



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

July 24, 2013

EA-13-156

Mr. David Precht  
Manager, Columbia Plant  
Westinghouse Electric Company  
5801 Bluff Road  
Hopkins, SC 29250

SUBJECT: WESTINGHOUSE ELECTRIC COMPANY - NUCLEAR REGULATORY  
COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-1151/2013-  
003

Dear Mr. Precht:

This refers to the inspections conducted during the second quarter of calendar year 2013, at your facility in Columbia, South Carolina. The purpose of the inspections was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of the inspections. At the conclusion of the inspections, the results were discussed with members of your staff at exit meetings held on May 10, 22, and 23, and June 19 and 20 for this integrated inspection report.

During the inspections, the staff examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspections consisted of facility walk-downs; selective examinations of relevant procedures and records; interviews with plant personnel; and plant observations. Throughout the inspections, observations were discussed with your managers and staff. The inspections covered the following areas: maintenance and surveillance of safety controls, emergency preparedness, evaluation of exercises and drills, and effluent control and environmental protection.

Based on the results of these inspections, the NRC has determined no violations of NRC requirements occurred.

The NRC is also withdrawing violation 70-1151/2012-005-01, "Failure to ensure criticality safety IROFS received full application of the Regulatory Component QA [Quality Assurance] program requirements to assure failure of their availability and reliability was highly unlikely," based on clarified information provided by the licensee.

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>.

D. Precht

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If you have any questions, please call me at (404) 997-4629.

Sincerely,

*/RA/*

Marvin D. Sykes, Chief  
Fuel Facility Inspection Branch 3  
Division of Fuel Facility Inspection

Docket No. 70-1151  
License No. SNM-1107

Enclosure:  
NRC Inspection Report 70-1151/2013-003  
w/Attachment: Supplemental Information

cc w/encl:  
Wayne Sepitko  
Manager  
Environment, Health and Safety  
Electronic Mail Distribution

Christine Kneece  
Manager  
Industrial Safety  
Electronic Mail Distribution

Susan E. Jenkins  
Assistant Director, Division of Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental Control  
Electronic Mail Distribution

If you have any questions, please call me at (404) 997-4629.

Sincerely,  
**/RA/**

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Assistant Director, Division of Waste Management  
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Distribution w/encl:  
M. Sykes, RII  
M. Thomas, RII  
R. Johnson, NMSS  
C. Ryder, NMSS  
M. Baker, NMSS  
T. Marenchin, OE  
C. Evans, RII  
L. Douglas, RII  
PUBLIC

X PUBLICLY AVAILABLE      NON-PUBLICLY AVAILABLE      SENSITIVE      X NON-SENSITIVE  
ADAMS: X Yes      ACCESSION NUMBER: ML13205A174      X SUNSI REVIEW COMPLETE      X FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI
SIGNATURE	/RA/	/RA/	/RA/	M. Thomas for	/RA/	/Ra/	/RA/
NAME	P. Glenn	M. Crespo	R. Russell	G. Goff	T. Vukovinsky	M. Thomas	C. Evans
DATE	07/9 /2013	07/ 9 /2013	07/10 /2013	07/ 10 /2013	07/ 10 /2013	07/ 10 /2013	07/ 11 /2013
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

U.S. NUCLEAR REGULATORY COMMISSION  
REGION II

Docket No.: 70-1151

License No.: SNM-1107

Report No.: 70-1151/2013-003

Licensee: Westinghouse Electric Company

Location: Hopkins, South Carolina

Dates: April 1, 2013 through June 30, 2013

Inspectors: G. Goff, Fuel Facility Inspector (Sections A.2 and C.1)  
P. Glenn, Fuel Facility Inspector (Section B.1)  
R. Russell, Fuel Facility Inspector (Section B.4)  
M. Crespo, Senior Fuel Facility Inspector (Section B.5)  
M. Thomas, Senior Fuel Facility Inspector (Section C.2a-e)  
T. Vukovinsky, Fuel Facility Inspector, (Section C.2f)

Approved by: M. Sykes, Chief  
Fuel Facility Inspection Branch 3  
Division of Fuel Facility Inspection

Enclosure

## **EXECUTIVE SUMMARY**

Westinghouse Electric Company  
NRC Integrated Inspection Report No. 70-1151/2013-003  
April 1 through June 30, 2013

Inspections were conducted by regional inspectors during normal shifts in the areas of radiological controls and facility support. The inspectors performed a selective examination of licensee activities that 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. No safety significant findings were identified.

