



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

October 25, 2019

EN 54273

Dr. Ronald J. Land
Site Manager
Framatome Inc.
2101 Horn Rapids Road
Richland, WA 99354-0130

SUBJECT: FRAMATOME INC. – U. S. NUCLEAR REGULATORY COMMISSION
INTEGRATED INSPECTION REPORT 70-1257/2019-004

Dear Dr. Land:

This letter refers to the inspections conducted July 1 through September 30, 2019, at the Framatome Inc., facility in Richland, Washington. The purpose of these inspections was to perform a routine review in the performance area of facility support. The enclosed report presents the results of the inspection. At the conclusion of the inspection, the findings were discussed with members of your staff at an exit meeting held on August 9, 2019.

The inspections examined activities conducted under your license as they relate to public health and safety, the common defense and security, and compliance with the Commission's rules and regulations as well as the conditions of your license. Within these areas, the inspections consisted of selected examinations of procedures and representative records, observations of activities, and interviews with personnel.

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

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and its 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 Web site at <http://www.nrc.gov/reading-rm/adams.html>.

R. Land

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If you have any questions, please contact Richard Gibson of my staff at 404-997-4718.

Sincerely,

/RA/

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

Docket No. 70-1257
License No. SNM-1227

Enclosure:
NRC Inspection Report 70-1257/2019-004
w/Attachment: Supplemental Information

cc: (See page 3)

cc:

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SUBJECT: FRAMATOME INC. – NUCLEAR REGULATORY COMMISSION
INTEGRATED INSPECTION REPORT 70-1257/2019-004 dated
October 25, 2019

DISTRIBUTION:

E. Michel, RII
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ADAMS: ☒ Yes **ACCESSION NUMBER: MLXX** ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI		
NAME	BAdkins	EStamm	DAnderson	GGoff	EMichel		
DATE	08/19/2019	08/19/2019	08/19/2019	08/16/2019	10/25 /2019		

R. Land

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**U. S. NUCLEAR REGULATORY COMMISSION
REGION II**

Docket No.: 70-1257

License No.: SNM-1227

Report No.: 70-1257/2019-004

EPID No.: I-2019-004-0072

Licensee: Framatome Inc.

Facility: Richland Facility

Location: Richland, Washington 99354

Dates: July 1 through September 30, 2019

Inspectors: B. Adkins, Senior Fuel Facility Project Inspector (A.2)
D. Anderson, Fuel Facility Project Inspector (A.2)
G. Goff, Fuel Facility Project Inspector (A.1)
E. Stamm, Technical Assistant for DFFI (A.2)

Approved by: E. Michel, Chief
Projects Branch 2
Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

FRAMATOME INC.
NRC Integrated Inspection Report 70-1257/2019-004
July 1 through September 30, 2019

An inspection was conducted by regional inspectors during normal shifts in the performance areas of facility support. The inspectors performed a selective examination of licensee 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.

Facility Support

- No violations of more than minor significance were identified related to Maintenance and Surveillance of Safety Systems. (Paragraph A.1)
- No violations of more than minor significance were identified related to Plant Modifications (Triennial). (Paragraph A.2)

Attachment:

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

REPORT DETAILS

Summary of Plant Status

The Framatome facility converts uranium hexafluoride (UF₆) into uranium dioxide (UO₂) for the fabrication of low-enriched fuel assemblies used in commercial light water reactors. During the inspection period, normal production activities were ongoing.

A. Facility Support

1. Maintenance and Surveillance of Safety Systems (Inspection Procedure 88025)

a. Inspection Scope

The inspectors performed a maintenance and surveillance (M/S) inspection to verify:

- Items relied on for safety (IROFS) and other safety controls were adequately maintained to assure availability and reliability to perform the intended safety function;
- compliance with the performance requirements of 10 CFR 70.61;
- corrective actions were taken when an IROFS or safety control failed or had degraded; and
- M/S activities were in accordance with license application (LA) requirements.

The inspectors observed daily maintenance meetings and plan-of-the-day (POD) meetings in which upcoming activities for the day and week were discussed.

The inspectors reviewed maintenance control procedures and standard operating procedures (see the attachment) to verify compliance with Chapter 11, "Management Measures," of the LA, Section 11.2. The inspectors observed that completed work packages were reviewed and approved by supervision prior to returning repaired/calibrated equipment to service.

