



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

October 30, 2012

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

**SUBJECT: NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION
REPORT 70-7001/2012-004**

Dear Mr. Van Namen:

This letter refers to the results of the above-referenced Nuclear Regulatory Commission (NRC) inspections conducted at your Paducah facility from July 1 through September 30, 2012. 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 findings with members of your staff during exit meetings held on August 2, 2012, September 13, 2012, September 20, 2012, and September 27, 2012.

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 inspection, no findings of significance were identified. In accordance with 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 document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

R. Van Namen

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Should you have any questions concerning this letter, please contact José M. Díaz-Vélez at (404) 997- 4736.

Sincerely,

/RA/

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

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

Enclosure:
NRC Inspection Report 70-7001/2012-004
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

R. Van Namen

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Distribution w/encl:

PUBLIC

P. Silva, NMSS

T. Liu, NMSS

O. Siurano, NMSS

J. Calle, RII

M. Crespo, RII

J. Díaz, RII

R. Russell, RII

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R. Van Namen

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cc w/encl:

Mike Buckner
General Manager and Plant Manager
Paducah Gaseous Diffusion Plant
United States Enrichment Corporation
Electronic Mail Distribution

Vernon Shanks
Manager, Nuclear Regulatory Affairs
Paducah Gaseous Diffusion Plant
United States Enrichment Corporation
Electronic Mail Distribution

Steven R. Penrod
Vice President, Enrichment Operations
USEC Inc.
P.O. Box 628
Piketon, OH 45661

Steve A. Toelle
Director
Regulatory Affairs
United States Enrichment Corporation
Electronic Mail Distribution

R. M. DeVault
Manager
Regulatory Oversight
Department of Energy
Electronic Mail Distribution

G. A. Newtown
Paducah Site Office
Department of Energy
Electronic Mail Distribution

Dewey Crawford
Manager
Radiation Health Branch
Cabinet for Health and Family Services
275 East Main Street
Mail Stop HS-1CA
Frankfort, KY 40601-0001

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-7001

Certificate No.: GDP-1

Report No.: 70-7001/2012-004

Licensee: United States Enrichment Corporation

Facility: Paducah Gaseous Diffusion Plant

Location: Kevil, KY 42053

Dates: July 1 through September 30, 2012

Inspectors: J. Díaz-Vélez, Senior Fuel Facility Inspector
L. Pitts, Senior Fuel Facility Inspector
R. Gibson, Senior Fuel Facility Inspector
D. Hartland, Senior Fuel Facility Inspector
R. Russell, Resident Inspector
G. Goff, Fuel Facility Inspector
P. Startz, Fuel Facility Inspector
M. Toth, Fuel Facility Inspector

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

Enclosure

EXECUTIVE SUMMARY

United States Enrichment Corporation
Paducah NRC 2012 3rd Quarter Integrated Inspection Report 70-7001/2012-004
July 1 – September 30, 2012

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, maintenance and surveillance, plant modifications, 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 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program," dated January 27, 2010.

Safety Operations

- Management controls were effective in achieving continued safe operation of the facility. (Paragraph A.1)
- The facility 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 regulatory requirements and the reviewed aspects were found adequate. (Paragraph B.1)
- The processing, control, release, and reporting of information to the NRC regarding radioactive liquid and airborne effluents were found in compliance with regulations and the certificate requirements. (Paragraph B.2)
- The effluent control and environmental control programs ensured that releases of radioactivity to the environment provided minimal impact on the environment and the public. (Paragraph B.2)
- Radioactive waste management activities were performed in accordance with regulatory requirements and procedures. (Paragraph B.3)
- Shipments of radioactive materials were prepared and shipped in accordance with applicable regulations and plant procedures. Certificates of compliance for shipping containers were maintained current. Shipping records were properly completed and maintained in accordance with applicable regulations. (Paragraph B.4)

