



Westinghouse Electric Company LLC
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U. S. Nuclear Regulatory Commission
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October 27, 2011

SUBJECT: WESTINGHOUSE REPORTED EVENT # 47330 30 DAY FOLLOW UP REPORT

The following information is being provided by Westinghouse Electric Company LLC (Westinghouse) in accordance with 10CFR70.50(c)(2). A summary of the initial notification report, Event Report #47330, pertaining to the Columbia Fuel Fabrication Facility (CFFF) is attached and provides the applicable information required by 10CFR70.50(c)(1). The attachment also documents the additional information required in accordance with 10CFR70.50(c)(2).

Please know that Westinghouse remains deeply committed to continuous compliance with all governing regulations and license commitments. If you have any questions regarding this report, please contact me at (803) 647-2045.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gerard F. Couture'.

Gerard F. Couture, Manager
Licensing & Regulatory Programs
Westinghouse Columbia Fuel Fabrication Facility
Docket No. 70-1151, License No. SNM-1107

Attachment

cc: U. S. Nuclear Regulatory Commission, Region II
Attn. Ms. Mary Thomas
Atlanta Federal Center
245 Peachtree Center Ave., NE, Suite 1200
Atlanta, Georgia 30303-1257

U. S. Nuclear Regulatory Commission
Attn: Christopher Ryder, Project Manager
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One White Flint North
11555 Rockville Pike
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NRC Notification Summary of October 7, 2011
Event Report # 47330 at 1615 EDT

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.

Time and Date of Event: October 7, 2011, 16:15

It was reported to EH&S on Oct 7, 2011 that the measurements on the 1.5 gallon pails used in the facility were found to be non-compliant with the governing Criticality Safety Evaluation, CSE-16-K Rev. 3, *Common Containers*. This CSE authorized the deployment of 1.5-gallon steel pails for miscellaneous use with SNM-bearing liquids. The safety basis for the design of these pails is addressed in credible scenario 4.1.4 in CSE-16-K. The primary contingency is passive engineered control FLOOR-115 which specifies the following dimensional requirements for the pails:

Top ID	8.059 to 8.559"
Bottom ID	≤ 6.309 "
Inner Height	≤ 8.217 "
Wall Thickness	No Limit

The controls, PROCUR-901 and -902, cover the ordering and inspection upon receipt for the pails, to meet the criteria of FLOOR-115*. In June 2011 all of the pails were inspected by the Product Assurance (PA) department and judged to meet the dimensional requirements. The pails were then deployed to the floor and have been in use since then.

On October 7, 2011, NCS Engineering was informed that the PA department had determined that their measurement methodology for the pails was incorrect. As a result, the actual top ID of the pail exceeded the IROFS limit by a margin of ~ 0.25 ". This results in the facility being in a state that is different from that analyzed in the Integrated Safety Analysis (i.e. the governing CSE). All other dimensions specified by the control FLOOR-115 are met, but the diameter aberration appears to affect all pails. As a result, the passive engineered IROFS FLOOR-115 is judged to have failed, eliminating the primary contingency.

Calculation results modeling an infinite array of in tolerance pails containing oil-moderated UO_2 with 6" S/S spacing for this condition results in a 95/95 k_{EFF} of 0.8569. Preliminary calculation results with the increased diameter case results in a 95/95 k_{EFF} of 0.8610. Therefore, with the proper spacing maintained (12" per control FLOOR-116), with no stacking (control FLOOR-104), an infinite array of the as-built pails would not exceed the SNM-1107 license 0.95 criterion.

This event is being reported pursuant to the reporting requirements of 10CFR70 Appendix A (b)(1) within 24 hours of discovery due to the facility being in a state that is different from that analyzed in the Integrated Safety Analysis (i.e. the governing CSE). The performance requirements for this accident sequence require the Overall Likelihood Index (OLI) be Highly Unlikely. With this failure the sequence is Unlikely.

Immediate Corrective Actions:

- Upon identification of the issue operations staff removed the pails from the main process areas and segregated to prevent use.
- The event is being entered into the Corrective Action Process and a casual analysis initiated.

The Columbia Fuel Fabrication Facility is subject to Subpart H of 10 CFR 70 and this issue is addressed in the corresponding Integrated Safety Analysis

* *Editorial within initial report corrected.*

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

(2) Written report. Each licensee that makes a report required by paragraph (a) or (b) of this section, or by § 70.74 and Appendix A of this part, if applicable, shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the report contains all the necessary information, and the appropriate distribution is made. These written reports must be sent to the NRC's Document Control Desk, using an appropriate method listed in § 70.5(a), with a copy to the appropriate NRC regional office listed in appendix D to part 20 of this chapter. The reports must include the following:

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

This information has been provided above.

(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;

Following recognition of the problem Westinghouse immediately responded in a conservative manner to remove the suspect pails (a consumable item) from service. The event was reported to the NRC operations center and entered into the Corrective Action Program as issue # 11-280-C019. Upon the review of the "as found" data and subsequent recalculations performed by the Nuclear Criticality Safety (NCS) staff the initial report was overly conservative and the accident sequence is better characterized as having remained Highly Unlikely. All authorized operations remained well within license conditions with the revised calculations taken into account.

To ensure appropriate extent of cause and extent of condition are addressed, Westinghouse is performing a Root Cause Analysis (RCA) of the event in accordance with our Corrective Action Process. As stated in the initial event report, this issue was identified by our staff using good questioning attitude human performance tools during the performance of a required inspection. The RCA underway will address this issue at greater depth and a summary of the results will be transmitted to the NRC in a subsequent letter. Westinghouse's RCA is a robust process that typically takes much longer than 30 days, thus it is not complete at this time.

(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;

Corrective Actions:

The immediate actions to segregate and remove the suspect pails from service on 10/7/11 restored compliance. In addition to the immediate corrective actions identified in the event report:

- Plant management utilized the Safety Event Procedure, RA-134 to address the issue and recovery action necessary to restart the operation.
- CN-CRI-11-4 was revised with the correct dimensions and issued 10/10/11.
- Criticality Safety Evaluation CSE-16-K (common carriers) was revised with the correct dimensions and issued 10/10/11.
- Criticality Safety Evaluation CSE-16-F (floor storage) was revised with the correct dimensions and issued 10/10/11.
- The revised CSEs were implemented 10/10/11.
- Implementation included new guidance for performance of the measurements issued in the revised QCI-310905.

- The above actions established compliance with the new ISA (CSE) on 10/10/11. The new CSE re-authorized the use of the properly inspected and measured 1.5 gallon pails.

Longer term Additional Actions:

- After completion of the RCA, it is expected that additional actions to prevent recurrence, address extent of cause and extent of condition may be identified. If so they will be summarized and provided to the NRC in subsequent correspondence.
- Any such actions will be tracked to completion by management in accordance with the corrective action process.

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

As noted in the event report the Columbia Fuel Fabrication Facility is subject to Subpart H and the report dealt with the discovery of the facility being in a state that is different from that analyzed in the Integrated Safety Analysis (i.e. the governing CSE).