



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

January 27, 2012

Mr. Peter J. Miner
Director
USEC Inc.
Regulatory and Quality Assurance
6903 Rockledge Drive
Bethesda, MD 20817

SUBJECT: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT
NO. 70-7003/2011-005

Dear Mr. Miner,

This letter refers to the inspections conducted during the period from October 1 through December 31, 2011, at the USEC Inc., Lead Cascade in Piketon, OH. The purpose of these inspections was to determine whether activities authorized under the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspections, the findings were discussed with members of your staff.

The inspections consisted of an examination of activities as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of the license. Areas examined during the inspection period included operational safety, fire protection, permanent plant modifications, and evaluation of exercises and drills program areas. Within these areas, the inspections consisted of a selective examination of procedures and representative records, observations of activities in progress, and interviews with personnel.

Based on the results of these inspections, no cited violations or deviations 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>.

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

Sincerely,

/RA by D. Hartland for/

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

Docket No. 70-7003
License No. SNM-7003

Enclosure: NRC Inspection Report No. 70-7003/2011-005
w/Attachment: Supplemental Information

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

Sincerely,

/RA by D. Hartland for/

Joselito O. Calle, Chief
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Division of Fuel Facility Inspection

Docket No. 70-7003
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Enclosure: NRC Inspection Report No. 70-7003/2011-005
w/Attachment: Supplemental Information

Distribution w/encl:

- B. Smith, NMSS
- J. Calle, RII
- D. Hartland, RII

***see previous concurrence**

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE

ADAMS: Yes ACCESSION NUMBER: ML12027A056 SUNSI REVIEW COMPLETE FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI					
SIGNATURE	/RA/	/RA/					
NAME	DHartland	NPeterka					
DATE	1/20/2012	1/20/2012	1/ /2012	1/ /2012	1/ /2012	1/ /2012	1/ /2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

P. Miner

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cc w/encl:
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-7003

Certificate No.: SNM-7003

Report No.: 70-7003/2011-005

Licensee: USEC Inc.

Facility: Lead Cascade

Location: Piketon, OH

Dates: October 1 through December 31, 2011

Inspectors: D. Hartland, Senior Fuel Facility Inspector
N. Peterka, Fuel Facility Inspector

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

Enclosure

EXECUTIVE SUMMARY

United States Enrichment Corp., Lead Cascade NRC Inspection Report 70-7003/2011-005

Inspections were conducted by region-based inspectors during normal shifts in the areas of safety operations and facility support. The inspectors performed a selective examination of licensee activities which were accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records.

Plant Operations

Safety controls were being properly implemented in the plant. Deviations were being documented and investigated promptly. (Section 2)

Fire Protection

The inspectors reviewed implementation of regulatory requirements related to the licensee's fire protection program including fire-water pumps, fire extinguishers, fire doors, fire detection systems, fire suppression systems, and the on-site fire brigade provided under contract. (Section 3)

Emergency Preparedness

Licensee staff adequately demonstrated the ability to implement requirements in its Emergency Plan during the graded biennial exercise. All drill objectives were satisfied. (Section 4)

Permanent Plant Modifications

The inspectors verified that changes to commitments to industry codes, standards, and regulatory guidance listed in Section 1.4 of the Safety Analysis Report were authorized and performed in accordance with 10 CFR 70.72 and licensee procedural requirements. (Section 5)

Attachment

Key Points of Contact
List of Items Opened, Closed, and Discussed
Inspection Procedures Used
Documents Reviewed

REPORT DETAILS

1. Summary of Plant Status

Centrifuges in the USEC Inc. Lead Cascade facility were being operated without process gas during the inspection period as the licensee was implementing corrective actions in response to the event that occurred on June 11, 2011, that resulted in the failure of multiple centrifuges. The inspectors conducted a safety walk down of the Lead Cascade facility, engaged in focused discussions with subject matter experts, and performed reviews of documentation.