The inspectors reviewed completed M/S packages to verify that M/S activities for IROFS and other safety controls complied with procedures (see "Documents Reviewed" section in the attachment). The inspectors also reviewed these records to verify that the activities tested the actual safety feature of the equipment.

The inspectors observed M/S activities on the following IROFS in the dry conversion facility (DCF):

- Hydrogen fluoride (HF) detectors/monitors and associated equipment;
- Thermocouples utilized on cylinders when in an autoclave; and
- Uranium monitors

The inspectors performed these field observations in order to determine compliance with work control procedures and packages (see "Documents Reviewed" section in the attachment), pre-job planning activities, functional testing (as applicable), and close-out

of the documentation. During one field observation the inspectors observed the licensee calibrate an IROFS followed by a functional test.

The inspectors reviewed records and calibration stickers to verify that the measuring and test equipment (M&TE) used to perform maintenance or calibrations was calibrated to National Institute of Standards and Technology (NIST)-traceable standards (or equivalent) as required by procedures (see "Documents Reviewed" section in the attachment).

The inspectors reviewed the most recent audit of the M/S program in order to verify compliance with the procedure (see "Documents Reviewed" section in the attachment) and Section 11.5 of the LA, including placing any observations or findings into the CAP.

The inspectors evaluated any personnel changes in the maintenance and surveillance program organization to verify compliance with position qualification requirements. The inspectors also reviewed and evaluated training records in the areas of instrument repetitive maintenance (IRM) and preventive maintenance (PM) to determine if training was in compliance with Section 11.3 of the LA.

b. Conclusion

No violations of more than minor significance were identified.

2. Plant Modifications (Triennial) (IP 88071)

a. Inspection Scope

The inspectors reviewed the licensee's configuration management program to determine whether the licensee established a program capable of evaluating, implementing, and tracking cumulative modifications to facility processes over the previous 25 years in accordance with Title 10 Code of Federal Regulations (10 CFR) 70.72 and LA Chapter 11, "Management Measures." The inspectors reviewed configuration management procedures and interviewed licensee senior managers, supervisors, and engineers to verify that the configuration management program was implemented in accordance with the requirements.

The inspectors reviewed a selection of plant modification design packages associated with the DCF to determine whether the licensee was implementing their plant modifications program as described in Section 11.1 of the LA, program procedures, and as required by 10 CFR 70.72 and 10 CFR 70.62(d). Specifically, the inspectors reviewed design changes associated with the DCF autoclaves, HF detectors, calciner, and uranium detectors to verify an adequate technical basis was established and the design assumptions were accurate for the modification as required by 10 CFR 70.72. The inspectors analyzed the design packages to ensure modifications made to interfacing or interconnecting systems did not adversely impact the operation of the Integrated Safety Analysis (ISA) or safety programs as required by 10 CFR 70.72(a)(6), or invalidate the natural phenomena hazards (NPH) structural analysis as required by 10 CFR 70.62(c). Inspectors also verified the program had adequate provisions in place to prevent plant modifications from degrading performance capabilities of IROFS or other safety controls that were part of the safety design basis.

The inspectors reviewed open/deferred/cancelled work requests, temporary modifications, operator workarounds, and interviewed operations and maintenance staff to determine if DCF components were operated outside of their normal configuration and whether there was any adverse impact to the overall system safety basis.

The inspectors verified that designs of plant modifications met the specific design criteria in applicable modification packages. Inspectors reviewed a sample of 10 CFR 70.72 evaluations to determine whether the licensee adequately evaluated the need for NRC pre-approval of select facility modifications. Inspectors also reviewed the training records of licensee personnel conducting the 10 CFR 70.72 evaluations to verify they were qualified to perform the evaluations in accordance with procedural requirements.

The inspectors reviewed a sample of modifications to verify the licensee properly classified minor and administrative modifications in accordance with LA Chapter 11, "Management Measures" and to verify the design basis, licensing basis, and performance capabilities of IROFS had not been degraded through the modifications.

The inspectors performed walk-downs and reviewed post-modification testing documentation to verify that the system condition and tested capability were consistent with the design basis and system functionality. The inspectors reviewed post-modification testing procedures and results to verify the acceptance criteria for system parameters was satisfied, no unintended system interactions occurred, and IROFS performed their intended safety functions as required by 10 CFR 70.62(d). The inspectors compared the field condition with the modification package to verify the following: the modification was implemented in accordance with the approved design documents in the modification package, the assumptions in the ISA were valid based on the actual configuration, and that operation of the modified process and its management measures could be accomplished as assumed in the ISA to ensure the IROFS were available when needed.

