**RECOMMENDATIONS FOR INSPECTION:**
**CHANGES MADE AT THE WESTINGHOUSE**
**COLUMBIA FUEL FABRICATION FACILITY DURING 2015**

BACKGROUND

By letter dated January 25, 2016, the Westinghouse Electric Company, LLC (Westinghouse) submitted the annual report of the changes that had been made to the Columbia Fuel Fabrication Facility (CFFF) during the calendar year 2015. The staff at the U.S. Nuclear Regulatory Commission (NRC) Headquarters reviewed each change documented in the facility change report (Ref. 1). By the count of the NRC staff, the submittal documents 422 records of changes that were made without prior NRC approval in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 70.72. The NRC staff agrees with Westinghouse that all such changes are in accordance with 10 CFR 70.72. Therefore, no prior NRC approval was needed for any of the changes.

Though all of the changes did not require prior NRC approval, the Headquarters staff identified changes that Region II staff may want to review during an inspection at the CFFF. The recommendations do not imply a safety concern; instead, the recommendations are intended to provide additional assurance, to that provided by the established procedures of Westinghouse, that the changes were implemented correctly. The configuration change form (CCF) numbers pertain to the submitted facility change report (Ref. 1). Text of the CCFs is taken from the facility change report (Ref. 1).

CHANGES

CCF 12358. Roll IFBA Vacuum Oven3 to the PCN Network. This is an unspecified security requirement in the public submittal.

CCF 12456. Modify existing Drexelbrook level sensor and wire directly to a safety relay. Modify existing Warrick high, high level sensor and wire sensor contacts directly to a second safety relay. A high level on either sensor will close the two in series DI water shutoff valves. Valves shall be configured for fail closed on loss of power, air, or high level from either sensor. Independent visual and audible alarms shall indicate which level sensor has tripped. Safety Circuit will not clear until a safe level is obtained and operations manually reset the SSC trip. Interposing relays from each sensor will activate alarms in the BPCS. Note: this change was made as a commitment to the second Nuclear Criticality Safety improvement Program (NCISP-II)

CCF 14196. Line 2 SIS Upgrades. Relocate Safety Significant Controls for ADU Line 2. This will activate high level at precipitator V-x05 ADUPCP-901 and UN Tank V-x06 ADUHFS-901 on the safety plc. It will add two additional IROFS like Line 5 to the hydrolysis column ADUHYD-106 and ADUHYD-12 and ADUVAP-147. Note: In the ISA, ADUPCP-901 is a precipitation column high level interlock. ADUHYD-12 is a failure of secondary recirculation flow interlock to shut off $UF_6$ gas upon low flow. ADUVAP-147 is a failure of the hydrolysis column high-high level interlock.

CCF 14441, 14463, 14466, 14529, and 14530. Transfer the low nitrogen pressure interlock wiring from the common switch to the new individual switch for this furnace. All sintering furnaces in ADU and Erbia have a low nitrogen pressure interlock (PELSINT-903) from a pressure switch on the main nitrogen header that is located on the thermal stability furnace mezzanine. A new header with individual pressure switches has been installed under CCF 09630. This will enable each furnace to have its own pressure switch for this interlock. PELSINT-903 will be affected. Note: The ISA states that PELSINT-903, 904, & 905 were removed as IROFS per LTR-EHS-12-72; this change was made several years ago.

CCF 14586. Replace Line 1 High and high-high condensate level probes for both vaporizers. ADUVAP-906 and ADUVAP-907 will be affected by this change. Change ADUPCP-901 interlock to latching. Modify ADUHYD-913 (Maintenance Mode) to remove 30 requirement for steam valves being disabled; the requirement for pressure less than 2 PSI will remain. Steam valves must be disabled prior to enabling maintenance mode. Note: In the ISA, ADUVAP-906 is hi level probe fails. ADUVAP-907 is high-high level probe fails. ADUHYD-913 maintenance mode control including operator verification fails.

CCF 15015. This is an unspecified security requirement in the public submittal.

CCF 15219, 15401, 15401, and 15534. Remove the isolation device from spring return valves manufactured by J Flow Controls that affect SSC's. SSC's affected are ADUCAL-902, ADUCAL-903, ADUSCR-904, ADUSCRA-102, WT-130, and WT-131. A total of 9 valves are affected - 1 valve each on the lines 2 and 5 calciners, 2 valves each on the lines 2 and 5 scrubbers, the DI water scrap cage gamma monitor valve, and the DI water and nitric acid effluent monitor valves. Note: ADUCAL-902 and ADUCAL-903 are failures of control. Calciner pressure shall be monitored. If calciner pressure is less than -0.5 inch of water, hydrogen flow shall be terminated and a nitrogen purge of the calciner tube shall be started. Note: In the ISA, ADUSCR-904 is not listed. ADUSCRA-102 is listed in the ISA as being deleted.

