



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

October 27, 2014

Mr. David Precht
Vice President, Columbia Fuel Operations and
Manager, Columbia Plant
Westinghouse Electric Company
5801 Bluff Road
Hopkins, SC 29061

**SUBJECT: WESTINGHOUSE ELECTRIC COMPANY – NUCLEAR REGULATORY
COMMISSION INSPECTION REPORT 70-1151/2014-004**

Dear Mr. Precht:

The Nuclear Regulatory Commission (NRC) conducted an announced inspection during the third quarter in calendar year 2014 (July 1 - September 30, 2014) at the Westinghouse Columbia Fuel Fabrication Facility in Hopkins, SC. The purpose of the inspection was to review implementation of programs and procedures for operational safety. The reviews were conducted to determine whether licensed activities were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of this inspection. At the conclusion of the inspection, the results were discussed with you and members of your staff at exit meeting on July 10, 2014.

During the inspection, 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 inspection consisted of facility walk-downs; selective examinations of relevant procedures and records; interviews with plant personnel; and plant observations. Throughout the inspection, observations were discussed with your managers and staff. Based on the results of the inspection, no findings of significance were identified.

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

D. Precht

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

Sincerely,

/RA/

Marvin D. Sykes, Chief
Projects Branch 2
Division of Fuel Facility Inspection

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

Enclosure:
NRC Inspection Report 70-1151/2014-004
w/Supplemental Information

cc:
Carl Snyder
Acting 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

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

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.: 70-1151

License No.: SNM-1107

Report No.: 70-1151/2014-004

Licensee: Westinghouse Electric Company

Facility: Columbia Fuel Fabrication Facility

Location: Hopkins, SC 29061

Dates: July 1 through September 30, 2014

Inspector: P. Startz, Fuel Facility Inspector (Section A.1)

Approved by: M. Sykes, Chief
Projects Branch 2
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Westinghouse Electric Company
Columbia Fuel Fabrication Facility
NRC Integrated Inspection Report 70-1151/2014-004
July 1 through September 30, 2014

An inspection was conducted by a Nuclear Regulatory Commission regional inspector during normal shifts in the area of safety operations. During the inspection period, normal production activities were ongoing. The announced inspection consisted of a selective examination of procedures and representative records, observations of activities, walk-downs of items relied on for safety (IROFS), and interviews with licensee personnel. No safety significant findings were identified.

Safety Operations

- The licensee properly implemented IROFS and maintained them such that they will perform their intended safety function. (Paragraph A.1)

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 (UF₆) into uranium dioxide using a wet conversion process and fabricates fuel assemblies for use in commercial nuclear power reactors. During the inspection period, normal production activities were ongoing.

A. Safety Operations

1. Plant Operations (IP 88020)

a. Inspection Scope and Observations

The inspector interviewed staff and reviewed records associated with the operational aspects of the Ammonium Di-Urinate (ADU) Conversion process. The inspector performed an in-depth evaluation of how operators work with and around the ADU calciner including product transfer glove boxes, off-gas scrubber/ventilation system, and automated safety systems with particular emphasis on the hydrogen ADU calciner off-gas system. Additionally, the inspector investigated how hydrogen was safely managed within the system to mitigate combustion events that could occur in the calciner exhaust system and the powder pack product transfer system/packaging glovebox. It was determined that the licensee ensures safety of the system with the use of in-process seals that prevent hydrogen from entering certain production equipment; and ultimately through dilution with the process off-gas ventilation system. It was determined that documentation supporting safety of the ventilation system and the items relied on for safety (IROFS) used to monitor the complex system of safety controls was being adequately implemented as described in the Integrated Safety Analysis (ISA).

The inspector confirmed that samples of active and passive engineered controls selected for review were present and capable of performing their intended safety functions. To complete this confirmation, the inspector evaluated and verified the physical presence of passive and active engineered safety controls to determine their capability and operability, and verified that potential accident scenarios were covered.

The inspector reviewed various Chemical Operating Procedures (COPs) and Maintenance and Calibration Operating Procedures (MCPs) and determined that required actions as identified in the ISA Summary have been correctly transcribed into written operating procedures. The inspector evaluated the procedures' contents with respect to operating limits and operator responses for upset conditions and verified that limits needed to assure safety were adequately described in the procedures.

Through interviews and document reviews, the inspector verified that the licensee conducted preventive maintenance, calibration, and periodic surveillance as required by the ISA Summary for the selected safety controls that were reviewed.

b. Conclusion

No findings of significance were identified.

B. Other Areas**Follow-up on Previously Identified Issues****(Closed) Inspector Follow-up Item (IFI) 70-10-1151/2013-201-01:**

This item tracks the completion of the Nuclear Criticality Safety Improvement Plan (NCSIP2). This project was initiated to remove passive and active engineered features from non-credibility determinations as these would otherwise not be considered IROFS with supportive management measures. The licensee committed to completion of the NCSIP2 by December 31, 2014 with the final ISA update completed by January 31, 2015. License conditions S-6 and S-7 were incorporated into the license to specify the expectations for the evaluations of non-credibility and time for completion.

The inspectors determined that further tracking of the completion of NCSIP2 is no longer needed based on the sample of criticality safety evaluations (CSEs) reviewed, the progress of the licensee's implementation of the revised CSEs, and proper designation of IROFS in credible accident sequences in the samples reviewed. Future changes to CSEs, IROFS, and other licensee systems and documents will be reviewed as part of NRC's routine inspection program. This item is considered closed.

C. Exit Meeting

The inspection scope and results were presented at an exit meeting held on July 10, 2014, with Dave Precht and staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

SUPPLEMENTAL INFORMATION

1. KEY POINTS OF CONTACT

<u>Name</u>	<u>Title</u>
E. Byrd	Licensing Engineer, Environmental Safety & Health (EH&S)
J. Howell	Conversion Area Manager
C. Kneece	Industrial Safety Manager
T. Northcutt	Corrective Actions Manager
N. Parr	EH&S Licensing Manager
B. Phillips	Conversion Operations Manager
D. Precht	Plant Manager
W. Sepitko	EH&S Manager

Other licensee employees contacted included engineers, technicians, production staff, and office personnel.

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

IFI 70-1151/2013-201-01	Closed	Tracks the completion of NCSIP2, final associated actions due by January 31, 2015
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3. INSPECTION PROCEDURE USED

IP 88020 Operational Safety

4. DOCUMENTS REVIEWED

Records:

EHS-AUDIT-13-20, Environment Health & Safety Audit 13-20, Chemical Safety Programs, dated January 24, 2014
EHS-AUDIT-14-1, CFFF, Formal Compliance Audit – Nuclear Material Storage (ISA 16), dated January 16, 2014

Procedures:

ISA Summary, ISA03 ADU Conversion System Summary, Revision (Rev.) 9CA-002, Columbia Plant CSE-03-1, Criticality Safety Evaluation (CSE) for The Columbia Fuel Fabrication Facility ADU Conversion Calciner, dated June 2013
CPE-RUH-06-014, , CONVERSION AREA CALCINER H2 and NATURAL GAS HAZARD LOPA REPORT, revised on March 15, 2007
COP-810098, UF6 Cylinder Installation and Removal, Rev. 44, dated March 6, 2014
COP-810099, UF6 Vaporizer, Rev. 25, dated November 6, 2013
COP-810103, UF6 Bay Condensate Removal System, Rev. 23, dated June 4, 2012
COP-810901, Calcination, Rev. 43, dated February 18, 2014