### **Radiological Controls**

- The environmental protection program was properly implemented in accordance with the license and regulatory requirements. (Section A.1).

### **Facility Support**

- The maintenance and surveillance of safety controls program was implemented in accordance with the license and regulatory requirements. (Section B.1)
- The emergency preparedness program was implemented in accordance with the license and regulatory requirements. (Section B.2)
- The biennial graded exercise was conducted in accordance with the license and regulatory requirements. (Section B.3.)

### **Other Areas**

- Several open items pertaining to emergency preparedness, cylinders, integrated fuel burnable absorber, and a quality assurance violation were reviewed and closed based on licensee actions. (Section C)

### **Attachment**

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

## REPORT DETAILS

### Summary of Plant Status

The Westinghouse Facility converts uranium hexafluoride (UF<sub>6</sub>) into uranium dioxide and fabricates fuel assemblies for use in commercial nuclear power reactors. During the inspection period, normal production activities were ongoing.

#### A. Radiological Controls

##### 1. Effluent Control and Environmental Protection (Inspection Procedure (IP) 88045)

###### a. Inspection Scope and Observations

The inspectors reviewed program and procedure changes since the last inspection. Through interviews with licensee personnel, the inspectors concluded that no major organizational changes within the program had occurred. Through documentation reviews, the inspectors concluded that procedural changes were either editorial or minor in nature and all changes were made in accordance with license requirements.

In addition, inspectors reviewed three self-assessments/audits and verified that findings identified at a low threshold were entered into the licensee's corrective actions program. Based on a review of these documents, inspectors determined that the licensee was performing the required audits/assessments at the frequency required by the license. A review of a selection of entries indicated that corrective actions were/are being adequately implemented and tracked in accordance with the program.

The inspectors reviewed program requirements and procedures pertaining to the conduct and implementation of airborne, liquid, soil, and vegetation monitoring. The inspectors observed licensee personnel collecting airborne data from the four ambient air monitoring stations and emission samples from select scrubber stacks. The inspectors also observed liquid effluent samples being collected at various points on the site property. All of the aforementioned activities were performed in accordance with procedures. The inspectors interviewed technicians responsible for the above activities and determined that each was knowledgeable in implementing the assigned duties. Through these field observations and interviews, inspectors determined that the licensee complied with program requirements.

Effluent monitoring stations were maintained in proper working condition, including calibration status. The inspectors observed that the laboratory equipment utilized for sample analysis was properly calibrated. In addition, inspectors verified that chain-of-custody requirements were implemented throughout the collection and analysis sequence.

The inspectors reviewed the licensee processes for evaluating, tracking, and trending data affiliated with its environmental monitoring programs. The inspectors determined that adequate thresholds have been established to serve as early indicators of adverse trends. A review of the results of the aforementioned monitoring areas revealed all radiation levels to be significantly below regulatory limits.

The inspectors reviewed the August 29, 2012, and February 21, 2013, semi-annual effluent reports and determined that the licensee was in compliance with 10 CFR 70.59, and effluent releases off-site were well below regulatory limits.

The inspectors reviewed the public dose assessment and determined that the average annual effluent concentrations released in 2012 did not exceed the values specified in Appendix B of 10 CFR Part 20 nor did the total dose to the individual likely to receive the highest dose from a licensed operation exceed the regulatory limit for 2012. The inspectors reviewed the airborne portion of the public dose assessment and verified that results complied with the As Low As Reasonably Achievable (ALARA) constraints specified by 10 CFR 20.1101(d). The inspectors reviewed the concentrations of liquid releases discharged to the sanitary sewer and verified that the licensee was in compliance with 10 CFR 20.2003.

b. Conclusion

No findings of significance were identified.

