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

October 28, 2016

Mr. Adam Hilton
FMO Facility Manager
Global Nuclear Fuel – Americas, L.L.C.
P.O. Box 708, Mail Code J20
Wilmington, NC 28402

SUBJECT: GLOBAL NUCLEAR FUEL-- AMERICAS, L.L.C. – U.S. NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-1113/2016-004 AND NOTICE OF VIOLATION

Dear Mr. Hilton:

The Nuclear Regulatory Commission (NRC) conducted an announced inspection during the third quarter of calendar year 2016 (July 1 – September 30, 2016), at the Global Nuclear Fuel-Americas, L.L.C. Facility in Wilmington, NC. The purpose of the inspection was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. A review of implementation of programs and procedures for Operational Safety, Nuclear Criticality Safety, and Maintenance and Surveillance was conducted. The enclosed report presents the results of the inspection. At the conclusion of this inspection, the inspectors discussed the findings with you and members of your staff at an exit meeting held on September 15, 2016.

During the inspection, the NRC staff examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspection consisted of facility walk-downs, selective examinations of relevant procedures and records, interviews with plant personnel, and plant observations. Throughout the inspection, observations were discussed with your managers and staff.

Based on the results of the inspection, the NRC has determined that a Severity Level IV violation of NRC requirements occurred.

This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html). The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it is described in detail in the subject inspection report. The violation is being cited in the Notice because it is considered self-revealing and was not identified by the licensee.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance would be achieve, is already adequately addressed on the docket in inspection report 70-1113/2016-004. Therefore, you are not required to respond to this letter unless the

description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

If you have any questions concerning the inspection, 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. 70-1113
License No. SNM-1097

Enclosures:
1. Notice of Violation
2. NRC Inspection Report 70-1113/2016-004
   w/Supplementary Information

cc:
Scott Murray, Manager
Facility Licensing
Global Nuclear Fuels – Americas, L.L.C.
Electronic Mail Distribution

W. Lee Cox, III, Chief
North Carolina Department of Health and Human Services
Division of Health Service Regulation
Radiation Protection Section
Electronic Mail Distribution

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☒ PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE ☒ NON-SENSITIVE
ADAMS: ☒ Yes ACCESSION NUMBER: ML16302A139 ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI			
SIGNATURE	/RA/	/RA/	/RA/	/RA/			
NAME	P. Startz	R. Gibson	NPeterka	TVukovinsky			
DATE	10/26/2016	10/27/2016	10/28/2016	10/28/2016	10/ /2016	10/ /2016	10/ /2016
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

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Letter to Mr. Adam Hilton from Eric C. Michel dated October 28, 2016

SUBJECT: GLOBAL NUCLEAR FUEL-- AMERICAS, L.L.C. – U.S. NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-1113/2016-004 AND NOTICE OF VIOLATION

Distribution:
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PUBLIC

NOTICE OF VIOLATION

Global Nuclear Fuel-Americas
Wilmington, NC

Docket No. 70-1113
License No. SNM-1097

During an NRC inspection conducted on September 12 through 15, 2016, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> 10 CFR 70.62(d) requires, in part, that "management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to 10 CFR 70.61(e) of this subpart are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of 10 CFR 70.61 of this subpart."
>
> Contrary to the above, on August 12, 2016, the licensee failed to implement adequate management measure to ensure that the dry scrap recovery (DSR) furnace screener, identified as an item relied on for safety (IROFS), was implemented to ensure it was available and reliable to perform its function when needed, to comply with the performance requirements of 10 CFR 70.61. Specifically, the licensee failed to establish adequate procedures to ensure the passive geometric features of the dry scrap recovery furnace screener (IROFS 301-05) were maintained.

This is a Severity Level IV violation (Section 6.2 of the Enforcement Policy).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance would be achieve, is already adequately addressed on the docket in inspection report 70-1113/2016-004. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, 70-1113/2016-004-01," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region II within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 28th day of October 2016.

