

### INSPECTION REPORT

1. LICENSEE OR CERTIFICATE HOLDER/LOCATION INSPECTED: United States Enrichment Corporation 6903 Rockledge Road Bethesda, MD 20817		2. NRC/REGIONAL OFFICE: U.S. Nuclear Regulatory Commission Region II 61 Forsyth Street, Suite 23T85 Atlanta, GA 30303-8931	
REPORT NO: 2009-005			
3. DOCKET NUMBER: 70-7002	4. LICENSE OR CERTIFICATE NUMBER: GDP-2	5. DATE(S) OF INSPECTION: December 7 - 10, 2009	

**LICENSEE OR CERTIFICATE HOLDER:**

The inspection was an examination of the activities conducted under your license or certificate as they relate to safety and/or safeguards and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license or certificate. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- 1. Based on the inspection findings, no violations were identified.
- 2. Previous violation(s) closed.
- 3. Reported events reviewed
- 4. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.  
Non-Cited Violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):
  
- 5. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.  
(Violations and Corrective Actions)

**LICENSEE OR CERTIFICATE HOLDER STATEMENT OF CORRECTIVE ACTIONS FOR ITEM 5, ABOVE**

I hereby state that, within 30 days, the actions described by me to the inspector will be taken to correct the violation(s) identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to the NRC will be required, unless specifically requested.

Title	Printed Name	Signature	Date
LICENSEE/CERTIFICATE HOLDER REPRESENTATIVE			
NRC INSPECTOR	Thomas/Prince/Startz	/RA/	01/8 /2010

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6. INSPECTOR(S): M. Thomas, R. Prince, P Startz

7. INSPECTION PROCEDURES USED: 88030, 88045, and 88055

### EXECUTIVE SUMMARY

#### Summary of Plant Status

- The Portsmouth Gaseous Diffusion Plant had previously discontinued most uranium hexafluoride (UF<sub>6</sub>) enrichment processes. The facility is currently supporting limited equipment operations in X-326 to complete the removal of UF<sub>6</sub> residues. During the inspection, routine cleanup and maintenance operations were being conducted and no incidents were reported.
- This was a routine and announced inspection that included review of the fire protection program, radiation protection program, and the environmental protection and effluent control program. The inspection involved interviews with plant personnel, review of selected records, and observation of work activities. The inspection evaluated the following certificated program areas.

#### Fire Protection (88055)

- The inspectors observed the facility changes made to provide heat to sprinkler system standpipes in the cascade buildings. No significant issues were identified.
- The inspectors accompanied a fire fighter on the required three hour patrols of impaired sprinkler systems. During this accompaniment the inspectors observed the combustible loading of the affected buildings. No significant issues were identified.
- The inspectors reviewed maintenance records and walked down selected components of the fire detection system and noted that they were maintained properly.
- The inspectors reviewed building surveys for the process areas. The building surveys were up-to-date, and issues identified during building surveys were entered into the respective corrective action system.
- The inspectors reviewed fire fighter training records and observed a fire fighter don turnout gear and a self-contained breathing apparatus. No significant issues were identified.

#### Radiation Protection (88030)

## EXECUTIVE SUMMARY (Continued)

- The inspectors interviewed certificate holder representatives, reviewed radiation protection procedures, and reviewed personnel exposure data to determine if personnel exposures were in compliance with 10 CFR 20.1201 limits. The inspectors noted that personnel exposures for 2008 were well below 10 CFR 20.1201 regulatory limits for occupational exposure for the gaseous diffusion facilities. The inspector verified that the certificate holder's dosimeter contractor was certified by the National Voluntary Laboratory Accreditation Program. No significant issues were identified.
- Based on interviews, procedural reviews, and observation of plant personnel within the controlled area, the inspectors determined that the certificate holder's monitoring program for internal and external exposure was consistent with regulatory requirements. The program was adequate for the type of operations and work activities performed.
- The inspectors observed laboratory personnel collecting bioassay samples and evaluated controls to ensure the proper handling, identification, and processing of samples. Laboratory personnel described key program elements with the inspectors. The inspectors discussed the calibration and operation of the mass spectrometer with bioassay laboratory personnel. Additionally, personnel described the process associated with the use of calibration standards, blind spikes and control standards to ensure the proper operation of bioassay analysis equipment when processing bioassay samples. No significant issues were identified.
- Instrumentation calibration laboratory personnel demonstrated procedures utilized for performing daily source response and operational checks of radiation monitoring equipment, and functional alarm verification of contamination monitors utilized at exit locations of controlled zones. The inspector reviewed calibration sources for appropriate configuration and confirmed suitability of sources for their intended function. Calibration laboratory personnel were knowledgeable of the operational check requirements and activities were performed in accordance with approved procedures. The inspector reviewed the associated calibration and operational check procedures for accuracy and content. No significant issues were identified.
- The inspectors attended a pre-job briefing associated with the change out of an autoclave technetium trap. The inspectors noted that the briefing was attended by the various work groups that were involved in the activity. The briefing adequately addressed the radiological safety issues associated with the job. The inspectors reviewed the Radiological Work Permit (RWP) 09-344-0023 for the task and radiological surveys for the work area. The inspectors noted that the certificate holder had developed a Radiological Review Package for the change out of technetium traps. This package addressed the radiological conditions to be encountered, provided a detailed description of the procedure involved, and control measures to be employed during the task. The inspectors observed the subsequent field activities associated with the task. The work area was properly prepared and posted to support the task, contamination control measures were established, air sampling equipment was staged and operable and work crews properly prepared to perform the task. The task was completed in accordance with the RWP, including the use of respiratory protection equipment, and work crews were observed performing work activities in a coordinated and safe manner following established radiological safety procedures. No significant issues were identified.
- The inspectors observed the respiratory protection equipment facility. This facility is utilized for disinfecting, repair, stocking and issuance of respiratory protection equipment. The inspectors discussed procedures associated with the issuance of respirators and controls established to ensure that only properly trained and qualified individuals were issued respirators. The inspectors noted that measures were established to adequately control the issuance of respiratory protection equipment to only those individuals authorized to use respirators.

