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Your ref:

Our ref: LTR-RAC-22-40

July 22, 2022

SUBJECT: 60-Day Report Regarding the May 23, 2022 Incident Reported under 10 CFR 70 Appendix A 24-Hr Report, Columbia Fuel Fabrication Facility (License No. SNM-1107, Docket No. 70-1151)

REFERENCE: NRC Event Number 55911

On May 24, 2022, the Columbia Fuel Fabrication Facility (CFFF) reported to NRC that two Items Relied on for Safety (IROFS) associated with the Waterglass Wastewater Treatment system had failed. This follow up report is being submitted to comply with 10 CFR 70.74(b).

Attached is a copy of the NRC Form 361A provided to the NRC Operations Center at the time of notification submitted to comply with 70.50(c)(2)(i) and the 60-day follow-up report, submitted to comply with 10 CFR 70.50 (c)(2)(ii-iv).

Please contact me at (803) 647-1957 should you have questions or need any additional information.

*Patrick Donnelly*  
Patrick Donnelly (Jul 22, 2022 14:40 EDT)

Patrick Donnelly  
Regulatory Affairs Manager  
Westinghouse Columbia Fuel Fabrication Facility  
Docket 70-1151 License SNM-1107

Attachment 1: NRC Form 361A associated with EN# 55911

Attachment 2: Westinghouse 60-day Report for EN# 55911


cc:

Mr. Thomas Vukovinsky

Ms. Jennifer Tobin

**Attachment 1**

**NRC Form 361A associated with EN# 55911**

<b>NRC FORM 361A</b> (09-2020)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b> <b>OPERATIONS CENTER</b>	<b>APPROVED BY OMB: NO. 3150-0238</b>  <small>Estimated burden per response to comply with this voluntary collection request: 30 minutes. The information provided will be used for evaluation of licensee event description, facility status and for input to the public website. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to <a href="mailto:Infocollects.Resource@nrc.gov">Infocollects.Resource@nrc.gov</a>, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0238), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: <a href="mailto:oir_submission@omb.eop.gov">oir_submission@omb.eop.gov</a>. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.</small>	<b>EXPIRES: 10/31/2022</b>  <b>EN # 55911</b>
 <b>FUEL CYCLE AND MATERIALS</b> <b>EVENT NOTIFICATION</b> <b>WORKSHEET</b>			

NRC OPERATIONS TELEPHONE NUMBERS: PRIMARY - 301-816-5100 or 800-532-3469#, BACKUPS - [1st] 301-951-0550 or 800-449-3694#, [2nd] 301-415-0550 and [3rd] 301-415-0553. #Licensees who maintain their own ETS are provided these telephone numbers. FAX - 301-816-5151, EMAIL - hoo.hoc@nrc.gov

<b>Notification Time</b> 0902	<b>Facility or Organization</b> Westinghouse	<b>License #</b> SNM-1107	<b>Name of Caller/Title</b> Patrick Donnelly, Reg Aff	<b>Call Back #</b> (803) 766-8157
<b>Event Time &amp; Zone</b> 0925 ET	<b>Event Date</b> 05/23/2022	<b>Location of Event (Include County and State)</b> Hopkins, SC - Richland Co.		<b>Portion of Plant Affected (If applicable)</b> URRS