U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.:	70-1113
License No.:	SNM-1097
Report No.:	70-1113/2016-004
Licensee:	Global Nuclear Fuel - Americas, LLC
Location:	Wilmington, North Carolina 28402
Dates:	July 1, 2016 to September 30, 2016
Inspectors:	R. Gibson, Senior Fuel Facility Inspector N. Peterka, Fuel Facility Inspector P. Starz, Fuel Facility Inspector D. Harmon, Fuel Facility Inspector-in-Training
Approved by:	E. Michel, Chief Projects Branch 2 Division of Fuel Facility Inspection

Enclosure 2

EXECUTIVE SUMMARY

Global Nuclear Fuel - Americas, LLC
NRC Integrated Inspection Report 70-1113/2016-004
July 1 – September 30, 2016

NRC regional inspectors conducted inspections during normal shifts in the areas of Operational Safety, Nuclear Criticality Safety, and Maintenance and Surveillance. During the inspection period, normal production activities were ongoing. These announced, routine inspections consisted of a selective examination of procedures and representative records, observations of activities, walk-downs of items relied on for safety and interviews and discussions with licensee personnel. One violation was identified during these inspections.

Safety Operations

- In the area of Operational Safety, one Severity Level IV violation of NRC requirements was identified.

- In the area of Criticality Safety, no violations were identified.

Facility Support

- In the area of Maintenance and Surveillance, no violations were identified.

Attachment

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

REPORT DETAILS

Summary of Plant Status

Global Nuclear Fuel – Americas (GNF-A), LLC manufactures uranium dioxide (UO_2) powder, pellets, and light water reactor fuel bundles at its Wilmington, NC facility. The facility converts uranium hexafluoride (UF_6) to UO_2 using a Dry Conversion Process (DCP) and performs UO_2, gadolinium pellet and fuel fabrication operations. During the inspection period normal production activities were ongoing.

A. Safety Operations

1. Operational Safety (Inspection Procedure 88020)

a. Inspection Scope and Observations

The inspectors performed facility walk-downs and reviewed samples of a broad range of safety-significant plant operations to evaluate if items relied for safety (IROFS) were being implemented as described in the Integrated Safety Analysis (ISA) Summary for the GNF-A Facility, Revision (Rev.) 19, and if the licensee was operating the facility in compliance with 10 CFR 70.61 and the license application. The inspectors interviewed staff, reviewed records, and physically evaluated the following uranium processes: UF_6 Conversion, Uranium Reduction Kiln, UO_2 Blending, UO_2 Slugger/Granulation, UO_2 Bi-cone transfer, Pellet Pressing, Sintering Furnaces, Pellet Grinding, and dry scrap recovery (DSR) furnace operations. Additional inspection effort was directed at the DSR furnace uranium screening process failure that involved a safety control that failed to function as designed.

The controls selected for this inspection were IROFS 401-03 UO_2 Press Feed Equipment Barrier, 401-08 Pellet Press Equipment Barrier, 202-08 Recycle Dew Point Sensor and Alarms, 301-05 DSR Furnace Screener, and 301-18 Furnace Off-gas Particulate Collection Bottle. The inspectors evaluated the physical presence of selected passive/active engineered safety controls and the implementation of selected administrative controls, to determine their capability and operability. The inspectors also assessed if selected controls credited with limiting the risk of potential accident scenarios were capable of preventing or mitigating the scenarios as described in multiple volumes of the licensee's Quantitative Risk Assessments (QRA).

The inspectors reviewed selected procedures to determine if required actions as identified in the ISA Summary, Rev. 19, were correctly transcribed into written operating procedures. The inspectors evaluated the contents of selected operating procedures with respect to operating limits and operator responses for upset conditions to assess if limits and actions needed to assure safety were described in the procedures.

The inspectors interviewed several operators and supervisors to assess if operators and technicians were implementing safety controls in accordance with license requirements and procedures. The inspectors reviewed selected postings and operator aids applicable to the tasks being observed and verified that the postings and operator aids were current, representative of safety controls, and were followed by the operators.