Facility Support

- Maintenance activities for “Q,” “AQ,” and other safety significant structures, systems, and components were performed to ensure reliable safe operation of the plant and plant equipment. (Paragraph C.1)
- Surveillance activities of safety significant systems were conducted in accordance with the technical safety requirements and nuclear criticality controls. (Paragraph C.2)
- Plant procedures, including temporary standing orders, were maintained, reviewed, and changed in accordance with the certificate requirements and plant operations. (Paragraph C.3)
- The plant operations review committees reviewed activities important to safety and provided management with recommendations for continued safe plant operations. (Paragraph C.3)
- The quality assurance program was implemented to ensure the safe operation of equipment and systems important to safety, including "Q" and "AQ" systems and components. (Paragraph C.3)
- The certificate holder developed and implemented an appropriate configuration control program, capable of handling facility design changes and modifications. (Paragraph C.4)
- The certificate holder maintained their emergency preparedness program in a state of operational readiness. (Paragraph C.5)
- The facility emergency preparedness program was properly coordinated with offsite support organizations. (Paragraph C.5)
- The graded biennial emergency preparedness exercise was implemented in accordance with the emergency plan and regulatory requirements and the associated exercise and facility critiques identified areas for improvements. (Paragraph C.6)
- The certificate holder developed an adequate exercise scenario that tested and challenged their emergency plan and implementing procedures during the simulated emergency. (Paragraph C.6)

Special Topics

- There were no events reported during the inspection period. (Paragraph D.1)
- The NRC’s review of Unresolved Item (URI) 07007001/2011-004-01, Process Gas Leak Detectors (PGLDs) issue continued and the issue remains open. (Paragraph D.2)

Attachment

List of Persons Contacted

List of Documents Reviewed

List of Items Opened, Closed, and Discussed

List of Inspection Procedures Used

List of Acronyms Used

REPORT DETAILS

Summary of Plant Status

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

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 recorder traces 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 (CAP) 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 (UF₆) 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 evaluated the Radiation Protection (RP) program to verify that the program was being implemented and documented in accordance with regulatory requirements. The inspectors discussed organizational changes and personnel responsibilities with the Radiation Protection Manager (RPM). 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 last annual RP program review completed by the RP staff, which covered calendar year 2011. The review evaluated regulatory and procedure compliance, technical performance, implementation, and programmatic effectiveness of the RP program. The inspectors verified that the certificate holder maintained adequate records that documented the appropriate identification, evaluation, and resolution of program review and assessment findings in the Assessment and Tracking Report (ATR) system.

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 modifications, 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 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 of health physics technicians assigned to various buildings and examination of selected radiation survey instruments and air sampling equipment throughout the facility, the inspectors noted that the equipment and instrumentation observed while in use was in current calibration. The inspectors further noted that radiation survey equipment was source-checked to confirm proper operation before being used.

The inspectors reviewed the certificate holder's internal dosimetry program used to assess doses resultant to 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 sample results exceeded the certificate holder's administrative limits, additional sampling and isotopic radionuclide analysis was performed utilizing contract laboratories. The inspectors also confirmed that the certificate holder had implemented adequate procedures to ensure that routine and special bioassay samples were collected as required.

The inspectors reviewed the certificate holder's implementation of its external dosimetry program and determined that the certificate holder issued thermoluminescent dosimeters (TLDs) to 1,739 employees, contractors, and visitors during 2011. The inspectors verified that the 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 retrieval of TLDs.

The inspectors reviewed selected personnel exposure data to verify that exposures were maintained as low as reasonably achievable (ALARA) and within the occupational radiation exposure limits specified in 10 CFR 20.1201. The data for 2012 did not change significantly from 2011. The majority of personnel who exceeded 100 millirem (mrem) external dose deep dose equivalent (DDE) were personnel working with UF₆ cylinders. In 2012, no occupationally exposed individuals monitored by the certificate holder exceeded the certificate holder's administrative dose limit of 500 mrem, which was ten percent of the occupational dose limits.

The inspectors reviewed skin dose estimates associated with personnel contamination in 2012. The certificate holder used the VARSKIN code to estimate skin doses. VARSKIN is an algorithm typically used by the NRC staff to independently verify the certificate holder's (or the licensee's) submittals pertaining to skin dose assessments. The inspectors determined that the certificate holder had implemented the external radiation monitoring program in accordance with regulatory requirements. Combined with the findings regarding the certificate holder's internal dosimetry program, the inspectors determined that occupational radiation doses were properly monitored and well below the applicable regulatory limits.