B. Facility Support

1. Maintenance and Surveillance of Safety Controls (IP 88025)

a. Inspection Scope and Observations

The maintenance and surveillance inspection was performed during the annual plant outage. The inspectors interviewed senior managers, supervisors, engineers, operators, and technicians to evaluate maintenance and surveillance program activities. The inspectors verified that items relied on for safety (IROFS) and other safety controls were properly maintained to ensure availability and reliability to perform their intended safety functions when needed.

The inspectors verified that the licensee's work control program had provisions to ensure adequate pre-job planning and preparation of work packages. The inspectors reviewed and verified maintenance and surveillance work packages for accuracy and to ensure that testing verified operability of IROFS and safety controls.

The inspectors observed maintenance work activities on selected systems and processes and determined that work activities were conducted in accordance with licensee's requirements and approved procedures. These observations included emergent work, scheduled maintenance, and surveillance testing. The field observations were focused on the most risk significant areas of the facility.

The inspectors confirmed that effective corrective actions had been taken to address failed or degraded safety controls and IROFS. The inspectors verified that post-maintenance testing, calibrations, and completed work packages were adequately reviewed prior to returning equipment to service.

The inspectors reviewed the licensee's problem identification and resolution program to verify that performance issues, relating to the maintenance and surveillance of IROFS and safety controls, were entered into the corrective action program (CAP). The inspectors verified that the corrective actions taken were adequate.

b. Conclusion

No findings of significance were identified.

## 2. Emergency Preparedness (IP 88050)

### a. Inspection Scope and Observations

The inspectors performed observations of plant activities, conducted personnel interviews, evaluated procedure changes, and inspected documentation. The inspectors also reviewed the 2013 emergency preparedness audit report generated by the licensee's contractor since the last inspection. Based on these activities, inspectors determined the licensee's emergency preparedness program was maintained in a state of operational readiness and had been coordinated with off-site support agencies.

The inspectors determined there were no significant changes to the emergency plan or program since the last inspection. The inspectors determined current copies of the emergency plan and implementing procedures were readily available for emergency response staff.

The inspectors reviewed training records and interviewed emergency response staff regarding emergency preparedness roles and responsibilities. The inspectors interviewed an emergency director, incident commanders, security personnel, health physics personnel, and other members of the emergency response command staff. The inspectors observed first responder and medical personnel classroom training and testing. The inspectors walked-down training facilities for fire, confined space, accident mitigation, and emergency rescue. The inspectors determined the training provided instruction for special emergency situations and the individuals responsible for utilizing special emergency equipment were qualified. The inspectors verified the licensee offered periodic training for fire, law enforcement, emergency services, and medical personnel. The inspectors determined emergency preparedness drills and exercises were conducted to test the emergency response plan at the required frequency and deficiencies were entered into the CAP.

The inspectors reviewed the written off-site support and aid agreements and interviewed a sampling of the off-site response agencies and determined the off-site agencies maintained an adequate understanding of the written agreements and commitments. The inspectors interviewed the emergency management staff of the South Carolina Department of Public Safety, Columbia Fire Department, and Palmetto Health Richland (hospital). The inspectors confirmed that the licensee maintained an effective working relationship and involved the off-site agencies in drills and exercises.

The inspectors observed the storage of emergency equipment in response facilities and on emergency vehicles. The inspectors verified the equipment was maintained in a state of readiness and in good material condition. The inspectors toured the Emergency Operations Center (EOC) and the alternate EOC and verified the centers were readily accessible with adequate communications and emergency preparedness equipment and supplies. The inspectors also reviewed the accountability procedure to evaluate established methods for performing accountability during events.

The inspectors verified problems or deficiencies associated with the emergency equipment and facilities were identified and tracked for correction.

### b. Conclusion

No findings of significance were identified.



### 3. 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 verify that the licensee had not pre-staged equipment in anticipation of the exercise.