2. Plant Operations (Inspection Procedure (IP) 88020)

a. Inspection Scope and Observations

The inspectors accompanied an operator during a shift tour of the lead cascade process area. The inspectors noted that the operator was knowledgeable of safety controls implemented in the plant. During the tour, the inspectors confirmed that various engineered controls were present and capable of performing their intended safety functions. The inspectors also verified that a sampling of administrative controls was being properly implemented as well.

The inspectors observed error reduction training that was being provided to all staff as a response to the event that occurred in June 2011. The inspectors noted that the training provided effective interactive exercises and tools to reduce human errors at the site. The inspector reviewed results of audits and assessments as well as corrective action program entries for the past calendar year and determined that deviations from procedures and unforeseen process changes affecting nuclear criticality, chemical, radiological, or fire safety were documented and investigated promptly.

b. Conclusion

Safety controls were being properly implemented in the plant. Deviations were being documented and investigated promptly. No findings of significance were identified.

3. Fire Protection - Annual (IP 88055)

a. Inspection Scope and Observations

The inspection focused on the following areas: X-3001 Process Building (PB), X-3012 Process Support Building (PSB), X-7726 Centrifuge Training and Test Facility (CTTF), X-7727H Transfer Corridor (TC), and fire support services provided under contract by the Department of Energy (DOE). The inspectors reviewed the license application to determine the requirements to applicable codes and standards related to fire protection equipment. The fire protection equipment reviewed included fire-water pumps, fire extinguishers, fire doors, fire detection systems, fire suppression systems, and the on-site fire brigade provided under contract.

The inspectors reviewed the licensee's control of combustible materials through implementation of annual building surveys. The inspectors walked down the X-3001 PB and X-7727H TC to verify combustible materials were being controlled according to plant

procedures. In addition, the inspectors reviewed the licensee's hot work program implementing procedure and hot work permits posted where welding was being performed in the X-3012 PSB.

The inspectors reviewed the licensee's fire suppression systems through implementation of Item Relied On For Safety (IROFS) IS-021 and the fire detection system. The inspectors observed the condition of fire detection and suppression systems in the X-3001 PB and X-7727H TC and noted that the devices were spaced properly, not obstructed, or damaged per National Fire Protection Association (NFPA) 72 and NFPA 13. The inspectors verified that the satellite fire alarm panels and the central alarm panel received power from two independent sources. The inspectors also verified the central alarm panel electronically supervised the satellite alarm panels and the fire-water pump controllers. The central alarm panel also provided both visual and audible trouble alarms to operators.

The inspectors reviewed the licensee's manual firefighting equipment. The inspectors verified through a sampling that portable fire extinguishers were in acceptable condition, easily accessible, and spaced appropriately per NFPA 10 in the X-3001 PB and X-7727H TC. The inspectors verified the fire-water standpipes were at the appropriate pressure and the pumps could provide an adequate supply of water upon demand. The inspectors verified a sampling of fire hoses located throughout the X-7726 CTF were in good condition.

The inspectors reviewed the licensee's implementation of passive fire protection features in the X-3001 PB, X-7727H TC, and X-7726 CTF. The inspectors performed a walk-down of X-3001 and verified a sampling of fire doors closed and latched and that the general condition of fire barrier penetration seals was acceptable. In addition, the inspectors reviewed the licensee's program for compensatory measures and fire barrier impairments.

The inspectors reviewed the licensee's implementation of its instrument, testing, and maintenance (ITM) program for fire protection equipment to ensure the equipment remained available and reliable to perform its intended function when called upon. The inspectors reviewed a sampling of ITM records for the fire detection system, fire-water pumps, fire suppression system, fire extinguishers, and other fire protection equipment.

The inspectors observed the Emergency Response Organization and fire brigade during the graded biennial exercise discussed in the following paragraphs. The inspectors did not note any issues with communications equipment, bunker gear, or Self Contained Breathing Apparatuses (SCBAs). The inspectors observed a fire brigade member don their bunker gear and SCBA with no issues identified.

b. Conclusion

The inspectors reviewed implementation of regulatory requirements related to the licensee's fire protection program including fire-water pumps, fire extinguishers, fire doors, fire detection systems, fire suppression systems, and the on-site fire brigade provided under contract. No findings of significance were identified.

