[redacted]

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 28, 2016

MEMORANDUM TO: Craig Erlanger, Director
Division of Fuel Cycle Safety, Safeguards,
and Environmental Review
Office of Nuclear Material Safety
and Safeguards

Mark Lesser, Director
Division of Fuel Facility Inspection
Region II

FROM: Margie Kotzalas, Chief **/RA/**
Programmatic Oversight
and Regional Support Branch
Division of Fuel Cycle Safety, Safeguards,
and Environmental Review
Office of Nuclear Material Safety
and Safeguards

SUBJECT: LESSONS-LEARNED FROM THE WESTINGHOUSE URANIUM ACCUMULATION IN SCRUBBER AND VENTILATION EVENT

The purpose of this memorandum is to issue a charter to evaluate lessons learned from recent experiences with significant uranium accumulations in scrubber and ventilation systems at the Westinghouse Columbia Fuel Fabrication Facility (WCFFF).

On July 14, 2016, Westinghouse Electric Corporation (the licensee) notified the U.S. Nuclear Regulatory Commission (NRC) that, during an annual inspection to identify and remove solids in the transition section of a scrubber, it identified significant amounts of uranium (U) potentially exceeding the mass limit of 29 kg in the inlet transition. The licensee confirmed, not only significant mass, but a significant concentration of uranium ranging from 34 to 55 weight percent. On August 1, 2016, the NRC dispatched an Augmented Inspection Team (AIT) to the WCFFF. Further investigation revealed 184 kg of material in the scrubber body and 71 kg of material in the packing. The material was composed of various compounds including those that contain uranium.

CONTACT: April Smith, NMSS/FCSE
301-415-6547

[redacted]

Although the accumulation of material did not result in a criticality, this event still represents a criticality safety concern. On August 11, 2016, the agency issued a confirmatory action letter (CAL) to the licensee. The CAL requires the licensee to complete a root cause analysis, retain a nuclear criticality safety expert, assess the extent of condition, and evaluate safety culture, decision making, adequacy of controls, and procedures. Furthermore, the CAL requires the licensee to request restart approval from the Regional Administrator. The AIT exited the inspection with multiple unresolved items and findings the staff expect to disposition during the enforcement process. To share relevant details of the event and inform licensees about the potential for uranium accumulation, NRC staff issued Information Notice IN-16-13, "Uranium Accumulation in Fuel Cycle Facility Ventilation and Scrubber Systems" (ML16252A171).

These agency actions exemplify the effectiveness and efficiency of the agency's regulatory process after the event. However, there may be opportunities to improve the regulatory process prior to, during, and after the investigation of an event.

The enclosed charter establishes the evaluation scope, potential topics, roles and responsibilities, and deliverables for lessons learned review. The Programmatic Oversight and Regional Support Branch will coordinate this effort and provide a report to the Division of Fuel Facility Inspection and Division of Fuel Cycle Safety, Safeguards, and Environmental Review by November 29, 2016. While performing the evaluation, the staff will seek and incorporate input from all appropriate stakeholders.

Evaluating the lessons learned from this event is expected to identify appropriate process improvements that could improve regulatory effectiveness and efficiency while meeting the agency's mission. After the evaluation, the results will be used to develop recommendations for the resources to address opportunities for improvement.

Enclosure:
Westinghouse
Lessons Learned Charter

Although the accumulation of material did not result in a criticality, this event still represents a criticality safety concern. On August 11, 2016, the agency issued a confirmatory action letter (CAL) to the licensee. The CAL requires the licensee to complete a root cause analysis, retain a nuclear criticality safety expert, assess the extent of condition, and evaluate safety culture, decision making, adequacy of controls, and procedures. Furthermore, the CAL requires the licensee to request restart approval from the Regional Administrator. The AIT exited the inspection with multiple unresolved items and findings the staff expect to disposition during the enforcement process. To share relevant details of the event and inform licensees about the potential for uranium accumulation, NRC staff issued Information Notice IN-16-13, "Uranium Accumulation in Fuel Cycle Facility Ventilation and Scrubber Systems" (ML16252A171).

These agency actions exemplify the effectiveness and efficiency of the agency's regulatory process after the event. However, there may be opportunities to improve the regulatory process prior to, during, and after the investigation of an event.

The enclosed charter establishes the evaluation scope, potential topics, roles and responsibilities, and deliverables for the lessons learned review. The Programmatic Oversight and Regional Support Branch will coordinate this effort and provide a report to the Division of Fuel Facility Inspection and Division of Fuel Cycle Safety, Safeguards, and Environmental Review by November 29, 2016. While performing the evaluation, the staff will seek and incorporate input from all appropriate stakeholders.