The inspectors observed and evaluated the licensee's biennial exercise conducted on May 23, 2013. The scenario, which was executed on third shift, involved a tornado touching down on site and overturning a low level waste (LLW) shipment resulting in LLW containers being dispersed on and off of Westinghouse property. In addition, two fires resulted within the controlled access area.

At the initiation of the emergency drill, the inspectors verified that the licensee adequately assessed the accident scenario, accurately analyzed plant conditions, and properly classified the event. The event was initially classified as an Alert and subsequently upgraded to a Site Area Emergency in accordance with the emergency plan. The inspectors observed the activation of the emergency response organization and noted that all required positions were adequately staffed in accordance with the emergency plan. The inspectors verified that the protective action guidelines identified by the emergency response organization were appropriate for the accident scenario and in accordance with the emergency plan.

The inspectors verified that the initial off-site notifications were prompt and complete in content. The inspectors reviewed a sample of press releases issued by the emergency organization public affairs staff and found the information to be in compliance with the EP implementing procedures.

The inspectors determined that the Emergency Director (ED) maintained adequate command and control of the emergency response organization. The inspectors verified that the ED utilized the off-site dose assessment results during the assessment and classification of the accident scenario.

The inspectors observed members of the licensee's emergency response team (ERT) assemble at the designated assembly area. The inspectors observed the ERT's assessment of the affected area and response. The Incident Commander maintained adequate command and control of the ERT. The inspectors verified that the ERT activities were appropriate for the exercise scenario, in accordance with procedures, and adequate in meeting the drill objectives.

The inspectors observed the staff critiques of the emergency exercise. The inspectors determined that the critiques were effective at identifying areas of improvement and supported open communication. The inspectors verified that the licensee documented the items discussed during the critiques into the CAP.

#### b. Conclusion

No findings of significance were identified.

C. Other Areas

1. Temporary Instruction 2600/017, Review of the Implementation of the Decommissioning Planning Rule (DPR).

Based on the results of the environmental inspection documented in Section A.1 the inspectors verified that the licensee maintained adequate radiological control programs to minimize the introduction of radiological contamination into the site environment, and had a program to ensure that releases of radioactivity to the environment are promptly identified and characterized. In addition, the inspectors verified that the licensee recorded radiological survey data to identify the location and concentrations or quantities of contamination that may require remediation at the time of license termination, and was reporting updated financial assurance as required by the DPR.

2. Follow-up on Previously Identified Issues

- a. (Closed) Enforcement Action (EA)-10-114/VIO 2009-005-02: IFBA PolyPak - the licensee failed to maintain current knowledge of Item B85403, a seven inch polypack container, containing a small amount of uranium enriched to 4.8 percent in U235 isotope.

The inspectors reviewed the corrective actions associated with Violation 2009-005-02 and determined that the corrective actions were adequate to prevent a recurrence. This item is closed.

- b. (Closed) Unresolved Item (URI) 2012-005-02: Verify the licensee's compliance with the emergency plan related to training requirements.

The inspectors reviewed the URI, the licensee's emergency plan, and respective training, and determined that annual emergency training requirements applied to the technical specialist in accordance with Section 7.2, Training, which states that "On-site personnel who are not members of the response organization will receive annual training, as a minimum, to make them aware of what actions they may have to take during an emergency situation." This item is closed.

- c. (Closed) Inspector Follow-up Item (IFI) 2011-005-03: Follow-up on the licensee's actions to clarify emergency classification guidance regarding situations involving the loss of a nuclear criticality safety-related IROFS, which may constitute an uncontrolled deterioration in nuclear criticality safety barriers and may require an Alert declaration.

The inspectors verified that the licensee's emergency plan, implementing procedure, and training included an uncontrolled deterioration of nuclear criticality safety barriers as an example of a condition that could initiate an Alert Emergency. This item is closed.

- d. (Closed) Licensee Event Report (LER) 2011-004-00: Chinese Cylinder Issues  
This LER is closed to license condition S-8 of amendment 16, dated January 11, 2013.
- e. (Closed) LER 2011-005-00: No R stamp on repaired Chinese cylinder  
This LER is closed to license condition S-8 of amendment 16, dated January 11, 2013.

