



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

EA 17-090

January 31, 2020

Mr. Brad Beard
Plant Leader
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. – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 70-1113/2019-005**

Dear Mr. Beard:

The Nuclear Regulatory Commission (NRC) conducted inspections during the fourth quarter of calendar year 2019 (October 1 – December 31, 2019), at the Global Nuclear Fuel-Americas, L.L.C. facility in Wilmington, NC. The purpose of these inspections was to determine whether activities authorized under the license in the areas of Safety Operations, Radiological Controls and Facility Support were conducted safely and in accordance with NRC requirements. The inspections consisted of examinations of procedures and representative records, observations of activities, and interviews with personnel. The enclosed report presents the results of these inspections. At the conclusion of these inspections, the inspectors discussed the findings with you and members of your staff at an exit meeting held in person on October 24, 2019 and via teleconference on November 8, 2019.

Based on the results of these inspections, the NRC has determined that no violations of more than minor significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the 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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning the inspections, please contact Leonard Pitts at 404-997-4708, or via email at Leonard.Pitts@nrc.gov.

Sincerely,

/RA/

Robert E. Williams Jr., Chief
Projects Branch 1
Division of Fuel Facility Inspection

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

Enclosure:
NRC Inspection Report 70-1113/2019-005
w/Attachment: Supplementary Information

cc w/ encl: Distribution via LISTSERV®

SUBJECT: GLOBAL NUCLEAR FUEL– AMERICAS, L.L.C – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 70-1113/2019-005 dated
January 31, 2020

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ATTACHED

OFFICE	RII:DFFI/PB1	RII:DFF/PB1I	RII:DFFI/PB1	RII:DFFI/PB1	RII:DFFI/PB1	RII:DFFI	RII:DRP/PB1
NAME	L. Pitts	M. Ruffin	J. Rivera	B. Adkins	R. Womack	E. Stamm	M. Toth
DATE	1/28/2020	1/28/2020	1/21/2020	1/27/2020	1/17/2020	1/21/2020	12/11/2019
E-MAIL	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
RII:DRP/PB1							
R. Williams							
1/31/2020							
YES NO							

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Inspection Report

Docket No.: 70-1113

License No.: SNM-1097

Report No.: 70-1113/2019-005

Enterprise Identifier: I-2019-005-0047

Licensee: Global Nuclear Fuel - Americas, LLC

Facility: Global Nuclear Fuel - Americas

Location: Wilmington, North Carolina 28402

Dates: October 1, 2019 to December 31, 2019

Inspectors: B. Adkins, Senior Fuel Facility Inspector (Section A.2, C.1)
L. Pitts, Senior Fuel Facility Inspector (Section C.1)
J. Rivera-Ortiz, Senior Fuel Facility Inspector (Section C.2)
M. Ruffin, Fuel Facility Inspector (Section D.1)
E. Stamm, Technical Assistant (Section A.1)
M. Toth, Senior Project Engineer (Section C.1)
R. Womack, Fuel Facility Inspector (Section B.1)

Approved by: R. Williams, Chief
Projects Branch 1
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Global Nuclear Fuel - Americas, LLC
Nuclear Regulatory Commission Integrated Inspection Report 70-1113/2019-005
October 1 – December 31, 2019

Nuclear Regulatory Commission regional inspectors conducted inspections during normal shifts in the areas of Safety Operations, Radiological Controls, and Facility Support. During the inspections, normal production activities were ongoing. These announced, routine inspections consisted of a selective examination of licensee activities accomplished by direct observation of safety-significant activities and equipment, walkdowns of the facility, interviews and discussions with licensee personnel, and a review of facility records and procedures. There were no violations of more than minor significance identified during these inspections.

Safety Operations

- In the area of Operational Safety, no violations of more than minor significance were identified. (Section A.1)
- In the area of Nuclear Criticality Safety, no violations of more than minor significance were identified. (Section A.2)

Radiological Controls

- In the area of Radiation Protection, no violations of more than minor significance were identified. (Section B.1)

Facility Support

- In the area of Evaluation of Exercises and Drills, no violations of more than minor significance were identified. (Section C.1)
- In the area of Plant Modifications, no violations of more than minor significance were identified. (Section C.2)

Other Areas

- (Closed) Confirmatory Order Section V, Item 7, “GNF-A shall expand its Difference of Professional Opinion process to include all technical safety matters related to GNF-A licensed activities.” (Section D.1)

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 (UO₂) powder, pellets, and light water reactor fuel bundles at its Wilmington, NC facility. The facility converts uranium hexafluoride (UF₆) to UO₂ using a Dry Conversion Process (DCP) and performs fuel fabrication operations. During the inspections, normal production activities at the facility were ongoing.

