UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

July 28, 2016

EN 51767
EN 51974

Mr. Bruce Phillips
Vice President, Columbia Fuel Operations and
Manager, Columbia Plant
Westinghouse Electric Company
5801 Bluff Road
Hopkins, SC 29061

SUBJECT: WESTINGHOUSE ELECTRIC COMPANY – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT NO. 70-1151/2016-003

Dear Mr. Phillips:

The Nuclear Regulatory Commission (NRC) conducted an announced inspection during the second quarter of calendar year 2016 (April 1 – June 30, 2016), at the Westinghouse Columbia Fuel Fabrication Facility in Hopkins, SC. The purpose of the inspection was to determine whether activities authorized under the license were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of the inspection. At the conclusion of this inspection, the results were discussed with you and members of your staff at an exit meeting on June 23, 2016.

During the inspections, NRC staff examined activities conducted under your license as they related to public health and safety, and to confirm compliance with the Commission's rules and regulations, and with the conditions of your license. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

The inspection covered the following areas; Operational Safety, Maintenance and Surveillance, and Nuclear Criticality Safety. No violations of significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of NRC's "Rules of Practice and Procedure," a copy of this letter and enclosure will be made available electronically for public inspection in the NRC Public Document Room, or from the NRC's Agencywide Documents Access and Management System (ADAMS), which is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

If you have any questions, please contact Tom Vukovinsky of my staff at (404) 997-4622.

Sincerely,

/RA/

Eric C. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

Docket No. 70-1151
License No. SNM-1107

Enclosure:
NRC Inspection Report 70-1151/2016-003
w/Supplemental Information

cc: (See page 3)

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U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.:	70-1151
License No.:	SNM-1107
Report No.:	70-1151/2016-003
Licensee:	Westinghouse Electric Company
Facility:	Columbia Fuel Fabrication Facility
Location:	Hopkins, SC 29061
Dates:	April 1 through June 30, 2016
Inspectors:	B. Adkins, Senior Fuel Facility Inspector (Section B.1 and C.1.a) C. Rivera, Fuel Facility Inspector (Sections A.2) T. Sippel, Fuel Facility Inspector (Section A.1 and C.1.b) R. Womack, Fuel Facility Inspector (Section B.1 and C.1.a)
Approved by:	E. Michel, Chief Projects Branch 2 Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Westinghouse Electric Company
Columbia Fuel Fabrication Facility
NRC Integrated Inspection Report 70-1151/2016-003
April 1 through June 30, 2016

The inspection was conducted by Nuclear Regulatory Commission (NRC) regional inspectors during normal shifts in areas of safety operations and facility support. The inspectors performed a selective examination of license activities that were accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records. No violations of significance were identified.

Operational Safety

- Sampled portions of the Nuclear Criticality Safety (NCS) program were properly implemented and maintained in order to assure that normal and credible abnormal conditions remained subcritical as required by license and regulatory requirements. Criticality analysis demonstrated double contingency and adequate control of NCS parameters. (Paragraph A.1)

- The sampled items relied on for safety reviewed were properly implemented and maintained in order to perform their intended safety function (Paragraph A.2).

Facility Support

- Sampled portions of the Maintenance and Surveillance of Safety Controls program were implemented in accordance with the license application and regulatory requirements (Paragraph B.1)

Other Areas

- Review of Licensee Event Report (LER) 70-143/2016-001, “EN 51767: Contaminated Radioactive Material Shipment.” The event was reviewed and no violations of NRC requirements were identified. (Paragraph C.1.a)

- Review of LER 2016-003-0, “EN 51974: Loss or degraded safety item.” This event remains open and will be evaluated in a later inspection. (Paragraph C.1.b)

Attachment:
Key Points of Contact
List of Items Opened, Closed, and Discussed
Inspection Procedures Used
Documents Reviewed

REPORT DETAILS

Summary of Plant Status

The Westinghouse Facility converts uranium hexafluoride (UF_6) into uranium dioxide using a wet conversion process, and fabricates fuel assemblies for use in commercial nuclear power reactors. During the inspection period, normal production activities were ongoing.