The inspectors reviewed radiological signs and postings within various process buildings and entrances leading into the controlled areas/buildings to determine compliance with regulatory requirements. Radiological areas were posted in accordance with certificate requirements and accurately reflected radiological conditions in the areas. The inspectors walked down numerous process buildings and noted that the facilities were adequately posted.

The inspectors evaluated the operation of stationary air samples in the controlled areas. The inspectors observed RP technicians and other plant employees performing routine surveys in process buildings and at the exit locations from controlled areas and determined that the technicians demonstrated adequate contamination survey techniques.

The certificate holder's ALARA program was reviewed to determine if the program and ALARA goals were developed and implemented in accordance with the certificate. On a quarterly basis, the certificate holder conducted Radiation Protection Committee meetings detailing ALARA goals and exposure summaries to identify trends. In cases where exposures were elevated, consideration was given to ways for reducing exposures. The certificate holder was below the ALARA goals it had set for 2012.

b. Conclusion

No findings of significance were identified.

2. Effluent Control and Environmental Protection (IP 88045)

a. Scope and Observations

The inspectors reviewed program changes since the last inspection and verified that the changes did not reduce the effectiveness of the program. The inspectors also reviewed a number of self assessments and audit reports and verified issues identified were placed in the certificate holder's corrective action system for disposition. The inspector reviewed the most recent effluent reports and determined that radioactivity released to the environment was well below applicable regulatory limits.

The inspectors observed analyses of environmental samples in the laboratory and determined that the quality control of measurements was implemented in accordance with certificate requirements. The inspectors also observed personnel collect samples of liquid and gaseous effluents and determined that the activities were performed in accordance with regulatory requirements. The inspectors observed that the sampling equipment at the monitoring stations was well maintained and calibration of measurement devices was current.

b. Conclusion

No findings of significance were identified.

3. Radioactive Waste Management (IP 88035)

a. Scope and Observations

The inspectors evaluated whether the certificate holder has 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.

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 CAP for resolution.

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 were provided 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 tours of active 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 procedures. The containers were properly labeled to reflect their contents and were in good physical condition.

b. Conclusion

No findings of significance were identified.

4. Transportation of Radioactive Material (IP 86740)

a. Scope and Observations

The inspectors evaluated whether the certificate holder has established and maintained an effective program to ensure radiological and nuclear safety during the receipt, packaging, and shipping of radioactive materials. The inspectors also evaluated whether transportation activities complied with the applicable U.S. Department of Transportation (DOT) 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 that included the transportation index, package activity, labeling, and applicable placards.

The inspectors reviewed training records to ensure that the certificate holder had administered 49 CFR 172.704 hazardous materials transportation training to applicable personnel as required by the DOT regulations and their certificate. The inspectors verified packaging and transportation personnel qualifications were up-to-date.

The inspectors observed the loading of 30-B product cylinders into UX-30 overpacks on a flatbed trailer. The inspectors noted crane safety operations and radiological surveys were performed in accordance with applicable procedures. The inspectors observed final shipping preparations, including installation of the ball lock mechanisms to secure the overpack lids, installation of tamper installation devices, placards, and transportation index labels, were conducted per site procedures. The inspectors also observed several final shipment walk downs conducted by packaging and transportation specialists prior to issuance of the bill of lading. These walk downs were conducted per shipping procedure checklists.

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.

b. Conclusion

No findings of significance were identified.

C. Facility Support

1. Maintenance Observations (IP 88103)

a. Scope and Observations

The inspectors observed selected maintenance activities 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 the 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 certificate holder's plant tracking system. Inspectors examined day shift and back shift maintenance activities for the various functional areas including mechanical, electrical, and instrument and controls. The inspectors attended pre-job briefings conducted prior to maintenance activities.

The inspectors verified maintenance activities for "Q," "AQ," and other safety significant structures, systems, and components (SSC) were conducted in a manner that resulted in reliable safe plant operations and SSC were verified to be in an operable status prior to use.

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 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 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.

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 observed maintenance activities associated with the converter replacement in Building C-335 using Procedure CP2-CO-CN2030, "Inspection, Removal, Installation, and Handling of Uranium Contaminated Cascade Equipment," and procedure CP2-CO-CN1032, "Identification of Components Requiring Pre-Job Identification." The inspectors observed the line crawl activities and the removal of the converter. The inspectors reviewed the permits associated with the activities and evaluated work supervision, radiation safety practices, and performance of confined space and fire watches during the work activities.

b. Conclusion

No findings of significance were identified.

