



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

July 18, 2018

Mr. Mike Annacone
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 INTEGRATED INSPECTION REPORT NUMBER 70-1151/2018-003**

Dear Mr. Annacone:

This letter refers to an inspection conducted from April 1 through June 30, 2018, at the Westinghouse Columbia Fuel Fabrication Facility in Hopkins, SC. The purpose of this inspection was to determine whether activities authorized under the license were conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The enclosed inspection report presents the results of this inspection.

The inspection examined activities conducted under your license as they relate to public health and safety, the common defense and security, and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that no violations of more than minor significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of NRC's "Rules of Practice and Procedure," 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>.

If you have any questions, please contact Tom Vukovinsky of my staff at (404) 997-4622.

Sincerely,

/RA/

Eric C. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

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

Enclosure:
NRC Inspection Report 70-1151/2018-003
w/Supplemental Information

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SUBJECT: WESTINGHOUSE ELECTRIC COMPANY – NUCLEAR REGULATORY
 COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-1151/2018-003

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.: 70-1151

License No.: SNM-1107

Report No.: 70-1151/2018-003

Licensee: Westinghouse Electric Company

Facility: Columbia Fuel Fabrication Facility

Location: Hopkins, SC 29061

Dates: April 1 through June 30, 2018

Inspectors: M. Crespo, Senior Fuel Facility Inspector (Paragraph A)
T. Vukovinsky, Senior Fuel Facility Inspector (Paragraph C)
R. Womack, Fuel Facility Inspector (Paragraph B)

Approved by: E. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Westinghouse Electric Company
Columbia Fuel Fabrication Facility
Nuclear Regulatory Commission Integrated Inspection Report 70-1151/2018-003
April 1 through June 30, 2018

The inspection was conducted by Nuclear Regulatory Commission (NRC) regional inspectors during normal shifts in areas of operational safety and facility support. The inspectors performed a selective examination of license 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 violations of more than minor significance identified during the inspection.

Operational Safety

- In the area of Fire Protection, no violations of more than minor significance identified during the inspection. (Paragraph A.1)

Facility Support

- In the area of Emergency Preparedness, no violations of more than minor significance identified during the inspection. (Paragraph B.1)

Other

- Review of the performance evaluation to change the S1030 Scrubber system inspection frequency from 13 to 26 weeks. (Paragraph 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 (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. Fire Protection (Annual) (Inspection Procedure 88055)

a. Inspection Scope

The inspectors conducted walk downs of the chemical and mechanical areas of the plant as well as the roof and adjacent buildings to assess the condition and implementation of fire protection safety controls and items relied on for safety (IROFS). The inspectors reviewed samples of preventive maintenance records for fire pump two, the hot oil room, and various hydrogen and natural gas lines for the incinerator, calciner, and tank farm to verify that the fire protection systems were maintained in accordance with the requirements of the integrated safety analysis and the license application. In addition, the inspectors evaluated the maximum special nuclear material assumptions used for the fire related accident sequences for the ventilation system and the incinerator in the integrated safety analysis to verify the assumptions reflected actual plant conditions.

The inspectors reviewed the storage of flammable materials and liquids throughout the process areas to verify they were stored according to approved procedures. The inspectors also assessed the status of transient combustibles to verify that combustible loading was consistent with the approved housekeeping procedure, SYP-300, "Housekeeping."

The inspectors reviewed the condition of fire dampers, fire doors, and penetration seals on fire walls to verify that they were being maintained in a condition that would ensure they were available and reliable to perform their safety function as required by Section 8.1.3 of the license application. Also, the inspectors reviewed the condition of portable extinguishers at their designated locations to verify that the extinguishers were maintained according Section 8.1.6.1 of the license application.

The inspectors reviewed the licensee's fire protection impairment of fire pump one while it was undergoing refurbishment to verify that adequate compensatory measures had been put in place that meet the requirements of Section 8.1.6.2 of the license application.

The inspectors reviewed the licensee corrective action program (CAP) entries for the past 12 months to verify that problems or deficiencies associated with the fire protection or implementing procedures were dispositioned in accordance with the approved corrective action.

The inspectors interviewed fitzmill operators and reviewed their procedures to verify that the training on hazardous powder characteristics required by Section 8.1.4.4 of the license application had been implemented. The inspectors also interviewed an incident commander, security personnel stationed at the fire alarm panel, and licensee personnel

conducting fire work to verify that training and knowledge of their applicable fire protection systems were according to requirements of Chapter 8 of the license application.

b. Conclusion

No violations of more than minor significance identified during the inspection.