A. Safety Operations

1. Nuclear Criticality Safety (Inspection Procedure (IP) 88015)

a. Inspection Scope and Observations

Criticality Analysis

The inspectors reviewed selected criticality safety evaluations (CSEs) to determine whether properly reviewed and approved CSEs were in place prior to conduct of new or changed operations, and were of sufficient detail and clarity to permit independent review. The inspectors reviewed the selected CSEs to determine whether calculations were performed within their validated area of applicability and consistent with the validation report. The inspectors reviewed the selected CSEs and associated assumptions and calculations to verify that they were consistent with the commitments in the License Application, including the consideration of the Double Contingency Principle, assurance of subcriticality under normal and credible abnormal conditions with the use of subcritical margin, technical practices and methodologies, and treatment of Nuclear Criticality Safety (NCS) parameters. The CSEs were selected based on factors such as risk-significance, whether or not they were new and/or revised, and operating history. The CSE review focused on CSE-7-A, CSE-13-A, CSE-16-I, and CSE-99-G.

The inspectors reviewed the licensee's generation of accident sequences in the above CSEs to determine whether normal and credible abnormal conditions were systematically identified in accordance with the commitments and methodologies in the License Application for the analysis of process upsets. This included the review of accident sequences that the licensee determined to be not credible to determine whether the bases for incredibility were consistent with the commitments, definitions, and methodologies in the License Application, and were documented in sufficient detail to permit an independent assessment of credibility. Additionally, the inspectors reviewed selected accident sequences designated as not credible to determine whether the bases for incredibility rely on any items which should be identified as items relied on for safety (IROFS). This review was conducted for the solvent extraction system, the incinerator system, and for inadvertent containers and containers used in ventilation clean-out.

The inspectors verified that no changes to the validation report had been made since the last NCS inspection. The inspectors also reviewed the bias and bias uncertainty calculation (CN-CRI-07-8) for homogeneous systems modeled using the MCNP computer code, to verify that the correct bias and bias uncertainty was used.

Criticality Implementation

The inspectors performed walk-downs in the solvent extraction area to determine whether existing plant configuration and operations were covered by, and consistent with, the process description and safety basis in the CSE. The inspectors checked that selected engineered controls established in the CSEs were included in process and system descriptions, drawings, etc. The engineered controls reviewed included, SOLX-101, -108, -109, -110, -111, and -118. The inspectors reviewed operating procedures and postings to verify that selected administrative controls established in the CSEs were included. The administrative controls reviewed included, STORAGE-GEN-126, -127, VENT-PEL-118, and VENT-PEL-101-DC. The inspectors interviewed one operator to verify clear and accurate understanding of the selected administrative controls established in the CSEs.

The inspectors also reviewed the integrated safety analysis (ISA) Summary and supporting ISA documentation to determine whether the controls identified in the ISA were supported by technical basis in the CSEs.

Criticality Operational Oversight

The inspectors reviewed NCS-related training material, and interviewed a senior NCS engineer, to verify that operator training materials included instructions in criticality hazards and control methods, the licensee's established NCS-related operator training was consistent with commitments in the License Application, including American Nuclear Society (ANS) standards where applicable, and NCS staff participated in the development of operator training guides. Additionally, the inspectors interviewed operators to determine whether they were cognizant of NCS hazards and control methods as they relate to their specific job function. The NCS-related training material and procedures reviewed included TRN-004, TRN-062, and CA-220.

The inspectors reviewed records for the first quarter of 2016 of facility walkthrough assessments, and accompanied a senior NCS engineer on a facility walkthrough assessment of the pelleting area to determine whether the NCS function assesses field compliance with established NCS controls. Additionally, the inspectors interviewed NCS management and reviewed audit procedures and schedules to verify that the NCS function performed these assessments such that the complete set of operations in the ISA were assessed on the quarterly (higher risk) or semiannual frequency (lower risk) required by Section 6.1.9 of the License Application.

Criticality Programmatic Oversight

The inspectors reviewed recently revised NCS program procedures to determine whether the licensee implemented license requirements and whether the NCS program was enacted in accordance with them. The revised NCS program procedures included NCS Manual Chapter 003 (NCS-003), RA-302, RA-305, RA-312, RA-313, and RA-316. The inspectors conducted interviews and reviewed records to determine whether NCS staff reviewed new and/or revised fissile material operations and procedures, including maintenance plans, consistent with program procedures and at a level commensurate with their significance.