CCF 15244 and 15065. Install Ventilation Vacuum Breaks into Conversion Lines 2, 3, and 4's Vaporizers. The change is made to prevent the spread of contamination on the $UF_6$ cylinder and also provides ventilation in the top of the vent tent. Note: Though IROFS at not stated in the Facility Change Report, the change involves a potential for contamination.

CCF 15292. Re-Power Line 4 Conductivity Meter (CIT-S-401-1) used in SSC ADUVAP-904. Move power source from Line 4 Numa Logic PLC cabinet to a breaker in a power panel. Note: ADUVAP-904 is the failure of the conductivity probe in each line condensate discharge to close. The line steam supply block valve (to both vaporizers on the line) if high conductivity is detected (> 250 micro-siemens/cm). Note: In the ISA, ADUVAP 904 is a failure of conductivity sensor to cut steam supply.

CCF 15297 and 15298. Replace PLC with hardwired logic for SSC Vent-ADUBB-101 and Vent-ADUBB-114 for Bulk Blending Area DC-923 Torit. Note: In the ISA, Vent-ADUBB-101 and Vent-ADUBB-114 are failures of hi-hi level probe/audible alarm ADU Bulk Blending Torit and Vacuum systems (DC-923A/B & DC-924) and operator action.

CCF 15357. This is an unspecified security requirement in the public submittal.

CCF 15534. Calciner/Scrubber Spring-Open Valve Replacements. Addresses potential risks of nitrogen purge valves to the scrubber being accidentally turned off and defeating SSC ADUSCR-904. Note: In the ISA, ADUSCR-904 Scrubber pressure is monitored for conversion lines that have undergone changes as a result of the calciner scrubber safety upgrade project. If scrubber pressure is less than -0.125 inches of water, nitrogen is to be injected into the calciner scrubber system.

CCF 15371. Relocation of Latch on Hot Oil Room. Relocate the existing latch on the hot oil room door from the top of the door to the bottom. SSC ADUHOS-405 is affected by this modification. Note: In the ISA, SSC ADUHOS-405 is Fire Doors to Hot Oil Room Prevent fire spread by keeping doors closed. Operator checks to ensure that the latch and door closing mechanisms are keeping the Fire Doors shut.

CCF 15384 Line 4. Calciner/Scrubber Fire Safety Upgrades Phase 2 mechanical modifications. Defense in Depth is lacking in the Active Engineered Control system for Hydrogen and Nat. Gas deflagration mitigation. In some cases, Process and Safety instrumentation share the same hardware, where existing process instrumentation is being used for safety applications. Failure of this instrumentation could lead to a deflagration event. In other cases, reliance is solely on Administrative Controls to mitigate Nat. Gas deflagration risks (e.g., ADUCAL-409: Air purge of Combustion Chamber). Note: In the ISA, ADUCAL-409 is the Air purge of combustion chamber.

CCF 15391. Scrap Cage Water Piping Modifications. Modify the Conversion scrap cage water piping in the following ways to remove the backflow preventers RP-1058A and RP-1058B which are credited as SSC's ADUSCRP-147 and ADUSCRA-118. In addition to removing the backflow preventers, the following additional changes will be completed as part of this CCF to ensure no loss of backflow prevention. First, the supply to the S-1030 scrubber via scrubber sump tank V-1030G will be changed from DI water to process water. Second, the line break that was completed per CCF 14380 will be reversed. Third, a new permanent line break will be completed in another section of the DI water piping above the front end of line 5. Fourth, a section of DI water piping extending from the $UF_6$ bay to the front end of line 5 will be removed. These changes will allow the DI water supply to the scrap cage to be protected by existing backflow preventers RP-1365A, RP-1365B, RP-1365C, and RP-1365D which are credited as SSC's ADUBFP-103 and ADUBFP-104. Note: In the ISA, both ADUSCRP-147 and ADUSCRA-118 are deleted. ADUBFP-103 is at least one back-flow prevention device shall be installed in the plant DI water supply piping from T-1365. ADUBFP-104 is a second independent back-flow prevention device shall be installed in the plant DI water supply piping from T-1365.

REFERENCE

1. Letter from N. Parr, Westinghouse Electric Company LLC, “Westinghouse 10 CFR 70.72 Facility Change Report”, January 25, 2016. ADAMS Accession Number ML16025A244.