The inspectors reviewed the licensee's corrective action program (CAP) entries for the past 12 months to assess if any deviations from procedures and unforeseen process changes affecting nuclear criticality, chemical, radiological, or fire safety were documented and investigated promptly, in accordance with paragraph 11.7 of the license application. Also, the inspectors evaluated the corrective actions associated with selected condition reports to evaluate if the completed corrective actions were in accordance with license requirements.

The inspectors interviewed operators, supervisors, and engineering staff to asses if personnel were implementing safety controls in accordance with license requirements and applicable operating procedures. The inspectors also reviewed their associated training and qualification records to verify they were adequately trained and qualified to perform their activities in accordance with paragraph 2.3 of the license application.

Inadequate Management Measures for the Dry Scrap Recovery Screener IROFS 301-05

Introduction: The inspectors identified a self-revealing cited Severity Level IV (SL IV) violation of 10 CFR 70.62 (d) for the licensee's failure to implement adequate management measures to ensure that IROFS 301-05 was available and reliable to perform its function when needed. Specifically, the licensee failed to establish adequate procedures to ensure the passive geometric features of the DSR furnace screener were maintained.

Description: On August 12, 2016, the GNF-A DSR screener used to separate uranium powder from larger uranium particulate either became, or was already, loose during operation and began leaking uranium powder. Approximately 115 kilograms of uranium powder accumulated over an estimated six hour period of time. A large polycarbonate glove box, referred to as a hood, completely enclosed the screener equipment. The enclosure contained most of the leaking powder and dust. The glove box was designed to prevent water (moderator) intrusion into the box and was kept at a negative pressure using process ventilation to prevent dust from escaping the box. The glove box remained functional during the event.

The event began when the operator switched the powder discharge dew point sampling system from automatic to manual, allowing the operator to confirm the proper operation of the dew point monitors. After performing the dew point test, the operator did not return the valve controller back into automatic mode as required by the procedure, or notice the red indicator light on the control panel before leaving the area to perform other operations. Because the screener was left in manual mode, the outlet valves remained closed, the inlet valves remained open, and uranium powder began to accumulate in the piping above the closed valve which eventually began filling the screener housing. As the screener housing filled with powder, powder began leaking from a joint in the housing.

The screener is composed of top and bottom housings, joined together by perimeter clamp rings. The junction of the housings also captures and holds the screen assembly along with a rubber gasket. The junction of the housings, screen, and rubber gasket are intended to be joined tightly together by a set of perimeter clamp rings. The manufacturer recommended that the clamp rings be progressively tightened securely while tapping on the perimeter of the rings to ensure complete seating of them. Complete seating of the rings was required to ensure they did not loosen during

operation due to the continuous vibration of the screener. The licensee's procedures required routine opening and inspection of the screener internals. The instructions required the operator to reassemble and snugly secure the clamps, but did not mention using a hammer or any other method to ensure complete seating of the perimeter clamp rings. The clamp rings on the screener housing were not properly seated, became loose during normal operation, and uranium powder began leaking from the joint between the screener housings. The uranium powder continued to leak out for an estimated six hours (at a rate of approximately 20 kg/hour) until around 8:00 a.m. at the shift change. The daytime operator arrived and noticed the red indicator light and the accumulation of uranium powder on the bottom of the glove box that enclosed the screener equipment.

As a result, the DSR screener was in a failed condition for approximately six hours due to the failure to properly install the perimeter clamp rings on the screener housing. The loss of the screener's containment function did not result in an actual safety consequence to the facility.

The DSR screener, IROFS 301-05, was classified as a passive engineered IROFS for safe geometry. QRA-301, Rev. 7, defined the IROFS failure, in part, as "loss of containment resulting in a large accumulation of uranium outside the furnace screener." The IROFS safety function was, in part, to contain the uranium within the safe geometry so that there is insufficient mass for a criticality to occur outside the furnace screener housing. This IROFS applied to the accident sequence; Moderator Leak onto the DSR Equipment (Moderator Control Area). The screener operation is located in a Moderator Controlled Area that is designed to reduce the probability of water (moderator) from being introduced into the area. Moreover, the accident sequence had two additional IROFS which were available and reliable to ensure that performance requirements of 10 CFR 70.61 were being met, regardless of the failure of the DSR screener IROFS.