The inspectors reviewed the selected CSEs listed above to verify that they were performed in accordance with NCS program procedures and received appropriate independent review and approval. The inspectors reviewed the NCS program audits (including EHS-AUDIT-15-11) to verify that they were conducted at a frequency consistent with license requirements and with appropriate thoroughness. The inspectors inspected the licensee's corrective action prevention and learning system (CAPAL) and Redbook system, through interviews and review of NCS-related entries, to verify that audit observations and findings were communicated to licensee management and were appropriately followed up on. The items identified during the NCS program audit were documented and tracked in CAPAL 100336084.

The inspectors reviewed NCS staff qualification records and conducted interviews to verify that NCS engineers and senior NCS engineers possess the required educational experience qualification in accordance with license requirements.

Criticality Incident Response and Corrective Action

The inspectors reviewed various aspects of the criticality accident alarm system (CAAS) to determine whether the CAAS characteristics met regulatory requirements and license commitments. These aspects included whether the CAAS was designed and implemented so as to minimize false alarms, whether components were resistant to environmental conditions and natural phenomena, whether detector failure was self-announcing, and whether there was adequate emergency power for detectors and electricity to ensure the CAAS annunciators will continue to annunciate until manually reset.

The inspectors reviewed detector placement calculations (CN-CRI-15-07) for the new CAAS detectors to determine whether dual detector coverage was provided and whether conservative assumptions consistent with license commitments were made concerning the source strength and spectrum, source location, and the amount and location of intervening shielding in accordance with the applicable portions of License Application section 6.1.8. The inspectors reviewed records of the calibration of the new detectors performed on May 16, 2016 to determine whether detectors were calibrated in accordance with ANS-8.3-1997. The inspectors walked down portions of the CAAS with a licensee technician, and interviewed licensee managers, engineers, and staff responsible for the maintenance and operation of the CAAS to verify whether CAAS detector operability was maintained, including, whether all components were functionally tested, whether alarm setpoints were set to promptly actuate upon detecting the minimum accident of concern, and whether access to alarm setpoints was strictly controlled. The inspectors interviewed licensee engineers and observed portions of the audible alarm testing to verify that it was conducted weekly on all three shifts as required.

The inspectors interviewed licensee staff and management to determine whether the licensee maintained emergency response capability consistent with the requirements of Section 6.1.8 of the License Application and the commitment to ANS-8.23-1997, including performing drills and tests, and to verify that qualified NCS staff was available to advise the licensee in an emergency. The inspectors interviewed the Health Physics manager to verify that the licensee had monitoring instrumentation to promptly assess dose to potentially exposed individuals and to aid in recovery, and whether provisions were in place for the prompt decontamination and medical treatment of exposed individuals, as well as provisions for re-entry into the facility after a CAAS activation.

The inspectors reviewed selected NCS-related CAPAL and Redbook items to determine whether anomalous conditions were promptly identified and entered into CAPAL, whether they received the appropriate level of investigation consistent with license commitments and procedures, whether proposed corrective actions were sufficiently broad, and whether they were completed as scheduled and were adequate to prevent recurrence. Additionally, the inspectors reviewed the selected NCS-related items to assess NRC reportability. The CAPAL and Redbook entries reviewed are listed in section 4 of the attachment.

b. Conclusion

No findings of significance were identified.

2. Operational Safety (IP 88020)

a. Inspection Scope and Observations

The inspectors reviewed the licensee's Integrated Safety Analysis (ISA) Summary and Integrated Safety Analysis (ISA) for the URRS Solvent Extraction (SOLX) system. The inspectors walked down the systems, observed routine plant operations, shift turnovers, and housekeeping. The inspectors interviewed control room operators and attended a plan of the day meeting.