4. **Evaluation of Exercises and Drills (IP 88051)**

a. Inspection Scope and Observations

The inspectors reviewed the emergency drill scenario and discussed the exercise objectives with licensee personnel before the exercise. The inspectors walked down the plant to assess the effectiveness of the visual aids used in the drill and verified that the licensee had not pre-staged equipment in anticipation of the exercise.

The inspectors observed and evaluated the licensee's graded biennial exercise conducted on December 10, 2011. The scenario included a release of hydrogen fluoride gas on the gaseous diffusion plant (GDP) side, followed by a building fire on the American Centrifuge Plant (ACP) side of the facility. At the initiation of the emergency drill, the inspectors verified that the incident commander assessed the accident scenario, analyzed the plant condition, and appropriately classified the event. The event was classified as a site area emergency in accordance with the Emergency Plan.

The inspectors verified that the protective action recommendations implemented by the incident commander were appropriate for the accident scenario and in accordance with the Emergency Plan, but noted a delay in the protective action decision for onsite personnel until the site area emergency declaration was made. The inspectors verified that the onsite communications to the occupational workers were consistent with the protective action recommendations implemented. The inspectors also verified that the initial offsite notifications were within the time period specified in the Emergency Plan.

The inspectors observed members of the emergency response team assemble at the designated assembly area. The inspectors observed the emergency response team's search and rescue activities for casualties, assessment of the affected area, and response to additional emerging situations. The Incident Commander 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 drill objectives.

The inspectors observed the activation of the Emergency Operations Center (EOC) and noted that all required positions were fully staffed in accordance with the Emergency Plan. The inspectors determined that the Crisis Manager maintained adequate command and control of the EOC. The inspectors observed the staff critiques of the emergency exercise. The inspectors determined that the critiques were effective at identifying lessons learned or areas of improvement.

b. Conclusion

Licensee staff adequately demonstrated the ability to implement requirements in its Emergency Plan during the graded biennial exercise. All drill objectives were satisfied. No findings of significance were identified.

5. Permanent Plant Modifications (IP 88070)**a. Inspection Scope and Observations**

The inspectors performed a review of a description of permanent plant modifications that were completed during calendar years 2010 and 2011. The inspectors did not identify any safety significant modifications that warranted further review. However, the inspectors reviewed changes to commitments to industry codes, standards, and regulatory guidance listed in Section 1.4 of the Safety Analysis Report (SAR). The inspectors verified that changes were authorized and performed in accordance with 10 CFR 70.72 and licensee procedural requirements.

b. Conclusion

The inspectors verified that changes to commitments to industry codes, standards, and regulatory guidance listed in Section 1.4 of the SAR were authorized and performed in accordance with 10 CFR 70.72 and licensee procedural requirements. No findings of significance were identified.

6. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff on December 9 and 12, 2011. The licensee's staff indicated that no proprietary information had been discussed.

SUPPLEMENTAL INFORMATION

1. LIST OF PERSONS CONTACTED

D. Rogers, General Manger
J. Bednarcysk, Engineering Manager
G. Corzine, Nuclear Safety Manager
D. Fosson, Operations Manager
S. Fout, Technical Services Manager
M. MacCrae, Quality Assurance Manager
J. Oppy, Enrichment Operations Manager
M. Redden, ACP Fire Services/Emergency Management
T. Sensue, Nuclear Regulatory Affairs Manager
G. Workman, ACP Plant Services Manager
J. Boyce, Fluor-B&W Portsmouth Fire Services Manager

2. INSPECTION PROCEDURES USED

IP 88020	Operational Safety
IP 88055	Fire Protections (Annual)
IP 88051	Evaluation of Exercises and Drills
IP 88070	Permanent Plant Modifications

3. ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Status</u>	<u>Type/Description</u>
None		