- f. (Closed) Enforcement Action Violation EA-13-156/VIO 2012-005-01: Failure to ensure criticality safety IROFS received full application of the Regulatory Component QA [Quality Assurance] program requirements to assure failure of their availability and reliability was highly unlikely.

This Severity Level IV violation was issued for failing to apply all 18 criteria in NQA-1 to Nuclear Criticality Safety IROFS. Based upon language in the license application Section 3.3, "Quality Assurance," the NRC inspectors determined that Nuclear Criticality Safety IROFS should be receiving the full application of the 18 criteria in NQA-1.

Section 3.3.2.1, "Quality Level A (A-6/A-5); High Consequence Systems ("Crucial"), states in part, that high consequence systems are defined as systems that control the following performance indicators, specifically: a) Greater than or equal to 100 rem dose equivalent to a worker; and c) Greater than or equal to 25 rem dose equivalent to the offsite public. Section 3.3.2.1 also states that "Crucial safety systems receive full application of the Regulatory Component QA Program requirements to assure that failure of their availability and reliability is highly unlikely. That is, each of the 18 criteria that could apply is specifically addressed."

The inspectors noted that the licensee treated several criticality safety IROFS as Safety Significance C (Css) items as described in Section 3.3.2.2, "Quality Levels B (B-4) and Safety Significant C (Css); Intermediate Consequence Systems ("Important")," of the License Application. Section 3.3.2.2 states, in part, that Css items are important to safety and, therefore receive appropriate attention to installation, operation, and maintenance. They are defined by controlling multiple performance indicators including loss of Nuclear Criticality Safety Double Contingency Protection. Section 3.3.2.2 also states, in part, that important safety systems receive selective application of the Regulatory Component QA Program requirements to assure failure of their availability and reliability is unlikely.

As noted in the license renewal request for additional information responses dated May 12, 2006 (ML061460118), Section 3-7 states in part, "The standards utilized to determine the applicability of the QA program elements are described in the license application under Section 3.3.2. As discussed during the onsite visit of the license review team, the Columbia Fuel Fabrication Facility (CFFF) currently has no systems which are considered High Consequence Systems. The safety systems (IROFS) identified in the ISA submitted in support of the license application are therefore currently addressed by the criteria in Section 3.3.2.2".

Based on discussion with the licensee and during a public meeting held April 4, 2013 (ML13095A262), clarifying information was provided by the licensee concerning the application of their QA Program. Quality Level A (A-6/A-5); High Consequence Systems ("Crucial") are those, which if failed, would result in a high consequence event. The intent of Level A is for sole IROFS (i.e. an IROFS that prevents or an IROFS that if failed would result in a high consequence event). The licensee has at least two IROFS at any given part of their processes; therefore, IROFS would not be Level A. The criticality control IROFS which were reference in the original violation are part of "double contingency" controls which are considered Safety Significant C (Css).

Based upon the discussion with licensee and receiving the clarification of the application of their QA Program, the NRC thereby withdraws violation 70-1151/2012-005-01, "Failure to ensure criticality safety IROFS received full application of the Regulatory

Component QA Program requirements to assure failure of their availability and reliability was highly unlikely.”

D. Exit Meeting

The inspection scope and results were presented at exit meetings held on May 10, 22, and 23, and June 19 and 20, with Dave Precht and staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

## **SUPPLEMENTARY INFORMATION**

### **1. Key Points of Contact**

<u>Name</u>	<u>Title</u>
P. Bartman	EH&S Quality Assurance Lead
R. Bates	Maintenance and Equipment Improvement
E. Byrd	Licensing Engineer
S. Carver	EH&S Emergency Preparedness Manager
R. Crews	Environmental & Health Physics Technician
D. Hennings	Work Week Manager
T. Hinson	Backshift Manager for Health Physics
J. Howell	Conversion Area Manager
C. Kneece	Industrial Safety Manager
C. Logsdon	Principle Environmental Engineer
M. Mann	Security Manager
T. Northcutt	Corrective Actions Manager
N. Parr	EH&S Licensing Manager
J. Peterson	Site Maintenance Manager
B. Phillips	Conversion Operations Manager
D. Precht	Plant Manager
D. Shealy	Incident Commander
C. Snyder	EH&S Engineering Manager
T. Wells	Work Management Group Manager