The inspectors reviewed operations procedures, functional test instructions, training and qualification records and others records associated with selected Items Relied on For Safety (IROFS) in the SOLX area. The selected controls included IROFS: SOLX 903, SOLX 503, SOLX 501, SOLX 502, SOLX 504, SOLX 117, SOLX 118, and SOLX 111. The inspectors determined that these IROFS were implemented as describe in the licensee's ISA summary. To complete this confirmation, the inspectors verified the physical presence of passive safety controls, evaluated the safety controls to determine their capability and operability, and verified that potential accident scenarios were covered.

The inspectors determined that the licensee's administrative controls were implemented and communicated. The inspectors reviewed COP-830110, "SOLX & Product Concentrator System 1: Start-up and Operation," and SEPF-009-08, "Command Check Sheet-Perchloroethylene Release," and determined that required actions as identified in the ISA Summary have been correctly transcribed into written operating procedures. The inspectors evaluated the procedures' contents with respect to operator responses for upset conditions and verified operators are knowledgeable of the relevant actions to assure safety during normal and upset conditions.

The inspectors interviewed the SOLX engineer, two shift operators, and two area operators associated with the SOLX area and determined that operators were adequately implementing the required safety controls. The inspectors reviewed training and qualifications records associated with the staff interviewed and validated their qualifications for their specific positions.

Through interviews and document reviews, the inspectors verified that the licensee conducted preventive maintenance and periodic surveillance as required by the ISA Summary for SOLX 903, 503, 504,117 and 111.

The inspectors reviewed the licensee's corrective action program entries for the past 12 months and determined that deviations from procedures and unforeseen process changes affecting nuclear criticality, chemical, radiological, or fire safety were documented and investigated promptly. Also, the inspectors reviewed the audits and assessments (including EHS-AUDIT-16-4) performed in the area of safety operations to verify that they were conducted at a frequency consistent with license requirements and with appropriate breadth and depth. The inspectors inspected the licensee's CAPAL to verify that audit observations and findings were communicated to licensee management and were appropriately tracked to resolution.

b. Conclusion

No findingss of significance were identified.

B. Facility Support

1. Maintenance and Surveillance of Safety Controls (IP 88025)

a. Inspection Scope and Observations

The inspectors performed document reviews, and observed maintenance and surveillance field activities for IROFS and other safety controls to ensure they remained reliable and available to perform their safety function when needed. The following specific IROFS were inspected: WT-132, SOLX-503, SOLX-504, and SOLX-903. The inspectors reviewed a total of twelve work packages to determine if they were reviewed and evaluated prior to returning equipment to service.

The inspectors reviewed the licensee's work control program to determine if it included provisions to ensure pre-job planning and preparation of work orders to support maintenance and surveillance activities. The inspectors observed a maintenance shift turnover meeting and a pre-job briefing for a large maintenance evolution to determine compliance with the provisions of the work control program. The inspectors reviewed maintenance and surveillance work orders and surveillance test packages for accuracy and to ensure they challenged and verified operability of IROFS and safety controls.

The inspectors observed maintenance work activities on selected systems and processes to determine if work activities were conducted in accordance with licensee requirements and approved procedures. Specifically, the inspectors observed replacement of the V1081 SOLX glass column in the solvent extraction. The inspectors reviewed the work order to determine if the work was properly controlled and authorized by operations prior to commencement of work, including a review of the lockout used to protect the workers from hazardous energy sources. The inspectors observed field storage of the glass column to determine if proper controls were used to prevent accidental damage from adjacent work activities. The inspectors conducted interviews of maintenance staff and supervisors to assess the ability of the licensee to safely conduct the work in accordance with license requirements and procedures. The inspectors reviewed the work instructions for accuracy, proper level of detail, and inclusion of post maintenance test requirements to verify operability of the equipment prior to returning it to service.

The inspectors observed a periodic surveillance test of the conversion wastewater discharge gamma monitor interlock. This interlock is credited as an active engineered

IROFS for the prevention of criticality (PM 81131). The inspectors reviewed the work instructions and design drawings to determine if the surveillance adequately tested the safety function of the interlock. The inspectors conducted interviews of the maintenance technicians that performed the surveillance to assess their knowledge and training of the procedure and associated safety function. The inspectors reviewed the calibration records for the radioactive source and test equipment used to verify operability of the interlock. The inspectors interviewed one maintenance engineer to discuss the system design, associated interlock logic, and previous startup testing performed when the equipment was originally placed into service.