A. Safety Operations

1. Plant Operations (Inspection Procedure 88020)

a. Inspection Scope

The inspectors evaluated the operational safety of the facility to verify the licensee operated the plant safely and in accordance with Title 10 of the Code of Federal Regulations (CFR), Part 70; the license; and the license application. The inspectors interviewed engineers and reviewed records associated with the Dry Conversion Process (DCP) Powder Outlet (Node Group 204) and the Gad Press (Node Group 503).

The inspectors evaluated selected items relied on for safety (IROFS) and the management measures associated with each IROFS by performing field walkdowns and reviewing operating procedures, training documents, and functional test instructions, to verify they were present and capable of performing their intended safety functions. Additionally, the inspectors reviewed the Integrated Safety Analysis (ISA) Summary and conducted walkdowns to verify the physical presence of active engineered safety controls, evaluate the capability and operability of safety controls, and verify that potential accident scenarios were covered.

The inspectors evaluated the licensee's administrative controls to verify they were implemented and adequately communicated to the licensee personnel tasked with implementing those controls. The inspectors reviewed the DCP Powder Outlet area operating procedures and the Fabrication Area Gad Press operating procedures to verify required actions for the associated IROFS, as identified in the ISA Summary, had been correctly transcribed into written operating procedures. The inspectors evaluated these procedures with respect to operating limits and operator responses for upset conditions to verify the limits needed to assure safety were adequately described in the procedures.

The inspectors interviewed operators and technicians in the field to verify operators and technicians were adequately implementing the required safety controls. For the selected safety controls, the inspectors reviewed documents to verify the licensee conducted periodic surveillances as described in the ISA Summary.

The inspectors reviewed the licensee's corrective action program (CAP) entries for the past twelve months to verify deviations from procedures and unforeseen process changes affecting nuclear criticality, chemical, radiological, or fire safety were documented and investigated promptly.

b. Conclusion

No violations of more than minor significance were identified.

2. Nuclear Criticality Safety (Inspection Procedure 88015)

a. Inspection Scope

Criticality Analysis

The inspectors evaluated selected aspects of the licensee's Nuclear Criticality Safety (NCS) program to verify compliance with selected portions of 10 CFR Part 70, including Subpart H and Appendix A; Chapter 5, "Nuclear Criticality Safety," of the facility's license application; the licensee's NCS manual; and applicable procedures. The inspectors reviewed selected criticality safety analyses (CSAs) and associated assumptions and calculations to verify they were consistent with the commitments in the license application, including the Double Contingency Principle and assurance of subcriticality under normal and credible abnormal conditions. The inspectors reviewed the accident scenarios outlined in the CSAs to determine whether process upsets analyzed in the CSAs remained highly unlikely with the application of IROFS. The inspectors also reviewed the protection and prevention scores assigned to initiating events, active engineered IROFS, passive IROFS, and administrative controls documented for the respective scenarios in the ISA Summary to verify the licensee used the approved methodology outlined in their license application and procedures.

The CSAs reviewed were associated with the GAD Press (Node Group 503) and are listed in supplementary information attached to this inspection report. Additionally, the inspectors reviewed the validation report applicable to the selected CSAs to verify changes to the report, if any, were in compliance with the validation techniques described in Chapter 5 of the license application.

Criticality Implementation

The inspectors performed walkdowns of the GAD Press to determine whether existing plant configuration and operations were covered by, and consistent with, the process descriptions and safety bases in the selected CSAs. The inspectors reviewed process and system descriptions, specifications, drawings, and vendor manuals to verify engineered controls established in the CSAs were included and being implemented as specified. The inspectors reviewed engineered controls in place to control mass, geometry, spacing, and moderation, which included the free draining press base and oil catch pan, pellet press area safe geometry, pellet press counter, press hood level sensors, and process equipment barrier. The inspectors reviewed operating procedures and postings to verify selected administrative controls established in the CSAs were also included. The administrative controls reviewed included routine inspection of the press base for moderator intrusion, verification of proper reassembly of the press following retooling, and take-off table storage control to prevent significant moderator ingress into boats on the take-off table. The inspectors interviewed operators and engineers to verify administrative actions established in the CSAs were understood and implemented as specified.