Analysis: The licensee failed to establish adequate management measures to ensure IROFS 301-05 was available and reliable. Specifically, the licensee failed to establish adequate procedures to ensure the passive geometric features of the DSR furnace screener were maintained. This failure is a violation of 10 CFR 70.62(d).

The inspectors determined that the noncompliance is more than minor based on the screening question nine of Inspection Manual Chapter 0616, Appendix B-3, Integrated Safety Analysis, which asks, "Does the noncompliance adversely affect the ability of an IROFS or safety related component to perform its intended safety?" Specifically, the noncompliance adversely affected the ability of an IROFS to perform its intended safety function.

The inspectors determined that the performance requirements of 10 CFR 70.61 were still met due to additional IROFS in place for control of moderators around the screener. Because no moderator intrusion occurred, there was no actual safety consequence due to the loss of containment of the screener. Given the duration of the failed screener IROFS, and the remaining IROFS in place, it was determined that the potential safety consequence was low.

Enforcement: 10 CFR 70.62(d) requires, in part, that "management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to 10 CFR 70.61(e) of this subpart are

designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of 10 CFR 70.61 of this subpart."

Contrary to the above, on August 12, 2016, the licensee failed to implement adequate management measures to ensure that the DSR screener, identified as IROFS 301-05, was implemented to ensure it was available and reliable to perform its function when needed, to comply with the performance requirements of 10 CFR 70.61. Specifically, the licensee failed to establish adequate procedures to ensure the passive geometric features of the DSR furnace screener (IROFS 301-05) were maintained.

In response to the event, the licensee initiated immediate corrective actions as identified in Condition Report CR 20201, "DRS U Oxide Screener Leak." The immediate corrective actions included: (1) improved training for operators who install the perimeter clamp rings, (2) added the manufacturer's recommendations for the perimeter clamp ring installation into the operating procedure, and (3) implemented revised programming of the automation system to include a software interlock that closes a process feed valve above the screener. The process feed valve will now automatically remain closed when the screener is switched to the manual mode. This will prevent the flow of uranium powder down into the screener equipment during the dew point check. Additional corrective actions include the following: (1) a sign to remind the operator to check the indicator warning lights will be installed on a control panel, and (2) a corrective-actions effectiveness review will be conducted by the licensee to evaluate the success of process changes that were implemented. The immediate corrective actions one through three listed above, were confirmed, implemented and operational during the NRC inspection. The inspectors determined that the immediate corrective actions provided reasonable assurance that an identical event was unlikely.

In accordance with the NRC Enforcement Policy, violations that are less serious, but are of more than minor concern, and result in no or relatively inappreciable potential safety or security consequences are characterized as SL IV violations. The failure to provide adequate management measures for the DSR screener IROFS 301-05 is a SL IV violation of 10 CFR 70.62(d) and will be tracked as VIO 70-1113/2016-004-01, "Inadequate Management Measures for the Dry Scrap Recovery Screener IROFS 301-05."

b. Conclusion

One SL IV violation of NRC requirements was identified.

2. Nuclear Criticality Safety (Inspection Procedure 88015)

a. Inspection Scope and Observations

Criticality Analysis

The inspectors reviewed selected Criticality Safety Analyses (CSAs) and associated assumptions and calculations to verify compliance 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 NCS parameters.

Specifically, the inspectors reviewed the CSAs to determine whether they were properly reviewed, and verify approved CSAs were in place and of sufficient detail and clarity to permit independent review. The inspectors reviewed selected CSAs to determine whether calculations were performed within the validated area of applicability and consistent with the validation report. The CSAs were selected based on factors such as risk-significance, if they were new or revised, the use of unusual control methods, and operating history. The CSAs reviewed included CSA-403.00.100, CSA-1210.03, CSA-1010.97, and CSA Primary and Secondary high efficiency particulate air (HEPA) Filter Systems. The filtration systems are used in process off-gas systems and scrubbers for various processes within the facility and systems that generate uranium particulate during operation. In addition, the CSAs listed in Section 4 of the Attachment were also reviewed.