The inspectors interviewed one maintenance supervisor regarding the training and qualification program for maintenance technicians that perform maintenance on safety related equipment including IROFS. The inspectors also reviewed the training and qualification records for one instrument and controls technician that performed the conversion wastewater discharge gamma monitor interlock surveillance to determine if the individual was qualified to perform the assigned activity.

The inspectors reviewed the Environmental Health and Safety audit that encompasses maintenance activities and verified that it met license requirements. The inspectors selected a sample of audit findings to determine if they were properly entered into the licensee's CAPAL

The inspectors also reviewed the licensee problem identification and resolution program to verify that performance issues relating to the maintenance and surveillance of IROFS and safety controls were entered into the CAPAL and evaluated the adequacy of corrective actions taken. A total of five corrective action reports were reviewed.

b. Conclusion

No violations of significance were identified.

C. Special Topics

1. Follow-up on Previously Identified Issues

a. Licensee Event Report (LER) 70-143/2016-001, Event Number (EN) Event Notification 51767, "Contaminated Radioactive Material Shipment"

On March 4, 2016, Nuclear Fuel Services, Inc. (NFS) reported under the requirements of 10 CFR 20.1906(d)(1) that removable radioactive surface contamination on two of nine LR-230 packages in a shipment received from Westinghouse Electric Company exceeded the limits specified by 10 CFR 71.87(i). 10 CFR 71.87(i) states, in part, that the level of removable radioactive contamination on the external surfaces of each package offered for shipment must be within the limits specified in Department of Transportation regulation 49 CFR 173.443.

The inspectors interviewed two managers, two uranium transportation operators, and one health physics technician. The inspectors reviewed the shipping papers and the outgoing and incoming radiation survey records from Westinghouse and NFS, respectively. The inspectors also reviewed current and past revisions of one health physics and two chemical operating procedures that were revised following the report.

NFS submitted the notification to the NRC and Westinghouse when the measurements of removable surface contamination exceeded the licensee's internal action level. The inspectors determined that the licensee's methodology applied to establish the action level conservatively grouped all alpha emitting radionuclides into one category. Limits established in 49 CFR 173.443 separate low toxicity alpha emitters and all other alpha emitting radionuclides. The radioactive material in the shipment met the definition of low toxicity alpha emitters, and was subject to higher regulatory limits than the licensee conservatively reported.

After evaluating the methodology applied by both licensees, applying the appropriate classification of low toxicity alpha emitter to the contaminant, and confirming that the shipment met the criteria for maximum permissible limits specific to exclusive use shipments in 49 CFR 173.443(b), the inspectors determined that no regulatory limits were exceeded. Due to not exceeding any regulatory limits, this event was subsequently retracted by NFS on July 15, 2016.

b. LER 2016-003-0, "EN 51974: Loss or degraded safety item"

On June 2, 2016, the licensee reported the loss of two administrative IROFS, STORAGE-GEN-126 and -127, during a ventilation clean out operation of scrubber S-1030. The IROFS were verification of the safe geometry features of the containers being used in the clean out by the area engineer and an operator. Although the operators used the correct safe geometry containers, they failed to complete and document the IROFS checks on the geometry. During this inspection the inspectors focused on whether or not the facility was in a safe condition and whether or not the licensee's short-term corrective actions were able to prevent recurrence.

After the event, the licensee verified that the proper containers were used (IROFS STORAGE-GEN-111) and had the proper dimensions. Additionally, the NCS analysis in CN-CRI-09-16 shows that a tight packed array of over 64 full containers would be needed to exceed the upper subcritical limit. This event involved 37 containers, and the operators spaced them according to the general NCS spacing requirements; even though this was not required as part of the clean out operation. The licensee implemented short term corrective actions to prevent recurrence which includes locking up other unverified containers of this type.

At the time of the inspection the licensee was working on their apparent cause analysis and recommended long-term corrective actions. After evaluating the licensee's actions, the inspectors concluded that the licensee restored the facility to a safe condition. This issue is being tracked as Licensee Event Report (LER) 2016-003-0, and remains open; it will be evaluated in detail in a later inspection.

D. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on June 23 to B. Phillips and staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

SUPPLEMENTAL INFORMATION

1. KEY POINTS OF CONTACT

Name	Title
P. Bartman	QA Manager
G. Byrd	Licensing Engineer
R. Byrd	I&C Manager
P. Cotton	I&C Technician
T. Gregg	Manager of URRS
A. Hensen	Solvent Extraction Engineer
A. McGehee	Senior NCS Engineer
N. Parr	Licensing Manager
A. Pearson	Health Physics Manager
C. Snyder	NCS Manager
M. Trayers	Maintenance Engineering Manager
J. Vining	Senior NCS Engineer
S. Weathers	Conversion Engineer
T. Wells	Manager of Work Management

Other licensee employees contacted included engineers, technicians, production staff, and office personnel.

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Discussed

70-0143/2016-001-0	LER	EN 51767: Contaminated Radioactive Material Shipment (Paragraph C.1.a). EN 51767 has been retracted.
70-1151/2016-003-0	LER	EN 51974; Loss or degraded safety item (Paragraph C.1.b)

3. INSPECTION PROCEDURES USED

IP 88015, Nuclear Criticality Safety
IP 88020, Operational Safety
IP 88025, Maintenance and Surveillance of Safety Controls

4. DOCUMENTS REVIEWED

Records:
508F02EL06, Q-Tanks Feed to Waterglass Gamma Monitoring, Revision (Rev.) 3
CF-85-001, Radioactive Material Shipment Record, dated March 3, 2016
EHS-AUDIT-14-2, Environmental Health & Safety Audit for Configuration Management, Maintenance Procedures, Training and Qualification, Human Factors, Recordkeeping and Reporting, dated April 30, 2014
EHS-AUDIT-16-1, Environmental Health & Safety Audit for the Chemical Safety Program, dated March 7, 2016
EHS-AUDIT-16-4, Formal Compliance Audit, dated March 15, 2016

PM 81131, SI-Safety Conversion Wastewater Discharge Gamma Monitor Interlock – 13 Week PM
PSE-09-RKA-024, Waterglass CSE Implementation Test Report, dated June 22, 2009
PSED-0001466, External Inspection of V-1454D
PSED-0001594, Internal Mechanical Inspection of T-1039, dated October 8, 2013
PSED-0001806, External Visual UT Mechanical Integrity Inspection of T-1039, dated February 10, 2014
PSED-0002680, External Inspection of the Solvent Supply Piping in URRS/SOLX
SYF-219-2, Form for V-116A, dated August 8, 2007
SYF-220-1, Form for Line # 209-1”-40, 203-1/2”-40, 218-1/2”-40, dated August 24, 2010
Training File for Employee Badge #36932
WO629090/PM85048, 5 Year PM – Solvent Extraction Tank External Mechanical Integrity Inspection
WO694592/PM85056, Annual PM – Glass Column, dated July 2, 2015
WO69646, 6 Month PM – URRS Flange Guards, dated June 30, 2015
WO700943, 6 Month PM – Solvent Extraction Pump External Mechanical Integrity Inspection, dated August 8, 2015
WO701665, 6-Month PM – Glass Column Thickness Test, dated July 9, 2015
WO701699/PM85049, 5 Year PM – Solvent Extraction Piping Mechanical Integrity Inspection
WO709086, Annual PM – SOLX DI-Water Backflow Preventer, dated November 24, 2015
WO718906/PM85047, External Inspection of P-1082A, dated February 17, 2006
WO72787/PM85052, V717 Level Probe Verification
WO734796, Replace Glass Column V1481 in Solvent Extraction
WO735138/PM20222, Emergency Blue Lights Semi-Annual Check – Group 1
WO616796/PM85057, 5 Year PM, Solvent Extraction Tank External Mechanical Integrity Inspection, dated March 22, 2013
CN-CRI-07-8, Determination of Bias for Homogeneous Systems Modeled using MCNP 5, Rev. 0
CN-CRI-15-07, UF_6 Pad Expansion CAAS Placement Analysis, Rev. 3
CN-CRI-09-16, Ventilation Clean-Out Containers, Rev. 1
CN-SB-11-016, Criticality Accident Potential for Ventilation Clean-Out Containers, Rev. 0
CSE-7-A, Criticality Safety Evaluation (CSE) for the Solvent Extraction System, Rev. 8
CSE-13-A, Criticality Safety Evaluation (CSE) for the Incinerator System, Rev. 11
CSE-16-I, Criticality Safety Evaluation (CSE) for Ventilation Clean-Out Containers, Rev. 1
CSE-99-G, Criticality Safety Evaluation for Inadvertent Containers, Rev. 2
EHS-AUDIT-15-11, Nuclear Criticality Safety Program Audit, dated October 2015
EHS-AUDIT-16-4, Formal Compliance Audit, dated February 11, 2016
EHS-AUDIT-16-4, Formal Compliance Audit, dated March 15, 2016
FWAs for the 1st Quarter of 2016
LTR-EHS-16-1, 2016 EH&S Program, Supplier, and Formal Compliance Audit Schedule, dated January 25, 216
LTR-EHS-16-23, 2015 EH&S Program, Supplier, and Formal Compliance Audit Status, dated February 29, 2016
TRN-004, Floor Storage Training, Rev. 6
TRN-062, Criticality Safety Posting Training, Rev. 5
Qualification records for NCS engineers
Qualification records for SOLX operators and Engineer

