



Westinghouse Electric Company LLC  
Columbia Fuel Site  
5801 Bluff Road  
Hopkins, South Carolina 29061-9121  
USA

Director, Office of Nuclear Material Safety and Safeguards and  
Environmental Review  
U. S. Nuclear Regulatory Commission  
Document Control Desk  
11555 Rockville Pike  
Rockville, Maryland 20852-2738

Direct tel: 803-647-3338  
Direct fax: 803-695-2119  
e-mail: [couturgf@westinghouse.com](mailto:couturgf@westinghouse.com)  
Your ref:  
Our ref: LTR-RAC-19-63

August 8, 2019

SUBJECT: WESTINGHOUSE REPORTED EVENT # EN54161 FOLLOW-UP REPORT

Westinghouse Electric Company LLC (Westinghouse) is providing the following information in accordance with 10CFR70.50. A copy of the initial notification report, Event Report #EN54161 pertaining to the Columbia Fuel Fabrication Facility (CFFF) can be found in Enclosure 1 and provides the applicable information required by 10CFR70.50(c)(1). The information required in accordance with 10CFR70.50(c)(2) is provided in Enclosure 2.

Please know that Westinghouse remains committed to compliance with all governing regulations and license requirements.

If you have any questions regarding this information, please contact me at (803) 647-2119.

Sincerely,

*Robert D Janis for Gerard F Couture*

Gerard F. Couture  
Licensing Manager, Acting  
Westinghouse Columbia Fuel Fabrication Facility  
Docket 70-1151 License SNM -1107

Enclosure 1: Original Event Report #EN54161 dated July 12, 2019.

Enclosure 2: 10CFR70.50(c)(2) Required Information

cc:

U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, Maryland 20852-2738  
Attn: Ms. Marilyn Diaz  
Mail Stop: TWFN-4A60

U. S. Nuclear Regulatory Commission, Region II  
245 Peachtree Center Avenue NE, Suite 1200  
Atlanta, GA 30303-1257  
Attn: Mr. Tom Vukovinsky

## ENCLOSURE 1

Original Event Report #EN54161 dated July 12, 2019.

### Caller Identification and Facility Information

Gerard Couture, Licensing Manager. Call-Back Number (803) 647-2119 or (803) 727-2127.  
Westinghouse Electric Company LLC, Commercial Fuel Fabrication Facility, Columbia SC. Low enriched (5.0 wt. % U-235) fuel fabricator for commercial light water reactors. License: SNM-1107.

24 Hour Event Notification based on 10CFR70.50 Reporting Requirement (b) (4). *Twenty-four hour report*. Each licensee shall notify the NRC within 24 hours after the discovery of any of the following events involving licensed material:

(4) An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and

(ii) The damage affects the integrity of the licensed material or its container.

### Description of the Event

On July 12, 2019, at approximately 0152 EDT operations personnel in the Uranium Recycle and Recovery area of the plant reported an incident. Production packaged wet recoverable material on July 12 (3<sup>rd</sup> shift) into a closed drum at the designated drum loading station, performed the required assay measurement and placed the drum into storage. Shortly afterward, the drum pressurized forcing the lid off and some contents to disperse into the immediate vicinity. The drum contents were smoldering, smoke was observed and the smoke detector activated. Dry paper in the drum created a small fire, which was promptly extinguished without use of a water hose or a fire extinguisher. A small portion of the drums contents was impacted. The drum was then separated from other stored material. There were no personal injuries. Health Physics monitored the area with no airborne results approaching radiological limits and no personnel were affected.

The drum contained production-related contaminated wet recoverable material (e.g., mop heads, filters, and rags) and laboratory waste. The assay results showed a Uranium 235 content of 71.45 Grams. This quantity of material meets the reporting threshold noted above.

### Immediate Corrective Actions.

Loading operations of wet recoverable material have been suspended pending further evaluation. Operations checked the other drums in the area with heat monitoring equipment and no additional heat generation issues were identified. This incident has been entered into the facility's corrective action program.

This incident had no impact on the health and safety of the employees, the public or the environment.

## ENCLOSURE 2

## 10CFR70.50(c)(2) Information:

***(i) Complete applicable information required by § 70.50(c)(1);***

This information has been provided in Enclosure 1 of this correspondence.

***(ii) The probable cause of the event, including all factors that contributed to the event and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;***

The causal analysis determined the likely cause was an exothermic reaction from mixing of incompatible chemicals. The heat generated increased pressure in the sealed drum. Once exposed to air, the heat ignited dry paper material that was placed into the "wet" collection drum. The analysis also concluded that the following items contributed to the event:

- Controls on placement of materials in the drums for recovery of Uranium 235 were not robust enough to prevent the introduction of incompatible materials. Materials containing acids, ammonia and other chemicals used in the process areas were allowed to be loaded into the drums.
- Process knowledge existed that drums in the process were subject to over pressurization. This risk was accepted with minimal administrative or engineered controls to prevent or mitigate the situation.
- Once full, collection drums were required to have the lid in place and sealed for compliance with requirements for Criticality Safety and Safeguards. However, the design of the drum provided no vent path mechanism to relieve potential pressure buildup.

***(iii) Corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments;***

The following corrective actions have been completed:

- Expectations for sorting materials were reinforced, and Uranium Recycling and Recovery Services (URRS) personnel are now providing control and oversight of materials placed into the drums.
- Drum temperatures are routinely monitored during the first hour after creation to detect if an exothermic reaction is occurring. A method has been developed and implemented to provide a vent path for drums to prevent pressurization.
- Industry operating experience documents related to drum fires were reviewed to inform our investigation and permanent corrective actions.
- The requirement to acid wash Conversion area bag filters from the S-1030 scrubber was eliminated. The process is nearly neutral and the safety basis does not require it based on the Uranium 235 mass captured by the filters.
- The Conversion bag filter ringer was modified to remove additional liquid in bag filters.

The following corrective actions remain to be completed:

- Perform an assessment of the improved sorting of materials to ensure established controls are effective in preventing drum pressurization.
- Implement use of two wet combustible drums to improve segregation of materials, i.e., one drum for acidic materials and one for basic materials.
- Evaluate potential improvements for drum pressure relief, e.g., new lids, drum vent filters, etc.

Commitments will be tracked to completion by management within the Westinghouse corrective action system.

*(iv) For licensees subject to Subpart H of this part, whether the event was identified and evaluated in the Integrated Safety Analysis.*

The CFFF is subject to Subpart H. The URRS area Integrated Safety Analysis identified and evaluated fire events.