Criticality Operational Oversight

The inspectors reviewed three NCS audit reports to determine whether NCS staff routinely assessed field compliance with established NCS controls, interacted with operators, and promptly entered issues identified during the walkdown into the CAP. The audits reviewed covered bundle assembly, GAD mezzanine, radwaste decontamination, and the scrap press areas. Additionally, the inspectors interviewed NCS management and reviewed audit procedures and schedules to verify qualified NCS engineers adequately prepared for and performed these walkthroughs such that the complete set of fissile material processing areas were assessed within two years as outlined in procedure WI-18-104-02, "Internal Nuclear Safety Audits."

The inspectors reviewed the applied management measures for selected NCS IROFS to determine whether the management measures were sufficient to ensure the availability and reliability of those controls. The management measures and IROFS reviewed were selected from the CSAs listed in the supplementary information attached to this report and included procedures, training, preventive maintenance surveillances, inspection, calibration, and functional testing records, as applicable.

Criticality Programmatic Oversight

The inspectors reviewed new and revised NCS program procedures to determine whether the licensee developed the NCS program in accordance with the license requirements. The procedures reviewed included WI-18-104-02, "Internal Nuclear Safety Audits," Revision 2; WI-27-105-25, "HVAC Surveys to Detect Uranium Accumulation," Revision 7; WI-28-114-04, "Nuclear Safety Advisor," Revision 4, and WI-28-114-09, "Field Monitoring Team Management," Revision 2.

The inspectors reviewed select CSAs to verify they were performed in accordance with NCS program procedures and received an appropriate independent technical review from a senior criticality engineer.

The inspectors reviewed NCS training lesson plans and exam materials to verify that personnel involved in the handling of special nuclear material were trained in accordance with Section 2.3.1, "Nuclear Safety Training," of the license application.

The inspectors reviewed CSAs and other NCS-related documents to verify that engineers performing NCS analyses and conducting audits were qualified as required by Section 5.3.2.1, "Training and Qualification of NCS Staff," of the license application. The inspectors interviewed three new NCS engineers and reviewed their associated qualification cards to determine if the training and qualification requirements met the requirements of Section 2.2.1.5 of the license application and the internal procedure that governed the NCS engineer qualification program.

Criticality Incident Response and Corrective Action

The inspectors reviewed various aspects of the criticality accident alarm system (CAAS) to determine whether the CAAS features met the applicable regulatory requirements in 10 CFR 70.24, and the license commitments in Chapter 5 of the license application. The inspectors reviewed records to verify CAAS detector operability was maintained, detectors were calibrated, components including the speakers and warning lights were functionally tested, alarm setpoints were set to

promptly actuate upon detecting the minimum accident of concern, and access to alarm setpoints was strictly controlled as required. The records reviewed are included in the supplementary information attached to this inspection report. The inspectors also reviewed training materials and records to verify personnel were trained in recognizing the CAAS evacuation signal as required by Section 5.3.2.5 of the license application.

The inspectors reviewed selected NCS-related CAP entries associated with the GAD pellet press to verify anomalous conditions were promptly identified and entered into the CAP, they received the required level of investigation, and they were closed out consistent with license commitments and procedures as required by CP-16-108, "Corrective Action Program." The inspectors reviewed the associated corrective actions to verify they were sufficiently broad, prioritized on a schedule commensurate with their significance, completed as scheduled, and appropriate to correct the condition, when required, consistent with program procedures. The inspectors' review of CAP entries also assessed whether performance requirements were still met for degraded and failed IROFS the licensee determined were not reportable plant conditions to the NRC under Appendix A of 10 CFR Part 70. The CAP entries reviewed are listed in supplementary information attached to this inspection report.

b. Conclusion

No Violations of more than minor significance were identified.

B. Radiological Controls

1. Radiation Protection (Inspection Procedure 88030)

a. Inspection Scope

The inspectors evaluated aspects of the licensee's Radiation Protection program to verify compliance with portions of 10 CFR 20, the facility's license application, and applicable procedures.

