



Westinghouse Electric Company LLC
Columbia Fuel Site
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USA

Director, Office of Nuclear Material Safety and Safeguards and
Environmental Review
U. S. Nuclear Regulatory Commission
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September 12, 2018

SUBJECT: WESTINGHOUSE REPORTED EVENT # EN53505 60 DAY FOLLOW-UP REPORT

The following information is being provided by Westinghouse Electric Company LLC (Westinghouse) in accordance with 10CFR70 Appendix A(c) and 10CFR70.74. A copy of the initial notification report, Event Report #EN53505, 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 deeply committed to continuous compliance with all governing regulations and license commitments.

If you have any questions regarding this information, please contact me at (803) 647-3338.

Sincerely,

A handwritten signature in cursive script that reads "Nancy Blair Parr".

Nancy Blair Parr, Manager
Licensing
Westinghouse Columbia Fuel Fabrication Facility
Docket 70-1151 License SNM -1107

Enclosure 1: Event Report #EN53505 July 12, 2018.
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 T-4A60

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

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201
Attn: Mr. Ken Taylor

ENCLOSURE 1

Event Report #EN53505 Dated 12 July, 2018.

Caller Identification and Facility Information

Gerard Couture, Licensing Engineer

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.
Call-Back Number (803) 647-2119.

24 Hour Event Notification based on 10CFR70 Appendix A (c).

Any event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made, shall be reported to the NRC Operations Center concurrent to the news release or other notification.

For this event notification was made to the South Carolina (SC) Department of Health and Environmental Control (DHEC) per R 61-68 E.4.b which requires 24 hour notification upon discovery of an "unauthorized discharge into waters of the State which may cause or contribute to an excursion of a water quality standard." While it was not conclusively determined that the leak migrated to the groundwater, which is a water of the state, Columbia made the notification based on discussions with DHEC. SC DHEC was notified by phone on July 12th at 1530.

Description of the Event

An equipment issue was noted on July 10th, 2018 during ongoing maintenance activities to repair the liner associated with Hydrofluoric Acid Spiking Station #2 in the conversion process area of the Columbia plant. While the polypropylene liner was removed for repair work, a crack was noticed in the epoxy coating covering the diked area at the spiking station. Upon further investigation, a hole approximately 3 inches in diameter was found penetrating the concrete floor and into the soil beneath. Measurements taken reflect the depth of the hole as approximately 6 feet into the soil. Several samples of soil were obtained from the immediate area the morning of July 11th, 2018. These samples were analyzed at the Columbia Plant Laboratory with results obtained the morning of July 12th. The highest measurements reported from the samples are 4,000 ppm U and 24 ppm Fluoride, with a pH of 2.84.

The Hydrofluoric Acid Spiking Station #2 remains out of service. This is a localized issue underneath the floor of the existing structure and well within the boundaries of the site, thus there is no impact to public health and safety or facility workers.

Immediate Corrective Actions

The spiking station remains removed from service while the event is being fully evaluated. Maintenance has placed a metal plate over the hole as an interim measure to protect the environment from any potential leaks from associated piping. Monitoring of closest downgradient well will be performed within the next seven days. Appropriate repairs or modifications will be completed to the concrete pad and protective layers before the equipment is returned to service. Issue Report 2018-12123 was entered into the Corrective Action Program

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. Upon removal of the liner, maintenance noticed a small hole about the size of a quarter in the epoxy coating over the concrete. Prodding to investigate further resulted in an approximate 3 inch hole in the concrete surface. Maintenance was able to insert a wire down to approximately 30 inches into the building backfill before meeting resistance. They also noticed that the concrete was degraded around the immediate area. It should be noted that the building sits approximately 4 feet above the natural ground level.

Upon this discovery, the other spiking station liner was leak tested and its integrity was verified. Compensatory measures are in place to closely monitor operation of this system through hourly inspections of the Spiking Station when in use; barricading the area with instructions to place walking pads down if walking on the liner is needed; and changing the frequency of the containment barrier leak test from annual to quarterly.

(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 probable cause of the event is a gap existed in the CFFF standards related to design, configuration management, operations and maintenance when the spiking station dike and liner were modified in 2002.

Specifically, a design modification was made in 2002 to line the diked area with polypropylene material to protect the concrete floor. The site did not recognize that this design change would allow process fluid to get trapped between the bottom of the liner and the epoxy coated concrete surface. Thus, the modification introduced an unrecognized failure mode in which the concrete could become degraded and any resulting defect in the concrete underneath the liner would not be visible. The contributing factors are degradation of the polypropylene liner from operations and maintenance activities, and system leaks into the diked area over 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;

Westinghouse has executed a plan that involved temporary removal of the spiking station, controlled removal of concrete and soil within the diked area, and implementation of a phased approach sampling protocol as approved by the South Carolina Department of Health and Environmental Control. This effort is in progress with the goal to characterize the extent of contamination present and determine the appropriate remedial actions. In addition, compensatory measures have been implemented for the other spiking station when in use.

The following actions are planned to prevent occurrence of similar or identical events.

- Develop and implement an improved design for the spiking station systems and diked areas including a Design Review to prevent process fluid from impacting the environment.
- Develop and implement an improved maintenance procedure for the spiking station system and diked area, including regular inspections to guard against undetected deterioration of the concrete floor.
- Conduct a formal Design Review of the new design and maintenance procedure. The Design Review shall utilize a Design Failure Mode and Effect Analysis (DFMEA) to identify and mitigate risks.

- Perform a condition assessment of the other spiking station system and diked area, take appropriate remedial actions and implement the improved design and maintenance procedure.
- Complete a comprehensive evaluation of the environmental protection program including a review of environmental protection design requirements. Ensure compensatory measures are put in place where needed and a long term improvement plan is developed and implemented per CAP IR-2018-14241.
- Assess similar design configurations where there is a liner/environmental barrier relied on for secondary containment to ensure proper preventive and post maintenance procedures are in place.
- Implement quarterly monitoring of the closest downgradient well for ground contamination.

Management shall track these commitments to completion in the corrective action program.

(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. Spill events related to the spiking station are analyzed in the Integrated Safety Analysis and Summary. An evaluation of this event was performed, and the Performance Requirements of 10CFR70.61 remained satisfied.