2. 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 surveillance activities of safety significant systems were conducted in accordance with the technical safety requirements and nuclear criticality controls. The inspectors reviewed the surveillance documentation to verify that required administrative approvals and tag-outs were obtained before test initiation. The inspectors observed portions of the surveillance test, checked to verify testing was done by qualified personnel, reviewed test data for accuracy and completeness, and confirmed the safety systems were properly returned to service.

b. Conclusion

No findings of significance were identified.

3. 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 plant operations review committees reviewed activities important to safety and provided management with recommendations for continued safe plant operations. The inspectors reviewed facility staffing and management approval of overtime. Plant procedures, including temporary standing orders, were maintained, reviewed, and changed in accordance with the certificate requirements and plant operations. The inspectors verified that 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 ATR problem identification system to evaluate the certificate holder's effectiveness in resolving problems. The inspectors verified that deficiencies identified during inspection and audit activities were entered and tracked using the ATR system. The inspectors reviewed quality assurance program activities to ensure the certificate holder implemented the program to maintain the safe operation of equipment and systems important to safety, including "Q" and "AQ" systems and components.

b. Conclusion

No findings of significance were identified.

4. Configuration Control (IP 88101)

a. Scope and Observations

The inspectors reviewed the adequacy and implementation of the facility's configuration control program. The inspectors determined proposed changes to SSC were made in accordance with approved design-change documents and work packages. The inspectors reviewed the change packages, interviewed the parties responsible for proposed changes, and walked down the completed implementation of the changes.

b. Conclusion

No findings of significance were identified.

5. Emergency Preparedness (IP 88050)

a. Scope and Observations

The inspectors reviewed records and determined that no major changes were made to the emergency plan since the last Emergency Preparedness (EP) inspection and the two editorial changes that had been made were properly coordinated within the EP program. The inspectors reviewed five procedures with revisions since the last

emergency preparedness inspection and determined that the changes were in compliance with the emergency plan. The inspectors reviewed the certificate holder's emergency call list and verified that the list was current.

The inspectors reviewed the training records of 10 emergency squad personnel, and interviewed three individuals regarding EP training in the past year and determined that the appropriate personnel had been trained in accordance with procedural requirements. The scope of training requirements was appropriate for the assigned actions and responsibilities of personnel. The inspectors verified that the certificate holder provided training for all special emergency equipment and that the individuals responsible for utilizing the equipment were qualified. The inspectors verified that the certificate holder provided training to hypothetical emergency situations which were effective and consistent with the frequency and performance objectives required in the emergency plan.

The inspectors reviewed the written agreements with the off-site agencies and verified that the organizations required by the emergency plan had up-to-date agreements as of March 2012. The inspectors interviewed representatives from the West McCracken and City of Paducah Fire Departments and determined that they maintained an adequate understanding of the written agreements. The inspectors interviewed off-site emergency response personnel from the West McCracken and City of Paducah Fire Departments, reviewed records and verified that the certificate holder invited the organizations for training as required by the emergency plan and determined that the training given was appropriate. The inspectors reviewed records and verified that the certificate holder performed a communication check with the off-site organizations quarterly as required by the emergency plan.

The inspectors observed the storage of emergency equipment in the on-site fire department and verified that the inventory levels were maintained as required by the emergency plan. The inspectors toured the Emergency Operation Center (EOC) and verified that the areas were readily accessible and maintained the appropriate communication equipment. The inspectors reviewed the accountability procedure and verified that personnel accountability locations were accessible.

The inspectors reviewed the self-assessments generated since the last inspection and verified that a system was in place for adequately tracking and resolving self assessment findings.

b. Conclusion

No findings of significance were identified.

6. Evaluation of Exercises and Drills (IP 88051)

a. Scope and Observations

The inspectors reviewed the emergency drill scenario and discussed the exercise objectives with certificate holder personnel before the exercise. The inspectors reviewed the scenario to ensure that the exercise would adequately test major elements of the certificate holder's emergency plan and to verify the exercise's simulated problems provided an acceptable framework to support demonstration of

the certificate holder's capability to implement the emergency plan. The inspectors walked down the impacted area to assess the effectiveness of the visual aids used in the drill and verified that the certificate holder had not pre-staged equipment in anticipation of the exercise.

