
CP4-TE-EA1003, UF6 Cylinder and Protective Shipping Equipment Tracking, Rev. 1

Condition Reports Review:

ATRC-13-0416
ATRC-13-0402
ATRC-13-0127
ATRC-13-0398
ATRC-13-0860
ATRC-13-1467
ATRC-13-0650
ATRC-13-1589
ATRS-10-3234B

Other Documents:

KP-EM-S11012 Emergency Management Triennial Audit
KP-OP-S13002 Shift Operations Assessment
KP-SE-S12023 Memo for Security Program, Assessment
KP-OP-S12015 UF6 Handling Assessment
KP-PS-S12008 Radiological Protection Controls Assessment
KP-CS-2011-A260, CS&PS and UF6 Audit
KP-EV-S11008 Waste Management Assessment
KP-TR-S10016 SAT Training for EP Assessment
KP-TR-S10014 Non-SAT Training for EP Assessment
KP-OP-S10002 Fire Protection Assessment
KP-PS-S12008, NS&Q Surveillance Radiological Protection Controls, dated October 19, 2012
KP-RP-S11011, NS&Q Radiation Protection, dated December 29, 2011
Annual Radiation Protection Program Report for Calendar Year 2012, dated August 14, 2013
2012 PGDP Occupational Radiation Exposure Summary, dated April 5, 2013
Radiation Protection Committee (RPC) Meeting Minutes First Quarter 2013, dated March 21, 2013
RP001CR, Radiological Worker Initial Training Module, Rev. 5
RWP-13-0001, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0002, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0003, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0004, Radiation Work Permit, Rev. 0, dated December 10, 2012

RWP-13-0005, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0006, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0007, Radiation Work Permit, Rev. 1, dated April 2, 2013
RWP-13-0008, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0009, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0010, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0011, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0012, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0013, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0014, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0015, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0016, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0017, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0018, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0019, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0020, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0021, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0022, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0023, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0024, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0025, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0026, Radiation Work Permit, Rev. 0, dated December 10, 2012
RWP-13-0027, Radiation Work Permit, Rev. 0, dated December 10, 2012
Health Physics Directive 2012-001, Surveying Cylinders When Exiting Autoclave and Feed/Withdrawal Stations, dated March 1, 2012
Health Physics Directive 2012-004, Including Dates with Quality Records, dated March 1, 2012
Health Physics Directive 2012-007, Instrument Calibration Due Date, dated March 1, 2012
Health Physics Directive 2012-011, RWP Approval Authority, dated March 1, 2012
Health Physics Directive 2012-020, Documenting Health Physics Surveys, dated March 1, 2012
Health Physics Directive 2012-023, Personnel Authorized to Sign as Reviewer on Health Physics Surveys, dated March 1, 2012
UX-30 Safety Analysis Report, Rev. 2, dated March 2011
Certificate of Compliance for 9196, UX-30 Package
Department of Transportation Competent Authority Certification for a Non-Fissile or Fissile Excepted Uranium Hexafluoride Package Design, Certificate USA/0592/H(M)-96, Rev. 2
Department of Transportation Competent Authority Certification for a Non-Fissile or Fissile Excepted Uranium Hexafluoride Package Design, Certificate USA/0679/H(U)-96, Rev. 4
Department of Transportation Competent Authority Certification for a Type Fissile Radioactive Materials Package Design, Certificate USA/0585/AF-96, Rev. 3

3. List of Items Opened, Closed, and Discussed

Opened

70-7001/2013-01-00 (EN 49233)	LER	Unplanned contamination event at C-337

Closed

06-140	EA	Violation of 10 CFR 76.7, Retaliation Against a Former Quality Control Manager (Paragraph C.1)
08-280	EA	Willful Violation, Package Containing Classified Information Mailed to Address That was not an Approved Classified Mailing Address (CMA)
70-7001/2009-004-01 (EA-08-344)	URI	Operators Deliberately Concealed Damaged Equipment and Falsified records of a Procedural Error While Moving a UF6 Cylinder
11-056	EA	Operator Willfully Violated Radiation Protection Procedures
70-7001/2011-008 (EN47376)	LER	C-310A Side Accumulator Safety System Failure
70-7001/2013-003-02 (EN 48990)	LER	Inadvertent Contamination Event During Heel Cylinder Operations

4. List of Inspection Procedures Used

86740	Transportation of Radioactive Materials
88030	Radiation Protection
88035	Radioactive Waste Management
88050	Emergency Preparedness
88100	Plant Operations
88102	Surveillance Observations
88103	Maintenance Observations
88105	Management Organization and Controls