EVENT CLASSIFICATIONS	EVENT TYPES	INCIDENT REPORTS (30.50, 40.60, 70.50)		
<input type="checkbox"/> GENERAL EMERGENCY*	<input checked="" type="checkbox"/> FUEL CYCLE	<input type="checkbox"/> 20.2201	LOSS / THEFT	<input type="checkbox"/> (a) PROTECTIVE ACTION PREVENTED
<input type="checkbox"/> SITE AREA EMERGENCY	<input type="checkbox"/> MEDICAL / ACADEMIC	<input type="checkbox"/> 20.2202	ACTUAL / THREATENED OVEREXPOSURE	<input type="checkbox"/> (b)(1) UNPLANNED CONTAMINATION
<input type="checkbox"/> ALERT	<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> 20.2202	ACTUAL / THREATENED RELEASE	<input type="checkbox"/> (b)(2) SAFETY EQUIPMENT FAILURE
<input type="checkbox"/> NOTIFICATION OF UNUSUAL EVENT*	<input type="checkbox"/> WASTE MANAGEMENT	<input type="checkbox"/> 21.21	DEFECT / NONCOMPLIANCE	<input type="checkbox"/> (b)(3) MEDICAL TREATMENT WITH CONTAMINATION
<input checked="" type="checkbox"/> INCIDENT REPORT	<input type="checkbox"/> INDUSTRIAL/ COMMERCIAL	<input type="checkbox"/> 26.791	FITNESS FOR DUTY	<input type="checkbox"/> (b)(4) FIRE / EXPLOSION
<input type="checkbox"/> TRANSPORTATION EVENT	<input type="checkbox"/> FOREIGN EVENT	<input type="checkbox"/> 35.3045	MEDICAL EVENT	<input type="checkbox"/> 70.52 CRITICALITY / SNM LOST
<input type="checkbox"/> INFORMATION ONLY	<input type="checkbox"/> OTHER (Specify)	<input type="checkbox"/> 36.83	IRRADIATOR EVENT	<input type="checkbox"/> 70.52 ACTUAL / ATTEMPTED THEFT
<input type="checkbox"/> OTHER (Specify)		<input type="checkbox"/> 39.77	RUPTURED WELL LOGGING SOURCE	<input type="checkbox"/> APPENDIX A, 1-Hour
		<input type="checkbox"/> 39.77	IRRETRIEVABLE WELL LOGGING SOURCE	<input checked="" type="checkbox"/> APPENDIX A, 24-Hour
		<input type="checkbox"/> 40.26	TAILINGS / WASTE DAM FAILURE	<input type="checkbox"/> CONCURRENT REPORT

\*ONLY UNDER OLD 1981 ORDER

NOTIFICATIONS	YES	NO	WILL BE	QUESTION	YES	NO
NRC REGION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Anything Unusual or not understood?	<input type="checkbox"/> Yes (Explain below)	<input checked="" type="checkbox"/> No
STATE(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Did all systems function as required?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No (Explain below)
LOCAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Additional Information on page 2?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
OTHER GOVERNMENT AGENCIES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
PRESS RELEASE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

**Event Description** (Include: Systems affected, actuations and their initiating signals, causes, effect of event on plant, actions taken or planned, etc.) (Continue on Page 2)

Administrative IROFS WT-165 and WT-166 require independent operators to sample and verify the V-1170 uranium concentration is below an administrative limit prior to discharge to the V-1160 tank. These IROFS were correctly performed on May 18, 2022 for both the V-1170A and V-1170B tanks. In between the 18th and the 23rd, the warm caustic filter was water washed with the process solution sent to the V-1170 tanks.

At 0422 on May 23, 2022, the contents of V-1170A and V-1170B tanks were pumped to the T-1160B tank without the tank uranium concentration being updated following the warm caustic filter wash.

At 0925 on May 23, 2022, an evaluation into the reportability of the event was initiated when a Uranium Recovery and Recycling Services (URRS) team manager contacted Criticality Engineering to report the transfer without the test results required by procedure. After reviewing updated tank test results, performing calculations to determine risk, and discussing actions taken by the operators, IROFS WT-165 and WT-166 were considered failed and IROFS WT-171, WT-172, WT-175 and WT-176 were considered degraded.