4. LIST OF DOCUMENTS REVIEWED

LC and FBP Procedures Reviewed

- AC2-EG-017 IROFS Surveillance Program, Rev. 16
- AC2-SH-028 Welding, Burning, and Hot Work Practices, Rev. 5
- AC3-ST-003 Surveillance, Test, and Inspection of the Feed Cart Cylinder Unit Fire Suppression System, Rev. 0
- FBP-FP-PRO-00009 Fire Services Inspection and Testing Frequency, Rev. 4
- FBP-FP-PRO-00021 Inspection and Testing of Fire Hose, Rev. 1
- FBP-FP-PRO-00025 Test and Inspection of Fire Hydrants, Rev. 2
- FBP-FP-PRO-00029 Test and Inspection of Wet Pipe Sprinkler Systems, Rev. 5
- FBP-FP-PRO-00034 Operational Test of Fire Doors, Rev. 1 FBP-FP-PRO-00039 Monthly Inspection of Portable Fire Extinguishers
- FBP-FP-PRO-00052 Self Contained Breathing Apparatus Inspection and Test, Rev. 3
- FBP-FP-PRO-00093 Placing Fire Protection Systems and Components Out of Service, Rev. 2

LC Boundary Documents Reviewed

- BDD-3001-QL2-006, Rev. 1
- BDD-3001-QL2-019, Rev. 1

LC and FBP Surveillances Reviewed

- AC-288 (09/28/07), IROFS Surveillance #IS-008
- AC-288 (10/25/11), IROFS Surveillance #IS-009
- AC-357 (12/19/07), Annual Feed Cart Dry Chemical System Inspection/Test Report
- A-995 (09/18/09), Fire Hose Inspection/Test Data Sheet for Hose on or that will be used on Fire Services Apparatus
- A-955a (03/31/99), Fire Hose Inventory
- A-1179 (09/13/10), Area 3 Wet Pipe Sprinkler Systems Annual Inspection
- A-1179 (05/27/05), Area 1 RCRA Required Wet Pipe Sprinkler Systems Annual Inspection
- A-1179 (09/13/10), Area 2 Wet Pipe Sprinkler Systems Annual Inspection
- A-1179B (09/31/10), Area 2 Wet Pipe Sprinkler Systems Monthly Inspection
- A-1179J (08/10/07), Area 2 Wet Pipe Sprinkler Systems Annual Inspection - IROFS Required
- A-1179K (08/28/08), Area 2 Wet Pipe Sprinkler Systems Monthly Inspection IROFS Required
- A-3162 (09/13/10), High Pressure Fire Water System Job Checklist
- A-3478A (09/18/08), PORTS Annual Fire Pump Capacity Test Data Sheet (X-640-1, No. 1 Electric)
- A-3478B (09/18/08), PORTS Annual Fire Pump Capacity Test Data Sheet (X-640-1, No. 2 Electric)
- A-3478C (07/26/06), PORTS Annual Fire Pump Capacity Test Data Sheet (X-640-1, No. 3 Diesel)
- A-3478D(09/19/08), PORTS Annual Fire Pump Capacity Test Data Sheet (X-6644, No. 1 Electric)
- A-3478E(07/26/06), PORTS Annual Fire Pump Capacity Test Data Sheet (X-6644, No. 2 Electric A-3478F(09/18/08), PORTS Annual Fire Pump Capacity Test Data Sheet (X-6644, No. 3 Diesel)
- XP4-CU-PW2166, Standby Generator Load Test Check Sheet (X-1007)

Other LC Documents Reviewed

- List of Fire Protection Related Modifications
- ACP-2011-18, Quality Assurance Assessment Report of Fire Protection
- American Centrifuge Lead Cascade Facility Fire Suppression System Hydraulic Calculations and Simulations
- AC-003, Application Change for Chapter 7 of License Application
- Authorization #:813894, Fire Services/Emergency Management/PSS Support for the ACP
- Work Authorization #:813873, Fire Services/Emergency Management Support for maintenance, testing, and repair activities