The inspectors reviewed procedures and performed walkdowns of plant areas to verify the licensee used engineering controls to achieve occupational doses as low as reasonably achievable (ALARA) as required by 10 CFR 20.1101(b) and Section 4.1 of the license application. The inspectors also reviewed procedural changes and air sampling records and calculations to verify the licensee used process controls to limit the concentration of airborne radioactive material in accordance with 10 CFR 20.1701 and Sections 4.3 and 4.4 of the license application. The inspectors reviewed licensee records and third-party dose evaluation reports to verify the bioassay program was in compliance with Section 4.7 of the license application. The inspectors interviewed staff and reviewed calibrations of both field and analytical equipment used to evaluate internal exposures to verify the internal dose was monitored in accordance with 10 CFR 20.1502(b) and subsequent results were determined in accordance with 10 CFR 20.1204.

The inspectors conducted walkdowns of plant areas, reviewed air sampling records, and interviewed staff to verify the air sampling program complied with license requirements for internal dose calculations. The inspectors reviewed procedures to verify the licensee addressed solubility class, mixtures, and aerosol size of potential

radioactive airborne contamination. The inspectors toured plant areas and observed postings to verify the licensee maintained a program to identify and post areas as Airborne Radioactivity Areas per 10 CFR 20.1003 and 20.1902(d), respectively. The inspectors reviewed procedural changes to verify the respiratory protection program was in compliance with Section 4.10 of the license application and 10 CFR 20.1703.

The inspectors reviewed the dose to workers for 2018 to verify that the dose results were less than the limits in 10 CFR 20.1201. The inspectors reviewed the 2018 annual ALARA Report to verify the ALARA program complied with 10 CFR 20.1101(b) and the requirements in Section 4.1 of the licensee application. The inspectors reviewed radiation safety committee meeting presentations, minutes, and attendance sheets to verify the ALARA Committee met the objectives of Section 2.4.2 of the license application. The inspectors reviewed procedures and interviewed radiation protection monitors to verify the radiation protection staff remained independent of production and retained authority to implement ALARA policies as required by Section 2.2.1.7 of the license application and 10 CFR 20.1101(a).

The inspectors reviewed condition reports, performed plant area walkdowns, and interviewed staff to verify whether the licensee implemented a program to evaluate safety-significant events in the area of radiation protection and met the requirements of Section 5.3.2.6 of the license application. The inspectors reviewed selected CAP entries to verify the licensee implemented and documented corrective actions based on the frequency and magnitudes of events as described in Section 4.4 of the license application. The inspectors also evaluated selected events to verify the licensee complied with the reporting requirements of 10 CFR Part 20, Part 70, and Part 71.

b. Conclusion

No violations of more than minor significance were identified.

C. Facility Support

1. Evaluation of Exercises and Drills (Inspection Procedure 88051)

a. Inspection Scope

The inspectors observed and evaluated the licensee's biennial exercise conducted on October 30, 2019, to verify the licensee had an effective emergency response program. The exercise scenario consisted of a credible unisolable breach of a DCP Cold Trap in conjunction with the loss of the associated scrubber. The loss of the scrubber allowed the plume of the simulated release to leave the site boundary facilitating the Site Area Emergency declaration. Additionally, one individual was simulated as injured while evacuating the area, requiring Emergency Response personnel to locate the injured person and evacuate them for transfer to an ambulance and then to a local hospital.

The inspectors reviewed the emergency drill scenario package and discussed the exercise objectives with licensee personnel prior to the exercise. The inspectors conducted walkdowns of the plant to assess the effectiveness of visual aids used in the drill and to verify the licensee had not pre-staged equipment in anticipation of the exercise.

The inspectors observed the activation of the Emergency Control Center (ECC) and the Emergency Organization (EO) to verify all required positions were fully staffed and necessary personnel were dispatched to corresponding plant areas in accordance with the Emergency Plan. To verify compliance with the Emergency Plan's classification requirements, the inspectors observed the EO assess plant conditions and classify the event as an Alert first, and then as a Site Area Emergency once the scenario progressed. Following these classifications, the inspectors observed ECC activities to verify the initial offsite notifications were made within the specified time period in the Emergency Plan and contained the required information. The inspectors observed the Emergency Director (ED) lead activities in the ECC to verify command and control of the EO was maintained as required in the Emergency Plan.

The inspectors reviewed the onsite communications generated by the ECC and observed the subsequent onsite plant personnel actions to verify consistent and effective implementation of protective action recommendations. The inspectors observed licensee staff initiate shelter-in-place protective actions and accountability musters in accordance with approved procedures.