Procedures:
COP-836047, Uranyl Nitrate Offloading From LR-230 Containers, Revs. 10, 11 and 12
COP-836052, Annual Maintenance and Inspection of LR-230 Shipping Packages, Revs. 0 and 1
COP-830110, SOLX & Product Concentrator System 1: Start-up and Operation, Rev. 38
COP-830111, SOLX and Product Concentrator System 2: Startup and Operation, Rev. 26
COP-830128, Adjusting and Making-up Solvent Extraction Systems 1 and 2, Rev. 12
MCP-108000, Preventive Maintenance, Rev. 17
MCP-108103, Maintenance Work Order Handling, Rev. 34
ROP-02-010, Surveillance of Uranium Shipments from Outside Sources, Revs. 19 & 20
WM-001, Work Management Process, Rev. 0
WM-002, Deficiency Identification and Reporting, Rev. 4
WM-007, Work Management Scheduling, Rev. 3
WM-008, Work Management Planning, Rev. 2
CA-220, Nuclear Safety Qualification Training, Rev. 5
COP-815021, S-1030 Inspection and Clean Out, Rev. 8
COP-843009, Filter House Cleaning (Roof), Rev. 1
MCP-202037, GA-6M Criticality Alarm Calibration & SSC Verification, Rev. 29
NCS-003, NCS Facility Walkthrough Assessments, Rev. 15
RA-301, Floor Storage of Special Nuclear Material, Rev. 26
RA-302, Criticality Posting, Rev. 17
RA-303, Control of Moderating Materials for Nuclear Criticality Safety, Rev. 18
RA-304, Criticality Accident Alarm System, Rev. 16
RA-305, Nuclear Criticality Safety Computer Code Validation, Rev. 9
RA-312, NCS Calc Note Generation, Format, and Content Requirements, Rev. 8
RA-313, Criticality Safety Evaluations (CSEs), Rev. 15
RA-316, NCS Facility Walkthrough Assessments, Rev. 9
ROP-01-057, Operation of Thermo Scientific Model EPD MK2 and SAIC Model PD-3i Personal Dosimeters, Rev. 2
SEP-012, Operation Guidelines during Loss of Criticality Accident Alarm System Coverage, Rev. 0
SEPF-009-08, Command Check Sheet-Perchloroethylene Release, Rev. 3

Condition Reports Written as a Result of the Inspection:
None

Condition Reports Reviewed:
100312454, 100318475, 100318180, 100342314, 100314037, 100366271, 100325409, 100336084, 100383462, 100366119

Redbook items: 69140, 69290, 69557, 69667, 69669, 69676

Other Document:
DWG 305F02PI03, Fluoride Stripping/ABF Furnace Scrubber S-707, Rev. 17.