NRC FORM 361A  
(09-2020)

**FUEL CYCLE AND MATERIALS  
EVENT NOTIFICATION WORKSHEET (Continued)**

U.S. NUCLEAR REGULATORY COMMISSION  
OPERATIONS CENTER

EN # 55911

**RADIOLOGICAL / CHEMICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS**

Isotope	Activity	Physical Form	Chemical Form		Stack	Liquid Effluent	Other (Specify)
				Monitor Reading			
				Alarm Setpoint			

- ONGOING RELEASE
- TERMINATED RELEASE
- OFFSITE RELEASE
- ONSITE AREAS EVACUATED
- OFFSITE PROTECTIVE ACTION RECOMMENDED

**PERSONNEL EXPOSURE / CONTAMINATION DATA**

Number of Personnel Exposed	Number of Personnel Contaminated
Maximum External Dose	Maximum External Level
Maximum Internal Dose	Maximum Internal Level
Critical Organ (if known)	Critical Organ (if known)

**Number and Types of controls necessary under normal operating conditions**  
One active engineered control and six administrative controls.

**Number and Types of controls which functioned properly under upset conditions**  
The active engineered control (WCD-129) functioned properly.

**Number and Types of controls necessary to restore a safe situation**  
The test results show the plant was in a safe condition and no limits were exceeded.

**Safety Significance of Events**  
There was no safety impact as a result of the event. Tests performed on the tank contents following the event showed the tank contents and levels met IROFS requirements at the time of the transfer.

**Safety Equipment Status**  
No equipment was impacted by the event and the plant is in a safe condition.

**Status of Corrective Actions**  
Warm caustic and cylinder recertification, which have similar IROFS for controlling inputs into 1160B tank, are all on hold pending review of extent of condition and corrective actions.

**Event Description (Continued)** (Include: Systems affected, actuations and their initiating signals, causes, effect of event on plant, actions taken or planned, etc.)  
Per CSE-15C-S1-G3, the remaining safety margin was 1.000E-2, which was below the required 1.000E-4.

The result is reportable per 10 CFR Part 70 Appendix A (b)(2), "Loss or degradation of items relied on for safety that results in failure to meet the performance requirements of 10 CFR 70.61."

Following the event, the contents of V-1170A and T-1160B were tested and historical tank level indication data was reviewed with results well within the IROFS limits. There was no safety impact as a result of the failed IROFS.

**Attachment 2**

**Westinghouse 60-day Report for EN# 55911**

## **Westinghouse 60-day report associated with Event No. 55911**

### Probable Cause of Event

A sample was taken, analyzed and recorded on form CF-83-213 and verified by an operator to be under the maximum uranium concentration allowed for transfer of the V-1170 bank of favorable geometry tanks per IROFS WT-165. In addition, a second operator had confirmed that the test results were below the required uranium concentration and recorded on CF-83-213 form per IROFS WT-166. However, a part failure in the transfer line from the V-1170 tank to the non-favorable geometry T-1160B tank had delayed the transfer of the V-1170 tank contents by several days. During that delay, a filter had been water-washed adding to the contents of the V-1170 tanks and invalidating the samples. However, the procedure and associated form did not account for this scenario and the form was not annotated with a note to re-sample. When the transfer line was repaired, it appeared from the CF-83-213 form that all the IROFS had been completed and the operators initiated the transfer.

### 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 associated procedure COP-835024 has been revised to specify that the V-1170 tanks shall be isolated and the valves locked when the tanks are sampled to preclude the addition of uranium into the tank and invalidate the sample results until the time of transfer.

Further, ISA-15, "Wastewater Treatment System" and associated calculation note CN-SB-09-06 have been updated to justify multiple failures of WT-165, WT-166, WT-171, WT-172, WT-175 and WT-176 before the incident would be considered reportable. The controls on system inputs limit the uranium content such that more than 3 consecutive failures of the IROFS would have to occur before the uranium content in T-1160B would approach the conservatively calculated limits, even when considering maximum possible uranium concentrations.

### Integrated Safety Analysis Evaluation

This plant condition was considered in ISA Summary 15, "Wasterwater Treatment System," Revision 16. Specifically, accident sequence CSE-15C-S1-G3.