The inspectors observed the press release process to verify they were reviewed by the ED prior to issuance and were in accordance with the Emergency Plan.

The inspectors reviewed the environmental assessments conducted by the licensee using the applicable software to verify the ED utilized the environmental monitoring results during the assessment of the accident scenario.

The inspectors observed members of the licensee's emergency response team (ERT) assemble at the designated assembly area and the arrival of the off-site emergency responders including fire, Hazardous Material (HAZMAT), and emergency medical teams. The inspectors observed the ERT perform search and rescue operations and an assessment of the affected area. The inspectors observed the Incident Commander's actions to verify that command and control of the emergency response teams and off-site emergency responders were maintained and coordinated.

The inspectors observed the staff critiques following the emergency exercise to verify the critiques were effective at identifying areas needing improvement and lessons learned. The licensee's critiques were captured in condition reports 32989, 32990, 32992, 32993, and 32994 for evaluation and resolution. The licensee later consolidated these condition reports into one higher level condition report 33305.

b. Conclusion

No violations of more than minor significance were identified.

2. Permanent Plant Modifications – Annual Review (Inspection Procedure 88070)

a. Inspection Scope

The inspectors reviewed the licensee's configuration management program to determine whether the licensee established a system to evaluate, implement, and track changes to the facility and activities of personnel in accordance with 10 CFR 70.72. The inspectors' review included program procedures and interviews with licensee supervisors and staff to verify the program was implemented in accordance with the applicable regulatory requirements.

The inspectors reviewed a sample of plant changes based on the list of change requests (CRs) submitted to the NRC on January 29, 2019 (ADAMS Accession Number ML19029A129). The plant changes selected for review were:

- CR 26131 – Changes to the ISA Summary, Section 5.3, "Dry Conversion Process"
- CR 25087 – Changes to the ISA Summary, Section 5.9, "Dry Conversion Process – Miscellaneous"
- CR 26700 – Changes to the ISA Summary, Section 5.19, "Radwaste"
- CR 25687 – Changes to the ISA Summary, Section 5.22, "Auxiliary Operations"
- CR 26265 – Change to Gadolinium Press Display

For the selected plant changes, the inspectors reviewed the configuration management program documents to verify they contained the following: the technical basis for the change, the impact of the change on safety and health or on the control of licensed material, modifications to operating procedures and necessary training prior to operations, authorization requirements for the change, and the impacts of the change to the ISA or other safety program information developed in accordance with 10 CFR 70.62. The inspectors' review of program documents also addressed whether the licensee applied the management measures applicable to Configuration Management as described in Chapter 11 of the license application.

The inspectors performed walkdowns of the process areas associated with the selected plant changes and interviewed plant staff directly involved with the changes to verify the modifications were consistent with the approved configuration management program documents. The inspectors also reviewed the change requests to verify they identified the documents affected by each plant change and that the affected documents were updated promptly as required by 10 CFR 70.72(e).

The inspectors reviewed the licensee's system to maintain records of facility changes to verify records were maintained in accordance with 10 CFR 70.72(f). The inspectors also reviewed select facility changes that the licensee determined did not require NRC approval prior to implementation to verify the licensee maintained records and a written evaluation providing the bases for the determination. The inspectors also reviewed a sample of recent changes to the license application as documented in the "License Renewal Application Chapter Updates," dated October 30, 2018 (ADAMS ML18299A102) to verify changes to license commitments were evaluated in accordance with the conditions of the license and that NRC prior approval was requested when necessary.

The configuration management records reviewed by the inspectors are listed in the supplementary information attached to this inspection report.

The change requests selected for review did not involve new facilities or processes requiring a license amendment, therefore the inspectors' review did not include whether the licensee addressed the baseline design criteria and concept of defense-in-depth stipulated in 10 CFR 70.64.

b. Conclusion

No violations of more than minor significance were identified.