### **2. List of Items Opened, Closed, and Discussed**

#### Closed

70-1151/EA-10-114	VIO	Failure to maintain current knowledge of Item B85403 2009-005-02
70-1151/2012-005-02	URI	Verify the licensee's compliance with the emergency plan related to training requirements
70-1151/2011-005-03	IFI	Clarify emergency classification guidance regarding loss of a nuclear criticality safety-related IROFS
70-1151/2011-004	LER	Chinese Cylinder Issues
70-1151/2011-005	LER	No R stamp on repaired Chinese cylinder
70-1151/2012-005-01 EA-13-156	VIO	Failure to ensure criticality safety IROFS received full application of the Regulatory Component QA [Quality Assurance] program requirements to assure failure of their availability and reliability was highly unlikely.

### 3. **Inspection Procedures Used**

IP 88025	Maintenance and Surveillance of Safety Controls
IP 88045	Effluent Control & Environmental Protection
IP 88050	Emergency Preparedness
IP 88051	Evaluation of Exercises and Drills
IP 92702	Followup on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders

### 4. **Documents Reviewed**

#### Records:

2011 EH&S Program and Formal Compliance Audit Status, dated January 19, 2012  
 2012 EH&S Program, Supplier and Formal Compliance Audit Schedule, dated January 14, 2013  
 2013 EH&S Program, Supplier and Formal Compliance Audit Schedule, dated January 18, 2013  
 Calibration, Activity Monitor FTS1116, dated November 21, 2012  
 Calibration, Activity Monitor RTS1493A, dated April 1, 2013  
 Calibration, Activity Monitor RTS1493B, dated April 2, 2013  
 Calibration, Activity Monitor PHT1115, dated May 29, 2013  
 Calibration, Activity Monitor PHT1116, dated May 29, 2013  
 Effluent Air Sample Status/Exception Report, dated June 19, 2013  
 Effluent Air Weekly Report (June 10, 2013 – June 16, 2013)  
 EH&S-Audit-12-3, Audit of Shealy Environmental Services, dated March 8, 2012  
 EH&S-Audit-12-9, EH&S Audit of the Environmental Protection Program, dated May 29, 2012  
 EH&S-Audit-12-20, Audit of Shealy Consulting, LLC, dated June 5, 2012  
 Emergency Responder Training Tracking Matrix  
 ERO Members Individual Training Records – 2013  
 Flowmeter Verification for Roof Board, dated August 24, 2012  
 Flowmeter Verification for Roof Board, dated January 23, 2013  
 Formal Compliance Audit, dated March 8, 2013  
 GEL Laboratories LLC – Login Review Report-Chain of Custody (2013)  
 Soil & Vegetation Report, dated October 24, 2012  
 Tennelec Calibration Record, Tennelec #3, dated April 7, 2013  
 Tennelec Calibration Record, Tennelec #4, dated April 13, 2013  
 Tennelec Calibration Record, Tennelec #4, dated April 14, 2013  
 Tennelec Calibration Record, Tennelec #5, dated May 16, 2013  
 Tennelec Calibration Record, Tennelec #6, dated April 30, 2013  
 Tennelec Calibration Record, Tennelec #7, dated April 28, 2013  
 Tennelec Calibration Record, Tennelec #8, dated April 7, 2013  
 Tennelec Calibration Record, Tennelec #8, dated May 9, 2013  
 Tennelec Calibration Record, Tennelec #8, dated May 15, 2013  
 Tennelec Calibration Record, Tennelec #8, dated May 18, 2013  
 Tennelec Calibration Record, Tennelec #8, dated May 25, 2013  
 Tennelec Calibration Record, Tennelec #9, dated April 6, 2013

Maintenance Records: WO 620804, WO 618134, WO 608586, WO 620714,  
 WO 20144, WO 615950, WO 615250, WO 618810,  
 WO 620249, WO 620717, WO 614784, WO 620847,  
 WO 621232, WO 620796