The inspectors reviewed the licensee's generation of accident sequences to verify whether the CSAs systematically identified normal and credible abnormal conditions for the analysis of process upsets in accordance with the commitments and methodologies in the license application. This effort included the review of accident sequences that the licensee determined to be not credible in order 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. This review was conducted for the following CSAs: CSA-403.00.100, CSA-1210.03, CSA-1010.97, and CSA Primary and Secondary HEPA Filter Systems.

A specific focus of the review for the above CSAs was the licensee's assumptions on fissile material accumulation within their process off-gas systems, which included the ventilation ductwork, HEPA filter banks, and scrubber systems listed in the *Criticality Implementation* section of the report. The inspectors reviewed the licensee's assumptions/justifications within their CSAs for double contingency and credible accident scenarios, interviewed the appropriate process engineers on system operation/design, interviewed appropriate staff on historical amounts of fissile material accumulation found during inspections, and reviewed the most recent surveillance/maintenance inspections on the above systems.

The inspectors verified that no changes to the validation report have been made since the last NCS inspection.

Criticality Implementation

The inspectors performed walk-downs of the DSR furnace, Process Off-Gas systems, FMO Scrubber, and FMO-X Scrubber systems with a focus on each systems' scrubber and ventilation systems to determine whether existing plant configuration and operations were covered by, and consistent with, the process description and safety basis in the CSA. The inspectors reviewed process and system descriptions, and setpoint analyses to verify that engineered controls established in the CSAs were included. The inspectors' review of controls focused on the inspections of process ductwork, Primary Scrubber Systems, and HEPA filter banks. The inspectors reviewed operating procedures and postings, to verify that selected administrative controls established in the CSAs were included. The inspectors interviewed operators and engineers to verify that administrative actions established in the CSAs were understood and implemented properly in the field.

The inspectors reviewed the ISA Summary and supporting ISA documentation to determine whether the controls identified in the ISA were supported by technical basis in the CSAs.

Criticality Operational Oversight

The inspectors reviewed NCS-related training records to determine whether operator training included instruction in criticality hazards and control methods, whether the licensee's established NCS-related operator training was consistent with commitments in the license application, and whether NCS staff was involved in the development of operator training. The inspectors interviewed operations staff to determine whether they were cognizant of NCS hazards and control methods related to their specific job function. The NCS-related training records reviewed included annual refresher training for operators.

The inspectors accompanied licensee NCS engineers on general walk-downs of the facility to determine whether NCS staff routinely inspected fissile material operations to confirm criticality requirements were satisfied. Additionally, the inspectors interviewed three NCS engineers and reviewed audit records documented since the last NCS inspection.

Criticality Programmatic Oversight

The inspectors reviewed the selected CSAs listed above to verify that they were performed in accordance with NCS program procedures and received appropriate independent review and approval. The inspectors conducted interviews and reviewed CAP entries to verify that audit findings were being identified, entered, and properly resolved. The entries reviewed included 2016 Nuclear Safety Audit of the Engineering Labs, Environmental Lab, and Chemet Lab.

The inspectors reviewed selected NCS-related CAP entries to verify whether anomalous conditions were identified and entered into the CAP, whether proposed corrective actions were sufficiently broad, whether they were prioritized on a schedule commensurate with their significance, and whether they were completed as scheduled and addressed the problem identified.

Criticality Incident Response and Corrective Action

The inspectors reviewed documentation to determine whether the Criticality Accident Alarm System (CAAS) was tested and maintained in accordance with license and regulatory requirements.

b. Conclusion

No violations of NRC requirements were identified.

B. Facility Support

1. Maintenance/Surveillance (Inspection Procedure 88025)

a. Inspection Scope and Observations

The inspectors interviewed managers, engineers, technicians, and operators to evaluate maintenance and surveillance program activities. The inspectors reviewed records and procedures, including six of the most recently completed Functional Test Instruction (FTI) records for IROFS 205-04, 205-05, 401-03, 401-05, 401-08, and 406-05, to verify that the licensee staff was adequately performing testing and surveillance as required to ensure the availability of safety related equipment. The inspectors also reviewed records to verify that selected safety related equipment were tested within the required periodicity, and that the required data was being properly documented. The inspectors focused on the UO_2 Press Feed Barrier, the DCP Homogenizer, the DSR Furnace Screener Barrier, and the Gadolinium Areas hydrogen detectors and verified that the selected IROFS were being properly maintained.