## EXECUTIVE SUMMARY (Continued)

- The inspector reviewed selected survey records for accuracy and completeness and observed radiological postings within the controlled area and in locations where radioactive material was stored or utilized. No significant issues were identified.

### Environmental Protection and Effluent Controls (IP 88045)

- The inspectors observed the collection of liquid effluent samples and determined that the sampling locations and procedural protocols were appropriate for the accurate determination of radionuclide isotopes and concentrations, total discharge quantities, and the determination of dose to the public. No significant issues were identified.
- The inspectors observed laboratory activities and reviewed operating procedures related to analysis of liquid effluent samples. Activities reviewed included chain of custody protocols, sample preparation for radionuclide analysis, isotopic separation and purification with extraction columns, calibration and operation of the alpha spectrometry system, documentation and retention protocols, and evidence of quality assurance related to radiological standards. Analysis documentation for sample number R09002642 was reviewed. No significant issues were identified.
- The inspectors observed the collection of a gaseous effluent sample trap vessel located in the X-326 process building. The operators completed the sample vessel change in accordance with procedure XP4-TS-CY6412. The inspectors noted that the activities were completed at the required frequency and in accordance with approved procedures. No significant issues were identified.
- The inspectors reviewed annual discharges for gaseous effluents as declared in the National Emissions Standards for Hazardous Air Pollutants report for 2008. Radiological air emissions for all United States Enrichment Corporation and Department of Energy activities were very low, 0.028 millirem per year. The inspector determined that very low emissions values corresponded with the very low levels of production. No significant issues were identified.
- The inspectors reviewed ten gaseous effluent exceedances and two liquid effluent exceedances during the current calendar year 2009. The thresholds that were exceeded are established from a two year rolling average of data defined as the baseline effluent quantity (BEQ). The gaseous effluent BEQ's were calculated when almost no production activities were occurring, producing an artificially low threshold. The gaseous exceedances for 2009 were related to the initiation of some production activities in X-326 and X-330, specifically discharges from X-326 top purge vent and the X-330 cold recovery. The gaseous exceedances were extremely low relative to the public dose limit of 10 millirem per year as specified in the ALARA constraints per 10 CFR 20.1101. The gaseous exceedances ranged from approximately 0.0001 to 0.014 millirem per year additional public dose. The two liquid effluent exceedances were similarly low and of little significance. No significant issues were identified.
- The inspectors reviewed the 2008 data for sediment, soil, vegetation, and fish sampling and determined the certificate holder was in compliance with certificate requirements.
- The inspectors reviewed several items in the corrective action program involving the environmental department and the 2009 internal audit on the Environmental Health and Safety program. No significant issues were identified.
- The inspectors reviewed environmental procedures and determined there were no major changes to the environmental program since the last inspection.

EXECUTIVE SUMMARY (Continued)

**Exit Meeting Summary**

- The inspection scope and results were summarized on Thursday, December 10, 2009, with members of the certificate holder staff. No proprietary information was identified.

**Key Points of Contact**

Name

B. Halcomb

L. Sendek

T. Taulbee

J. Boyce

Title

Environmental Compliance and Waste Management

Nuclear Regulatory Affairs

Radiation Protection Manager

Fire Services