D. Other Areas

1. Review of Confirmatory Order Section V Item 7 (Inspection Procedure 92703)

a. Inspection Scope

The inspectors reviewed the licensee's actions regarding CO Section V, Item 7 (ML17348A144), which required the licensee to expand its Difference of Professional Opinion process to include all technical safety matters related to licensed activities. The licensee implemented this expansion to their Difference of Professional Opinion process by updating the procedure CP-03-100-G340, "Differing Professional Opinion Resolution Process" to include issues related to radiological protection, criticality safety, and the safe operation of their facility. The inspectors reviewed updates to procedure CP-03-100-G340 and compared it to licensed activities to verify all areas of licensed technical safety matters were encompassed in the scope of use for the procedure. The inspectors interviewed licensing personnel to verify staff members had been made aware that technical safety matters related to licensed activities could be addressed within the Difference of Professional Opinion process.

b. Conclusion

The inspectors determined the licensee expanded its Difference of Professional Opinion process to include all technical safety matters related to licensed activities. Based on a review of the "Differing Professional Opinion Resolution Process" procedure and discussions with licensee staff concerning the program expansion, the NRC concludes that GNF-A has met the requirements as stated in the CO, Section V, Item 7. This item is considered closed.

E. Exit Meeting

The inspection scope and results were presented to Brad Beard, GNF-A Plant Leader, and other members of the licensee's staff on October 24, 2019 and November 8, 2019. Proprietary information was discussed but not included in the report.

SUPPLEMENTARY INFORMATION

1. KEY POINTS OF CONTACT

Licensee Personnel

<u>Name</u>	<u>Title</u>
M. Conner	Manager, Fabrication
J. Degolyer	Integrated Safety Analysis
D. Eghbali	Senior Criticality Safety Engineer
B. Henderson	Radiation Protection Program Manager
A. Lang	Integrated Safety Analysis
S. Murray	Facility Licensing Manager
P. Ollis	Facility Licensing
L. Paulson	Program Manager, Nuclear Criticality Safety
C. Priest	Radiation Protection Supervisor
J. Rohner	Fuels Environment, Health, and Safety Manager
P. Rose	Powder Production & Support Manager

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

CO Section V, Item 7	CO	GNF-A shall install expand its Difference of Professional Opinion process to include all technical safety matters related to GNF-A licensed activities. (Section D.1)
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3. INSPECTION PROCEDURES USED

88015	Nuclear Criticality Safety
88020	Operational Safety
88030	Radiation Protection (Appendix B)
88051	Evaluation of Exercises and Drills
88070	Plant Modifications (Annual)
92703	Follow-up of Confirmatory Action Letters or Orders

4. DOCUMENTS REVIEWED

Records:

2018 Annual ALARA Review
2Q19 Nuclear Criticality Safety Audit – Bundle Assembly, Shipping, Tubing/Component Storage, Shipping Box Factory, Shipping Pad 12, and Shipping Refurbishment, 6/29/19
3Q19 Nuclear Criticality Safety Audit – Radwaste, Decon, SPF, DVRF, URU and Chemical Area, 9/28/19
3Q Nuclear Criticality Safety Audit – Nodes 401-503, 405-504, 406-505, 10/1/19
CALC-202-001, Severity Levels of ISA Chemical and Radiological Events for DCP Conversion, Rev. 4