B. Facility Support

1. Emergency Preparedness (Inspection Procedure 88050)

a. Inspection Scope

The inspectors interviewed licensee staff and reviewed procedural revisions in order to verify that no changes to the Emergency Preparedness (EP) program had been made that decrease the effectiveness of the Site Emergency Plan (SEP) as required by 10 CFR 70.32(i). The inspectors verified that changes made to the EP program met current licensing commitments under License Condition S-2 of SNM-1107. The inspectors toured areas designated as Emergency Operation Centers (EOCs) in order to verify that current plans and procedural revisions were available for use as required. The inspectors also verified that the licensee's call list for both onsite and offsite personnel was current in accordance with Section 4.26.

The inspectors reviewed the SEP to verify that firefighting precautions for NCS are included in procedures and coordinated with offsite agencies as required by Section 5.3.1. The inspectors toured EOC sites to verify that current pre-fire plans are available in field locations as required. The inspectors also verified that reentry and recovery to areas following an emergency event and evacuation are governed by specific procedures as required.

The inspectors reviewed samples of training records and interviewed licensee staff regarding emergency preparedness training in the past year. The inspectors conducted this review to verify that the licensee provided training for designated emergency response personnel in accordance with Section 7.2 of the SEP. The inspectors also reviewed the training topics and records for fire brigade members to verify that training complied with 29 CFR 1910.156 and that training sessions were held within the frequency as specified. The inspectors interviewed senior licensee staff members including the emergency preparedness manager and an emergency director to verify that emergency response officials were familiar with expected emergency situations consistent with the SEP.

The inspectors reviewed the written agreements with the offsite agencies to verify that the organizations designated in Section 4.26 of the SEP had up-to-date agreements. The inspectors reviewed records to verify that the licensee invited the off-site organizations for training and drill participation as described in Section 7.3. The inspectors also reviewed drill schedules and post incident analyses to verify that items identified during critiques and events were being captured and addressed in the corrective action program and that drills were conducted within the required timeframe.

The inspectors observed the storage of emergency equipment in Conference Room 200, the Emergency Brigade Building, the Station Meeting Room, the Pavilion, and the Gate 1 Guard Station to verify that equipment was maintained as required by Chapter 6 of the SEP.

The inspectors reviewed the most recent licensee conducted audit of the EP program to verify that the audit covered the scope, independence, and other requirements of Section 7.8. The inspectors reviewed corrective actions from the audit results as well as other CAP entries related to the EP program in order to verify that findings and recommendations were being identified and addressed in accordance with the licensee's CAP.

The inspectors reviewed documentation of events that have occurred since the last EP inspection that required the implementation of the Emergency Plan to verify that problems or deficiencies associated with the Emergency Plan or implementing procedures were dispositioned in accordance with the approved corrective action program.

b. Conclusion

No violations of more than minor significance identified during the inspection.

C. Performance Evaluation of the S-1030 Scrubber System

The inspectors reviewed the "Performance Evaluation of the S-1030 Scrubber System After the Fifth Completion of OM81037: 13 Week OM – S1030 Packing Baskets, Scrubber Body, Inlet Transition and Chevron Baffle Inspection and Cleaning, Revision (Rev.) 1," hereafter referred to as the "Performance Evaluation." The Performance Evaluation was conducted by the licensee to document their technical justification to adjust the frequency of the S-1030 scrubber inspections from a 13-week frequency (quarterly) to a 26-week frequency (semi-annual). The IROFS reviewed included: VENT-S1030-105; -107; -108; -124; -126; -127; -128; -129; -136; -137; -139; -140; -141; -144; -146; and -147. These IROFS are detailed in CSE-1-E, "S-1030 Scrubber System," Rev. 14. The Performance Evaluation documented the results of the first five completions of the 13-week scrubber inspections as well as the completion of eighty-five weekly inspections of OM81038, "Weekly OM S-1030 Inlet Transition, Elbow and Front of Basket Media Inspection." The inspectors reviewed the Performance Evaluation, including the quantified data and margin of error calculations for each section of the S1030 scrubber as well as the projected future scrubber system uranium loading for the periodicity change from 13 to 26 weeks. The inspectors noted that the predicted loading for a frequency change to 26-weeks was within the safety limits described in CSE-1-E.

The licensee submitted the Performance Evaluation to the NRC on July 11, 2018, as required by Confirmatory Order (ML17221A112) Section V.4 (4), for a change to the modifications to the S-1030 scrubber system.

D. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on June 14, 2018, to M. Annacone 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>
L. Berry	Acting Emergency Preparedness Manager
S. Carver	Emergency Preparedness
G. Couture	Licensing Engineer
J. Williams	Fire Protection Engineer

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

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Not Applicable

3. INSPECTION PROCEDURES USED

IP 88050, Emergency Preparedness
IP 88055, Fire Protection (Annual)

4. DOCUMENTS REVIEWED

Records:

SYP-305, Fire Watch Safety, Rev. 9
SYP-207, Cutting, Welding, and Hot Work, Rev. 33
SYP-300, Housekeeping, Rev. 26
SYP-303, Portable Fire Extinguisher Inspection and Maintenance, Rev. 11
Work Orders: 806450, 781774, 764897, 767573, 772476, 760551, 760555
TRN-049, Fire Watch – Hot Work Training
COP-811001, Fitzmill, Rev. 58
PM20209 for IROFS CHEM-407
CFFF Fire Protection Modifications, September 2017
SYF-306-5, Fire Protection Impairment Form, Rev. 1
TA-500, Columbia Manufacturing Plant Configuration Control, Rev. 35
SYP-203, Isolation of Hazardous Energy, Rev. 25
CAF-300-01, Trainee / Meeting Attendance Roster, Rev. 1, dated May 12, 2016
EHS-AUDIT-18-3, Emergency Preparedness Program Audit, dated April 26, 2018
ROF-07-001-9, EHS Operations Emergency Equipment – HP Lab, Rev. 9, dated February 8, 2018
SEPF-009-1, Command Check Sheet – Uranyl Nitrate (UNH) Solution Release, Rev. 2, dated September 22, 2016
SEPF-009-3, Command Check Sheet – Injured Employee, Rev. 9, dated May 14, 2015
SEPF-009-3, Command Check Sheet – Injured Employee, Rev. 10, dated July 27, 2017
SEPF-009-3, Command Check Sheet – Injured Employee, Rev. 13, dated May 10, 2018
SEPF-009-4, Command Check Sheet – Ammonia Release – Conversion Area, Rev. 7, dated September 22, 2016
SEPF-009-7, Command Check Sheet – HF Release, Rev. 4, dated September 22, 2016
SEPF-009-18, Command Check Sheet – Spills Outside, Rev. 5, dated August 17, 2017

SEPF-009-26, Command Check Sheet – Ammonia Release – URRS Area, Rev. 4, dated September 13, 2016
 SEPF-009-29, Command Check Sheet – Response To Car Fire, Rev. 0, dated July 27, 2017
 SEPF-014-22, TOOL ROOM Severe Weather Preparations, Rev. 0, dated August 10, 2017
 SEPF-014-23, QC Receiving/Tool and Gauge Severe Weather Preparations, Rev. 0, dated September 8, 2017
 SEPF-014-24, Severe Weather Preparations, Rev. 0, dated September 28, 2017
 SEPF-013-1, Post Incidence Analysis, Rev. 5, dated September 22, 2017
 SEPS-009-8, Hydrofluoric Acid Facility Preplan, Rev. 3, dated September 8, 2013
 SEPS-009-9, Incident Action Plan, Rev. 1, dated October 20, 2011
 SEPS-009-11, Hazardous Material Incident Tactical Worksheet, Rev. 1, dated August 8, 2013

Procedures:

CA-006, Columbia Plant Training Delivery System (TDS), Rev. 20, dated August 17, 2017
 SEP-007, Notification Guidelines for NRC and Other Agencies, Rev. 45, dated April 13, 2018
 SEP-009, Emergency Response Organization Check Sheets, Rev. 16, dated August 31, 2017
 SEP-014, Response to Extreme Environmental Conditions, Rev. 5, dated August 31, 2017

Other Documents:

CSE-1-E, S-1030 Ventilation System, Rev. 14
 Site Emergency Plan, effective date of revision: November 28, 2016
 TRN-001-2, Annual Refresher HP Emergency Response Training, Rev. 9
 TRN-001-6, CFFF Annual Required Training, Rev. 4
 TRN-095, Emergency Operations Center Refresher Training, Rev. 1

Condition Reports Written as a Result of the Inspection:

2018-10973; 2018-11023

Condition Reports:

100498101, 3rd Quarter 2017 ERT Drills All shifts
 2018-7288, Internal Oversight: Recommend Reviewing for Effectiveness Activities Necessary to Implement the Site Emergency Plan
 2018-7755, Lack of Communication and Barricade during AC-32 Zirc Fire
 2018-9169, Internal Oversight: EHS Audit for the Emergency Preparedness Program, Emergency Preparedness
 2018-10568, Training related issues from HAZMAT Shutdown training 2018
 Other: IR-2018-10982; IR-2018-11065; IR-2018-11073; IR-2018-11084