Procedures:

CA-002, "Columbia Plant Electronic Training and Procedure System (ETAPS),"  
 Rev. (Rev.) 48, dated May 16, 2013  
 CA-007, "Corrective and Preventive Action," Rev. 28, dated October 11, 2012  
 CA-205, "Maintenance Planning and Control System (MAPCON)," Rev. 7, dated May 17,  
 2012  
 COCL-L02, "Determination of Low-Level Uranium by Pulsed Laser Phosphorimetry,"  
 Rev. 10, dated February 4, 2013  
 COCL-M09, "Determination of Low Level Uranium (ppm U) using the Agilent Inductively  
 Coupled Plasma Mass Spectrometer (ICP-MS)," Rev. 4, dated February 4, 2013  
 COCL-T10, WinLIMS Laboratory Information Management System, Rev. 2, dated  
 February 15, 2010  
 COP-816001, "Pressure Test of UF6 Supply and Education Lines," Rev. 13, dated  
 March 4, 2013  
 COP-872050, "Pellet Coater Fixture Unloading," Rev. 35, dated January 30, 2012  
 FA-106, "Installation Instructions," Rev. 15, dated May 31, 2012  
 MCP-108000, "Preventative Maintenance," Rev. 16, dated May 13, 2010  
 MCP-108103, "Maintenance Work Order Handling," Rev. 28, dated January 31, 2013  
 MCP-202002, "Industrial Instrument Calibration," Rev. 29, dated April 4, 2013  
 MCP-203301, "Verification of Interlock ADUVAP-903: Vaporizer High Steam Pressure,"  
 Rev. 4, dated February 22, 2013  
 RA-106, "Internal Program, Formal Compliance, & Supplier Audits," Rev. 24, dated  
 July 5, 2012  
 RA-121, "Redbook Internal Reporting System," Rev. 10, dated March 7, 2013  
 RA-134, "Columbia Plant Safety Event Response Guidelines," Rev. 0, dated October 28,  
 2010  
 RA-406, "Sampling Congaree River Water, Fish and Sediment," Rev. 5, dated  
 October 6, 2011  
 ROP-01-025, "Calibration of the TENNELEC Automatic Sample Counters," Rev. 18,  
 dated December 20, 2012  
 ROP-01-028, "Calibration Verification of Flowmeters," Rev. 11, dated January 31, 2012  
 ROP-01-040, "Calibration of the iMATIC Automatic Sample Counters," Rev. 1, dated  
 December 13, 2012  
 ROP-05-004, "Determining Gross Alpha Activity of an Aqueous Sample," Rev. 17, dated  
 February 28, 2013  
 ROP-06-001, "NPDES Daily, Weekly, and Monthly Effluent Sample Collection," Rev. 34,  
 dated May 1, 2013  
 ROP-06-002, "Roof Effluent Air Sampling and Counting," Rev. 20, dated August 16,  
 2012  
 ROP-06-003, "Ambient Environmental Air Monitoring for Radioactivity," Rev. 12, dated  
 January 13, 2011  
 ROP-06-004, "Determination of Gaseous Fluoride Using Calcium Oxide Papers," Rev. 5,  
 dated February 2, 2012  
 ROP-06-006, "Collection of Routine Weekly and Monthly Environmental Samples,"  
 Rev. 21, dated January 31, 2013  
 ROP-06-007, "Groundwater Well Sampling," Rev. 19, dated July 9, 2012

ROP-06-010, "Quarterly Storm Water Monitoring and Visual Inspection," Rev. 3, dated January 17, 2013  
 ROP-06-011, "Ammonia Stack Monitoring," Rev. 2, dated June 7, 2012  
 ROP-06-012, "Method 9 Stack Emissions Opacity Monitoring," Rev. 1, dated June 14, 2012  
 WEC 22.5, "Westinghouse Human Performance Program," Rev. 1, dated February 8, 2010  
 WM-008, "Work Management Planning," Rev. 1, dated July 28, 2011  
 WM-007, "Work Management Scheduling," Rev. 1, dated May 20, 2010