CALC-900-006, SNM Powder Spill Frequency, Rev. 4
 CAP Database, Condition Reports Affecting IROFS in Previous 12 Months – October 2019
 CMtrac Audit Report – GAD MRA Vibromill Can Locking Ring Requirement Change – CR 25687, May 24, 2018
 CMtrac Audit Report – GAD Press Maple Display: 26265, August 1, 2018
 CMtrac Audit Report – QRA-202: Conversion Chemical Release Scenarios for Worker and Public: 26131, April 19, 2018
 CMtrac Audit Report – RW ISA Update: 26700, November 14, 2018
 CMtrac Audit Report – Update ISA for DCP Miscellaneous (Node 208) CR 25087, December 17, 2018
 CR 18474, Verification of the Poison Content in annular and Slab Tank Neutron Absorbing Panels Excluding Physical Measurements, September 2015
 CSA 208.00.100, Criticality Safety Analysis – DCP MRA Facility and Powder Containers, Rev. 1, July 2018
 CSA 503.061117, Criticality Safety Analysis, “West GAD Interaction GEMER Model,” Rev. 9
 CSA 1020.00, Criticality Safety Analysis “Rotary Press Unit Analysis,” Rev. 6
 CSA-702.00.100, Radwaste System, Rev. 4
 FTI 1070.35-F1, Mass Control at Feed Tube, May 1, 2019
 FTI 1070.35-F10, GAD Turntable Overflow Sensor, September 20, 2019
 FTI 1070.35-F11, GAD Operator Activity Sensor, September 20, 2019
 FTI 1070.35-F12, GAD Heat Detector Sensor, February 27, 2019
 FTI 1070.35-F2, Mass Control for Lower Mass Hood, November 28, 2018
 FTI 1070.35-F3, Failsafe Switch on GD2O2 Shop Rotary Press, April 29, 2019
 FTI 1070.35-F4, Mass Control at GD2O2 Rotary Press, January 21, 2019
 FTI 1070.35-F5, Mass Control at Mass Photo-Sensor, February 15, 2019
 FTI 1070.35-F6, GAD Powered Conveyor, August 19, 2019
 FTI 1070.35-F7, GAD Handling System Storage Conveyor, December 12, 2018
 FTI 1070.35-F9, Test FBS-SNM and FBS-MMS Controls, May 28, 2019
 FTI 1070.47-F1, Pellet Grinder System, May 20, 2019
 FTI 1070.47-F2, Pellet Grinder Stops and Timed Blowback, May 20, 2019
 FTI 204-01A, Kiln Hatch N2 Purge Pressure Alarm PT#2115, November 15, 2018
 FTI 204-01B, Kiln Hatch Valve Sequence XV#1915, XV#1916, November 15, 2018
 FTI 204-02, Cooling Hopper Moisture Detection System, November 19, 2018
 Integrated Safety Analysis Summary, Rev. 22
 IROFS Modification Assessment Form – CR 25687, November 20, 2017
 IROFS Verification: IROFS 702-07 Accumulator Tank – Safe Geometry (PEC), September 2019
 IROFS Verification: IROFS 702-07 Accumulator Tank – Safe Geometry (PEC), September 2018
 IROFS Verification: IROFS 702-07 Accumulator Tank – Safe Geometry (PEC), September 2017
 IROFS Verification: IROFS 702-07 Accumulator Tank – Safe Geometry (PEC), September 2016
 IROFS Verification: IROFS 702-07 Accumulator Tank – Safe Geometry (PEC), August 2013
 Submittal of 2019 Exercise Objectives and Scenario Detail, July 11, 2019
 ISA Change Report 25087, May 18, 2018
 ISA Change Report 26131, March 27, 2018
 ISA Review Change Evaluation Form – Change Evaluation Form CR 25087, September 10, 2018
 ISA Review Change Evaluation Form – Change Evaluation Form CR 25687, November 27, 2017

ISA Review Change Evaluation Form – CR 26131, April 3, 2018
 ISA Review Change Evaluation Form – CR 26131, November 5, 2018
 ISA Review Change Evaluation Form – CR 26265, April 18, 2018
 LS 2310.00.05, CAAS Horn Test Log, 11/29/18
 LS 2310.00.06, Detector Functionality Test Log, 11/13/18
 LS 2310.00.07, Detector Trip Test 2 Out of 3 Functionality Log, 8/19/18
 NOS-2018-19, 2018 Radiation Protection Annual Assessment
 NOS-2019-26, 2019 Radiation Protection Triennial Assessment
 NSR/R # 05.02.41, Nuclear Safety Release/Requirements, 9/18/13
 PHA-208, ISA Reference Report for the DCP – Miscellaneous Node Group, Rev. 4
 QRA-202 Update for CR 14534, October 22, 2019
 QRA-202, Quantitative Risk Assessment – DCP Conversion, Rev. 19
 QRA-208, Quantitative Risk Assessment – DCP Miscellaneous, Rev. 8
 QRA 401-503, Quantitative Risk Assessment - Fabrication – Press, Rev. 17
 QRA-702/703, Quantitative Risk Assessment – Radwaste/Waste Treatment, Rev. 8
 QRA-801/802, Quantitative Risk Assessment – Auxiliary Operations, Rev. 12
 Criticality Safety Engineer Qualification Card, Rev. 1, 10/10/19
 Radiation Worker Training Criticality Safety, October 2019
 Radiation Worker Training: Criticality Safety Level 2 Exam (A) & (B)
 TD-204-01, Kiln Hatch & Nitrogen Purge Pressure, Rev. 1
 TD-204-02, Cooling Hopper Moisture Detection System, Rev. 2
 TD-204-03, Favorable Geometry Hybrid Container, Rev. 0
 TD-503-01, Free Draining Press Base and Press Oil Catch Pan, Rev. 0
 TD-503-02, Routine Inspections of Press Base, Rev. 3
 TD-503-03, Pellet Press Area - Safe Geometry, Rev. 0
 TD-503-04, Retooling Pellet Verification, Rev. 1
 TD-503-05, Process Equipment Barrier - Pellet Press, Rev. 0
 TD-503-06, Press Pellet Counter, Rev. 2
 TD-503-07, Press Hood Level Sensors, Rev. 1
 TD-503-08, Process Equipment Barrier - Press Conveyor, Rev. 0
 TD-503-09, Take-Off Table Storage Control, Rev. 0
 TD-505-01, Process Equipment Barrier - Grinder, Rev. 1
 TD-505-03, Grinder Equipment - Safe Geometry, Rev. 3
 WI-06-100-22, CAA Operating Procedures, Rev. 0.3
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated September 6, 2018
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated October 4, 2018
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated November 1, 2018
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated December 6, 2018
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated January 3, 2019
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated March 7, 2019
 WI-27-105-05-F02, GEH/GNF-A/GLE Radiation Safety Committee Meeting Minutes, dated April 4, 2019
 WO 838149, PIP Tone Test Issue 5-SPK-2 Believe Yellow, 11/21/18
 WO 952926, CAAS Main Panel Battery Readings, 7/8/19