Evaluating the lessons learned from this event is expected to identify appropriate process improvements that could improve regulatory effectiveness and efficiency while meeting the agency's mission. After the evaluation, the results will be used to develop recommendations for the resources to address opportunities for improvement.

Enclosure:
Westinghouse
Lessons Learned Charter

ADAMS Accession No.: ML16285A018

OFFICE	NMSS/FCSE	NMSS/FCSE
NAME	ASmith	MKotzalas
DATE	10/06/2016	10/28/2016

OFFICIAL RECORD COPY

[redacted]

CHARTER FOR THE REVIEW OF LESSONS LEARNED FROM THE WESTINGHOUSE URANIUM ACCUMULATION IN SCRUBBER AND VENTILATION SYSTEMS EVENT

Purpose

The purpose of this charter is to define the evaluation scope, roles and responsibilities, a minimum set of evaluation areas, and the deliverable for the review and documentation of lessons learned from uranium accumulation in scrubber and ventilation systems at the Westinghouse Columbia Fuel Fabrication Facility.

Roles and Responsibilities

Margie Kotzalas, Chief of the Programmatic Oversight and Regional Support Branch (PORSB), will have the overall responsibility of overseeing the evaluation. The Branch Chief shall:

- Directly assign or coordinate with supervisors to assign staff to perform the evaluation for each area.

- Establish interim milestones.

- Ensure coordination to protect against unnecessary overlap between individual evaluation areas.

- Keep the Divisions of Fuel Facility Inspection (DFFI) and Fuel Cycle Safety, Safeguards, and Environmental Review (FCSE) informed of progress, including potential changes in the evaluation scope.

Dennis Damon and Donnie Harrison, FCSE Senior Level Advisors for Risk Assessment, shall:

- Coordinate with the PORSB Chief to gather the appropriate information to perform the evaluations as described below in “Minimum Set of Areas to Evaluate.”

- Develop a lessons learned report based on the evaluation.

- For each evaluation area, incorporate stakeholder input; identify findings; and outline recommended actions to address the lessons learned. Gathering stakeholder input will include soliciting feedback on a draft of the lessons learned report.

- Keep the PORSB Chief informed of progress.

- Present a lessons learned report to DFFI and FCSE management by November 29, 2016. The branch chiefs of FCSE, Fuel Manufacturing Branch (FMB) and DFFI, Project Branch 1, Project Branch 2, and Safety Branch will provide concurrence on the report.

April Smith, Lessons Learned Project Manager, shall support the PORSB Chief and FCSE Senior Level Advisors in gathering information, planning, drafting, and presenting the report.

[redacted]

Enclosure

[redacted]

Minimum Set of Areas to Evaluate

The areas described below represent the minimum scope of topics that shall be included in the evaluation. During the course of the evaluation, it may be necessary to consider additional areas in order to render a more complete set of findings and recommended actions. This charter does not prohibit expansion of evaluation areas as long as the new areas are relevant to improving agency processes related to the event in question.

1. **License review process**
   Related to the event, evaluate the effectiveness of the license review process. Include a review of the processes and procedures used as well as resources required to adequately evaluate licensee assumptions, management measures programs, and changes made to facilities as reflected in documents related to licensing such as Integrated Safety Analysis (ISA) summaries, amendment requests, and facility change reports.

2. **Inspection program**
   Related to the event, evaluate the effectiveness of the fuel facility inspection program. Include a review of the processes and procedures used as well as resources required to adequately assess areas with varying levels of risk (low to high), the licensee's safety culture, corrective action program, safety analysis assumptions, and changes made to facilities as reflected in facility documentation such as ISA evaluations, ISA summaries, facility change reports, and temporary and permanent procedure modifications.

3. **Operating experience program**
   Related to the event, evaluate the efficiency and effectiveness of the operating experience program. Include a review of the processes, procedures, and resources used to capture, analyze, and report operating experience as mandated by policy or Congress.

4. **Roles and Responsibilities of DFFI and FCSE**
   Evaluate the efficiency and effectiveness of the implementation of DFFI and FCSE roles and responsibilities. Include a comparison of the respective roles and responsibilities defined in policy (e.g. management directives, office or regional procedures, and instructions) to those in practice. Also include a review of the mechanisms available to facilitate communication among appropriate stakeholders.

5. **Knowledge management**
   Evaluate the efficiency and effectiveness of tools available to facilitate knowledge management during an event. Include a review of the processes and resources used to disseminate knowledge, develop staff, support succession planning, and document opportunities for improvement.

Deliverable

The deliverable will be a report that communicates the following information:

- A summary of the evaluation areas, including stakeholder input sought for each area;
- For each evaluation area, a summary of findings, and
- Recommendations to address opportunities for improvement.

[redacted]