The inspectors verified through interviews that the licensee's work control program had provisions to ensure adequate pre-job planning and preparation of work orders to support maintenance and surveillance activities. The inspectors reviewed work orders for accuracy and to verify that selected test packages challenged and verified operability of IROFS and safety controls. The inspectors walked down the annual calibration and verification of the hydrogen detector alarms located in the Gadolinium sintering furnace area. The inspectors observed the instrument technicians performed the verification of the hydrogen detector alarms in accordance with the work order.

The inspectors verified that the selected work activities were conducted in accordance with license requirements and approved procedures, including CP-24-100, "Wilmington Maintenance Administration." The inspectors verified that post-maintenance testing and calibrations as specified by the license requirements were performed in accordance with the procedure prior to restoring equipment to operational status. Completed work orders were reviewed by a verifier as required prior to returning equipment to service.

The inspectors reviewed the licensee's CAP for issues relating to the maintenance and surveillance of IROFS and safety controls. The inspectors verified that the licensee entered issues into the CAP and adequate corrective actions were assigned, taken, and tracked in accordance with approved procedures. The inspectors verified, for the sample reviewed, that the licensee took effective corrective actions when a safety control was failed or degraded. The inspectors interviewed the maintenance manager, engineers, and maintenance workers regarding the use of the corrective action system to verify that licensee staff was familiar with its use and the licensee's procedures for the CAP.

b. Conclusion

No violations of NRC requirements were identified.

C. 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 September 15, 2016, with A. Hilton, Facility Manager by phone, and other members of the licensee's 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

Licensee personnel

Name	Title
J. Berger	Manager, Powder Production and Support Shop
R. Cable	Radiation Protection Engineer
K. Campbell	DCP Conversion Area Engineer
M. Conner	Manager, Fabrication
R. Crott	Manager, Environmental Health and Safety Programs
M. Dodds	Senior Criticality Safety Engineer
D. Eghbali	Senior Criticality Safety Engineer
B. Harlle	Radiation Protection Program Manager
M. Haney	Radiation Protection Supervisor
A. Hilton	Facility Manager
J. Howard	Radiation Safety Technician
P. Kontz	Radiation Safety Technician
P. Lachance	FMO Maintenance
U. Latham	Senior Administrative Specialist, Licensing
G. McKay	Radiation Safety Technician
S. Murray	Manager, Licensing
D. Nay	FMO Manufacturing Engineering Manager
S. O'Connor	Environmental Engineer, EHS
P. Ollis	Facility Licensing
L. Paulson	Senior Criticality Safety Engineer
T. Priest	Environmental Health and Safety
J. Rohner	Manager, Criticality Safety Program
R. Ruffin	Radiation Safety Technician
E. Saito	EHS and Nuclear Safety Manager

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened & Closed

701113/2016004-01	VIO	Inadequate Management Measures for the Dry Scrap Recovery Screener IROFS 301-05 (Paragraph A.1)