Procedures:

CP-06-100, Document Control Process, Rev. 22.2
CP-06-120, Control of FMO Training Documents, Rev. 1.0
CP-06-216, Functional Test Instructions, Rev. 1.1
CP-18-104, EHS Regulatory Compliance Audits, Rev. 3
CP-20-100, Conduct of Training, Rev. 5.0
CP-20-103, Nuclear Safety Training, Rev. 2.1
CP-27-108-F02, Third Quarter Fire Safety Audit-2019, completed 9/26/19
CP-27-105, Radiation Protection Program, Rev 6.0
CP-27-114, Integrated Safety Analysis, Rev. 10.0
OP 202.00.100, DCP Conversion – General Information, Rev. 2
OP 202.00.201, DCP Conversion – Pre-Startup, Rev. 2
OP 202.00.207, DCP Conversion – Abnormal Operations, Rev. 0
OP 202.00.208, DCP Conversion – Alarm Response & Emergency Operations, Rev. 2
OP 204.00.100, DCP Powder Outlet - General Information, Rev. 1
OP 204.00.202, DCP Powder Outlet - Normal Operations, Rev. 00
OP 1070.35.100, GAD Shop Rotary Press - General Information, Rev. 00
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16-106-02, Configuration Management Program – Nuclear Manufacturing Operations,
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WI-18-104-02, Internal Nuclear Safety Audits, Rev. 4
WI-25-102-01, NRC Communications Protocol, Rev. 6.0
WI-27-105-06, Use of Portable Smear Counters, Rev. 3.0
WI-27-105-08, Contamination Measurement and Control, Rev 6.0
WI-27-105-11, External Dosimetry Program, Rev 3.0
WI-27-105-12-01, Personal Decontamination and Dose Assessment at FMO, Rev 3.0
WI-27-105-13, Radiation Work Permits at FMO, Rev 5.1
WI-27-105-16, Respiratory Protection Program, Rev 4.0
WI-27-105-17, Internal Dose Assessment, Rev 4.0
WI-27-105-25, HVAC Surveys to Detect Uranium Accumulation, Rev. 7
WI-28-114-04, Nuclear Safety Advisor, Rev. 0
WI-28-114-09, Field Monitoring Team Management, Rev. 2

Work Orders:

WO 837754, Hatch valves need adjusted, December 10, 2018
WO 839023, Lower Hatch Valve XV12916 Alarming When Cycling, November 17, 2018
WO 862436, Bottom Hatch Valve Not Cycling on Line #3 Conversion, January 10, 2019
WO 905751, Tank Nozzle Inspection, April 23, 2019
WO 905752, Tank Nozzle Inspection, April 23, 2019

Condition Reports Reviewed:

CR 28419, April 12, 2018
CR 28972, October 16, 2018
CR 29830, October 12, 2018
CR 29880, October 16, 2018
CR 29953, October 30, 2018
CR 29962, October 30, 2018
CR 30076, November 13, 2018
CR 30103, November 15, 2018
CR 30125, November 21, 2018
CR 30427, January 11, 2019
CR 30589, February 2, 2019

CR 30867, March 5, 2019
CR 32771, October 9, 2019
CR 32898, October 22, 2019
CR 32904, October 23, 2019