The inspectors observed and evaluated the certificate holder's graded biennial exercise conducted on Wednesday, September 19, 2012. The simulated scenario began when a small private plane crashed into a cooling tower. Subsequently, a fire within the cooling tower developed, intensified, and spread. Medical response was required for injured personnel. The scenario was sufficiently challenging and it tested the exercise's objectives.

At the initiation of the emergency drill, the inspectors verified that the certificate holder adequately assessed the accident scenario, analyzed the plant condition, and classified the event. The event was classified as a site area emergency in accordance with the emergency plan. The inspectors observed the activation of the EOC and noted that all required positions were fully staffed in accordance with the emergency plan. The inspectors verified that the protective action recommendations implemented by the EOC were appropriate for the accident scenario and in accordance with the emergency plan.

The inspectors verified that the initial off-site notifications were within the time period specified in the emergency plan. The certificate holder used a fax notification sheet followed by a confirmation phone call to provide the initial notification to off-site agencies. The inspectors noted the certificate holder was three minutes past internal requirements for the phone receipt confirmation of the official notification to the Kentucky Office of Emergency Management. The certificate holder self-identified the delay in completing the notification process and added the issue into the ATR system for corrective action. The inspectors noted this item was also discussed during the critique sessions after the exercise. The inspectors verified that the on-site communications to the occupational workers were consistent with the protective action recommendations implemented by the EOC. The occupational workers participated in the shelter-in-place protective action and personnel accountability measures in accordance with approved procedures. The inspectors reviewed several press releases submitted by the EOC. The inspectors determined that the press releases were approved by the Emergency Director prior to issuance and were in accordance with the emergency plan.

The inspectors determined that the Crisis Manager maintained adequate command and control of the EOC. The inspectors reviewed the off-site chemical release assessment conducted by assessors using the approved plume modeling software. The inspectors verified that the Crisis Manager and the EOC staff utilized the Technical Assessment Group (TAG) for release information and meteorological data and the Operational Assessment Group (OAG) for assessing the emergency's impact on plant operations and recommendations for mitigation strategies. The inspectors verified proper notifications were made to off-site agencies when the hazardous material involved quantities greater than the reportable thresholds. The inspectors verified the Crisis Manager and the EOC staff consulted with the TAG for on-site and off-site protective action recommendations and the TAG utilized the environmental monitoring results from the field monitoring teams during the assessment of the simulated accident scenario.

The inspectors observed members of the certificate holder's emergency response team and off-site emergency responders assemble at the designated assembly area. The inspectors observed the emergency response team's search and rescue activities for casualties and injuries, assessment of the affected areas, and response to additional emerging situations and conditions. The Incident Commander assisted by the Operations Officer, maintained adequate command and control of the emergency response team and coordinated action with the off-site emergency responders. The inspectors verified that the emergency response team activities were appropriate for the exercise scenario and were adequate in meeting the exercise objectives.

The inspectors observed the staff critiques of the emergency exercise. The inspectors determined that the critiques were effective at identifying areas needing improvement.

The inspectors verified that the certificate holder initiated documentation of items discussed after the emergency exercise in the CAP.

b. Conclusion

No findings of significance were identified.

D. Special Topics

1. Event Follow-up

There were no events reported during this inspection period.

2. Follow-up on Previously Identified Issues

(Open) Unresolved Item (URI) 07007001/2011-004-01, Process Gas Leak Detectors (PGLDs)

The inspectors continue to evaluate the licensing basis for the authorization and safe use of the PGLD devices and URI 07007001/2011-004-01, Process Gas Leak Detectors (PGLDs), remains open.