Issue Reports Written as a Result of the Inspection:

13-087-C002 Documented Comments Identified by NRC during IP 88020 inspection, dated March 28, 2013  
 IR13-143-C003, Documented comments identified by Westinghouse staff and critiques during biennial emergency drill  
 13-133-C010, Documented during IP 88025 inspection, dated May 10, 2013  
 13-133-C011, Documented during IP 88025 inspection, dated May 10, 2013  
 13-133-C012, Documented during IP 88025 inspection, dated 10, 2013  
 13-133-C013, Documented during IP 88025 inspection, dated 10, 2013  
 13-142-C010, "Micro R Radiation Instrument Scale Selection Not Legible," dated May 22, 2013  
 13-142-C007, "Security Related Issue," dated May 22, 2013

Issue Reports (IRs) Reviewed:

12-290-C008, "NPDES Violation Laboratory Section," dated October 16, 2012  
 13-037-C012, "Toshiba Environmental Audit 2012-Waste Water Treatment," dated February 6, 2013  
 13-129-C005, "Unexpected Accumulation of Material Discovered Behind Uranium Room Hood," dated May 9, 2013  
 13-129-M047, "Scrap Cage Instrument Air," dated May 9, 2013  
 13-066-C008, 13-066-C009, 13-066-C010, 13-066-C011, 13-067-C003, 13-129-C005, 13-130-C018  
 13-066-C012, "Audit of Emergency Preparedness Program," EHS-Audit-13-5, dated March 7, 2013  
 12-280-C001.02, "Emergency Vehicle for Wild Land Fires," dated October 29, 2012  
 12-280-C001.03, "Emergency Resources from Columbia Fire Department," dated October 29, 2012  
 13-066-C012.01, "Incident Commanders Individual Log Books," dated March 20, 2013  
 13-066-C012.02, "Concrete Barriers at Alpha Gate," dated March 20, 2013  
 13-0660C012.03, "Additional Standpipe Needed to the Roof," dated March 20, 2013  
 13-066-C012.06, "Number of Qualified Emergency Directors," dated March 20, 2013  
 13-066-C012.07, "Emergency Response Team Procedures," dated March 20, 2013  
 11-062-C016, IFBA "WIP Evaluation Improvement Items," dated March 3, 2011  
 11-062-C016.01, "WIP Evaluation Improvement Action," dated March 3, 2011  
 09-142-C005, "Item Control Anomaly," dated May 22, 2009  
 Redbook 63393  
 Redbook 63389  
 Redbook 63394



Other Documents:

CF-81-934, "Conversion Line 3: Safety Significant Interlocks, Alarms and Passive"

COCL-T12, "Chemical Hygiene Plan," Rev 15, dated April 3, 2013

EH&S Organization Chart

"Engineered Controls Functionality Verification Form", Rev. 55, dated May 1, 2013

Letters of Agreement: Columbia Fire Department, dated October 25, 2012

Richland County Emergency Services Department, dated September 1, 2011

Richland County Sheriff's Department, dated August 17, 2011

South Carolina Department of Public Safety and Highway Patrol, dated August 23, 2011

Palmetto Health Richland, dated August 25, 2011

National Nuclear Security Administration, Savannah River Site Office, dated

September 20, 2011

South Carolina Emergency Management Division, South Carolina Department of Health and Environmental Control, dated April 15, 2010

LTR-EHS-13-10," Assessment of Public Radiological Dose from Liquid and Gaseous Effluents for Calendar Year 2012," dated February 8, 2013

May 2013 Annual Shutdown / Inventory / Power Outage Maintenance Schedule

NRC Semi-annual Discharge Report, dated August 29, 2012

NRC Semi-annual Discharge Report, dated February 21, 2013

Redbook/Greenbook – Listing of Environmentally-Related Issues (September 11, 2012- June 18, 2013)

Site Emergency Plan for the Columbia Fuel Fabrication Facility; dated September 24, 2011

TRN-095, Emergency Operations Center Refresher Training Materials