3. INSPECTION PROCEDURES USED

88015	Nuclear Criticality Safety
88020	Operational Safety
88025	Maintenance and Surveillance

4. DOCUMENTS REVIEWED

Records:
Criticality Safety Analysis for Rotary Slab Blender and Feed Hopper, dated January 1, 1995
CSA Primary and Secondary HEPA Filter Systems, Rev. 0
CSA-403.00.100, Sinter Test System, Rev.1, dated May 2016
CSA-1010.97, FMO and FMO-X Roof Scrubber, Rev. 2, dated October 26, 2007
CSA-702.00.200, Radwaste Appendices, Rev. 0, dated June 2016
CSA-702.00.100, Radwaste, Rev. 0, dated June 2016
CSA-501.00.100, DM-10 Vibromill Unit Analysis, Rev. 10
INTG CSA No. 1210.03, Criticality Safety Analysis – Dry Scrap Furnace Discharge Screener, Rev. 02, dated April 21, 1998
LS 2310.00.05, Detector Trip Test 2 out of 3 Functionality Log, dated June 9, 2016
LS 2310.00.05, CAAS Horn Test Log Route #1, dated March 15, 2016
NCS Audit Record, 2016 Nuclear Safety Audit – Engineering Labs, Environmental Lab, Chemet Lab, dated June 28, 2016
Nuclear Safety Release/Requirements #13.02.03, Rev. 07, dated July 28, 2008
Nuclear Safety Release/Requirements #05.06.02, Rev. 2, dated January 23, 2004
Special Survey (Dose Rate Survey of Scrubbers), dated August 31, 2016

Procedures:
OP 1210.00.100, Dry Scrap Recycle Furnace General Information, Rev. 0
OP 1210.00.206, Dry Scrap Recycle Furnace Operator Maintenance, Rev. 0
OP 1210.00.204, Dry Scrap Recycle Furnace Abnormal Operations, Rev. 0
OP 1210.00.203, Dry Scrap Recycle Furnace Shutdown and Cleanout, Rev. 0
OP 1210.00.300, Dry Scrap Recycle Furnace Process Information, Rev. 0
OP 1210.00.201, Dry Scrap Recycle Furnace Start up, Rev. 0
OP 1332.00.201, DCP Conversion Pre-starting, Rev. 6
OP 1332.00.204, DCP Conversion Normal Operations, Rev. 3
OP 1332.00.206, DCP Conversion Cold Shutdown, Rev. 4
OP 1332.00, DCP UF6 to UO2 Conversion, Rev. 59
WI-06-100-07, Develop Procedure Draft, Rev. 3.3
CP-06-100, Procedure Control Process, Rev. 16.1
OP 2310.00.300, CAAS – Operating, Maintenance, Testing, and Response Procedure Horn/Speaker Audibility Testing, Rev. 0, dated April 22, 2014
WI-27-105-25, HVAC Surveys to Detect Uranium Accumulation, Rev. 5, dated May 19, 2016

Condition Report Written as a Result of the Inspection:
CR 21452

Condition Reports Reviewed:
CR-19798, CR 20201, CR-20447, CR 21452

Other Documents:
Software Modification Plan [Dry Scrap Recovery GE FANUC Programmable Logic Controller (PLC)], System Name: DRYREC3, 8/19/2016, Change Request 22003, Updated PLC software adding permissive interlock to prevent ME-140 screener if discharge valve XV-150 is not open. Functional test following software revision: passed September 13, 2016
Drawing: P&ID P01.1336, Rev. 19, Hydrofluoric Acid Treatment Storage P&ID.
Drawing: P&ID 5009E96, Rev. 7

P&ID 5008E96, Revision 10, Fuels Manufacturing Integration Piping & Instrumentation Diagram, Dry Recycle Furnace
Dry Scrap Recycle Operator Qualification Card, Rev. 1, dated April 25, 2016
DCP Control Room Operator Qualification Card, Rev. 1, dated June 30, 2016
Audit, NQA-2015-10 Rev. 0, GNFA Manufacturing FMO/FCO
Audit, NQA-2016-06 Rev. 0, GNFA Manufacturing FMO/FCO
FMO Scrubber (CHMN0542) Map #502 East/West Side, dated May 25, 2016
FMO Scrubber (CHMN0542) Map #502 East/West Side, dated February 22, 2016
ISA Meeting Notes – Scrubbers, dated August 17, 2016
WI-27-105-F06, HVAC Monthly Survey Data Stats for GAD Ceramics on July 1, 2016 and August 4, 2016
WI-27-105-F06, HVAC Monthly Survey Data Stats for UO2 Ceramics on July 1, 2016 and August 4, 2016
WI-27-105-F06, HVAC Monthly Survey Data Stats for Dry Scrap Recycle Areas on July 1, 2016 and August 4, 2016