E. Exit Meeting

The inspection scope and results were summarized on September 27, 2012, with Mr. J. Lewis, Site Vice President and 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	Manager Regulatory Compliance
M. Buckner	Plant Manager
S. Childers	Quality Control Manager
R. Clift	Packaging and Transportation
D. English	Nuclear Safety and Quality Manager
L. Fink	Regulatory Engineer
S. Gunn	Operations Manager
T. Henson	Nuclear Criticality Safety Manager
O.E. Hickman	Radiation Protection Manager
M. Keef	Government Services Manager
J. Lewis	General Manager
S. McKinney	Engineering Manager
L. Moffatt, II	Cascade Manager
R. Pea	Packaging and Transportation Specialist
V. Shanks	Regulatory Affairs Manager
S. Shell	Production Support and Product Scheduling Manager
S. Smith	Security Manager
D. Snow	Environmental, Safety, and Health Manager
D. Stadler	Lead, Regulatory Engineer
C. Willett	Maintenance Manager

2. Partial List of Documents Reviewed

Procedures:

CP2-EP-EP5030, Personnel Accountability, Revision (Rev). 12
CP2-EP-EP5031, Oil and HAZMAT Spills and Releases, Rev. 21
CP2-EP-EP5032, Plant Emergency Management Program, Rev. 8
CP2-EP-EP5042, Termination and Recovery after Emergencies, Rev. 2
CP2-EP-EP5043, Medical Emergencies, Rev. 5
CP2-EP-EP5044, Mutual Emergency Assistance, Rev. 4
CP2-EP-EP5046, Emergency Operations Center, Rev. 15
CP2-EP-EP5052, Emergency Response Drills and Exercises, Rev. 9
CP2-EP-EP5055, Emergency Classification, Rev. 20
CP2-EP-EP5056, Emergency Notification, Rev. 13
CP2-EP-EP5057, Emergency Monitoring, Rev. 6
CP2-EP-EP5059, Emergency Communications, Rev. 5
CP2-EP-EP5062, Fire Emergencies, Rev. 7
CP4-EW-WM 2107, Operation of Low Level Radioactive Waste Storage Facilities, Rev. 7
UE2-US-PC 1037, Shipping Orders, Rev.1
CP3-CO-CO 6006, Shipment, Receipt, Inspection of 2.5 ton cylinder and Overpacks,
Rev. 26
CP4-MA-PK 1103, Shipment of UF6 Cylinders, Rev. 10
CP4-HP-RP 2105, Surveys for Receipt and Shipment of Radioactive Material, Rev. 10

CP4-EW-WM 4103, Qualitative and Quantitative Waste Assay System Operation, Rev. 10
 CP4-MA-PK 1100, Hazardous Waste Shipment, Rev. 4
 CP2-MA-PK 1030, UF6 Cylinder Shipment and Receipt, Rev. 5

Other Documents:

KY/R-15, Characterization of Low Level Radioactive Waste, Rev. 2
 Annual Calibration data of the Q2 Drum Monitor Equipment per CP4-GP-RI6150
 ASME NQA-1, 1989, 18S-1, section 4

3. List of Items Opened, Closed, and Discussed

Item Number	Status	Type/Description
70-7001/2011-004-01	Discussed	URI – PGLD authorization/use

4. List of Inspection Procedures Used

86740	Transportation of Radioactive Material
88030	Radiation Protection
88035	Radioactive Waste Management
88045	Effluent Control and Environmental Protection
88050	Emergency Preparedness
88051	Evaluation of Exercises and Drills
88100	Plant Operations
88101	Configuration Control
88102	Surveillance Observations
88103	Maintenance Observations
88105	Management Organization and Controls

5. List of Acronyms Used

ALARA	As Low As Reasonably Achievable
ATR	Assessment & Tracking Report
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DDE	Deep Dose Equivalent
DOT	U.S. Department of Transportation
EOC	Emergency Operations Center
EP	Emergency Preparedness
IP	Inspection Procedure
LCO	Limiting Condition of Operation
LOTO	Lock-out/Tag-out
mrem	millirem
NRC	Nuclear Regulatory Commission
OAG	Operational Assessment Group
PORC	Plant Operations Review Committee
PGLD	Process Gas Leak Detector

Rev.	Revision
RP	Radiation Protection
RPM	Radiation Protection Manager
SAR	Safety Analysis Report
SSC	Structures, Systems, and Components
TAG	Technical Assessment Group
TLD	Thermoluminescent Dosimeter
TSR	Technical Safety Requirement
UF ₆	Uranium Hexafluoride
URI	Unresolved Inspection Item