The inspectors reviewed instrumentation and controls (I&C) changes associated with the HF detectors and uranium monitors in the DCF to verify that the licensee had adequately established set points to prevent exceeding criticality or chemical safety exposure limits. The inspectors observed weekly surveillances of the uranium monitors and HF detectors to verify that the safety function of the IROFS was adequately tested. The inspectors reviewed records and calibration stickers to verify that the M&TE used in the surveillances was properly calibrated in accordance with licensee application requirements.

The inspectors reviewed applicable design basis documents to determine whether the licensing documents had been updated or were in the process of being updated promptly to reflect the modifications as required by 10 CFR 70.72(e).

The inspectors reviewed training records, performed walkdowns, and conducted interviews of operators to verify that operators received required training on both changes to the modified process and how to operate modified process equipment prior to resuming operations. Inspectors also compared the licensee's document retention practices to their policy to verify that the licensee-maintained records of facility modifications in accordance with 10 CFR 70.72(f).

The inspectors reviewed the most recent self-assessment of the licensee's configuration management program to verify that the licensee identified issues at an appropriate threshold and subsequently entered these issues into their CAP as per Section 11.5 of the LA. The inspectors also reviewed the licensee's CAP to verify that issues related to the preparation and installation of plant modifications were properly categorized and addressed by the licensee with adequate corrective actions in accordance with Section 11.6 of the LA

b. Conclusion

No violations of more than minor significance were identified.

B. Special Topics

1. (Opened and Closed) EN 54273, Unplanned Surface Contamination

a. Inspection Scope

This event notification (EN) was addressed in the Westinghouse Columbia Fuel Fabrication Facility quarterly inspection report 70-1151/2019-004 in which the EN was opened and closed. Please refer to this report for details.

Briefly, on September 12, 2019, Framatome submitted EN 54273 regarding surface contamination found on an incoming shipment of 30B UF₆ cylinders received from Westinghouse. The contamination levels exceeded the allowable limits for alpha and beta/gamma radiation. Framatome immediately notified the carrier and the NRC.

b. Conclusion

A Severity Level (SL) IV violation (VIO 70-1151/2019-004-01) was issued to Westinghouse for failure to make or cause to be made surveys for outgoing shipments of 30B cylinders.

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 August 9, 2019, to R. Land and staff. Proprietary information was discussed but not included in the report.

SUPPLEMENTAL INFORMATION

3. KEY POINTS OF CONTACT

<u>Name</u>	<u>Title</u>
K. Biddle	Instrument Technician
J. Bourgeois	Supervisor, Instrument Technicians and Electricians
L. Christian	SURF Process Engineer
W. Doane	Manager Nuclear Safety
C. Dreyer	Maintenance Manager
S. Dunfee	Industrial Hygienist
D. Hanson	Mechanical Engineer
J. Hutteball	Electrical/I&C Engineer
M. Hyder	Mechanical Engineer
A. Jordan	Lab Specialist
C. Kahambwe	Nuclear Criticality Safety Engineer
L. Kim	Production Support Manager
C. Krajcik	Senior Administrative Assistant
J. Kreitzberg	Licensing/NCS Engineer
K. Kunzweiler	Chemist
R. Land	Senior Vice President
A. Landon	Process Engineer for UCAR
P. Lee	SAP (Software Application Program) Coordinator for M/S
C. Manning	Manager Licensing & Compliance
J. Marshall	SURF Technical Program Manager
S. Powers	Plant Engineering, Technical Support & Maintenance Manager
G. Purser	Instrument Technician
T. Tate	Environmental, Health, Safety, and Licensing Manager
S. Wright	Industrial Safety Manager

4. LIST OF ITEMS OPENED, CLOSED, OR DISCUSSED

Open/Closed

Event Notification (EN) 54273 – Unplanned Surface Contamination

5. INSPECTION PROCEDURES USED

88025 Maintenance and Surveillance of Safety Controls
88072 Plant Modifications (Triennial)

6. DOCUMENTS REVIEWED

Records:

13385747 (C820I026-0002), IROFS Flowmeter/Switch, L2 V-406 N2, 08/18/2018
13388940 (S820I010), IROFS Detector HF Reactor L2A, 09/23/2018
13392868 (C840P002-0002), IROFS Monitor Uranium DC HF 1 WK IN, 10/14/2018
13394807 (C840P002-0002), IROFS Monitor Uranium DC HF 1 WK IN, 11/04/2018
13395580 (C185P001), IROFS Gadolinium Scrap Recovery System, 11/21/2018
13398388 (C830P004-0004), IROFS Dry Conversion 4 Powder Prep, 12/08/2018
13405455 (PM004269), IROFS Rotary Valves DC L2 12 MO MW, 02/22/2019

13408696 (C840P001-0003), IROFS Tank Scrubber L3 Overflow, 03/06/2019
 13412677 (C820I015-0001), IROFS Transmitter PRS 6 MO CALIB, 04/16/2019
 13419296 (C840P002-0003), IROFS Monitor Uranium DC HF 1 WK IN, 06/02/2019
 13420295 (C830I001-00004), IROFS Hygrometer Blend 6 MO CALIB, 06/01/2019
 13423569, (S840I003), IROFS HF Sensor/Transmitter 1 MO, 07/06/2019
 13428261 (C812I004), Maintenance Order, IROFS Autoclave Line 2B V2-102,
 08/07/2019
 13428262 (C840P002), Maintenance Order, IROFS Transmitter HF U-Monitor,
 08/07/2019
 C812I004, T/C Vaporization Autoclave DC 6 Month Interval, 08/01/2019, 02/01/2019,
 08/01/2018, and 02/01/2018
 Calibration Certificate, Vane Anemometer, NIST traceable
 E04-NCSA-810, Dry Conversion Vaporization System, Version 12.0
 E04-NCSA-840, Criticality Safety – NCSA Dry Conversion Liquid Effluent & HF
 Recovery, Version 6
 ECN-6058, HF Detector in Dry Conversion Pilot Plant Area, 9/8/97
 ECN-6475, DC HF Storage TK Mods, 3/20/98
 ECN-6498, DC HF Storage TK Diptube Installation, 3/23/98
 ECN-6520, Pilot Plant Calciner Modification Dry Conversion, 5/11/98
 ECN-6541, DC Line Calciner Powder Xfer PLC, 4/22/98
 ECN-6572, DCF Autoclave Cart Weight, 10/28/98
 ECN-6579, DCF Autoclave Door Handles, 2/2/99
 ECN-6675, DCF Calciner Breach Insulation, 10/12/98
 ECN-6694, DCF Autoclave TC Modification, 12/31/98
 ECN-6798, DC U Monitor Cooling Mods, 3/15/99
 ECN-6940, HF Detector in HF Recovery Room Dry Conversion, 8/1/00
 ECN-6947, Dry Conversion Calciner Exit End Modification, 11/30/1999
 ECN-7167, Filter Mod DCF Calciner Rec. Hood, 9/5/01
 ECN-7684, DCF Autoclave Pressure Xmitter Replacement, 6/10/05
 ECN-7941, DC V-402 Feed Hopper Level, 11/19/08
 ECN-7944, Hydrogen Explosion Prevention in DCF Calciners and Reactors,
 01/31/2006
 ECN-8116, Install Flow Meter to Compare DC UF6 Flow, 10/15/08
 ECN-8175, DCF 4th Floor HF Detector Installation, 11/29/06
 ECN-8182, Line 3 DCF Reactor V3-203 Isolation, 1/09/07
 ECN-8226, Line 3 DCF Reactor V3-203 Isolation, 6/27/07
 ECN-8238, DCF Line 2 and 3 U Monitor Installation, 4/23/08
 ECN-8272, Autoclave Cylinder Handling Cradle Ergonomic Assist, 2008
 ECN-8289, DC Calciner Breach Off-Gas, 7/21/08
 ECN-8303, Dry Conversion Steam Process Stop Valves, 06/12/2009
 ECN-8336, DC HF Sensor Relocation, 4/23/08
 ECN-8575, DC U Monitor Lamp Upgrade, 8/11/11
 ECN-8613, Steam Line from UO2/ARF to DC, 10/18/13
 ECN-8675, DC U Monitor DIW Flush Modification, 12/13/13
 ECN-8772, DC Autoclave Cart Automation, 4/5/17
 ECN-8776, DCF Valve Actuator Replacement (CR2015-9684), 5/13/16
 ECN-8823, DC Calciner L1 & L2 Breach/Reactor Impactor Upgrades, 4/10/17
 FRM-30325E, IRM Out-of-Tolerance Web Cap Form, Version 2.3, 08/07/2019
 Portfolio User Curriculum User Records for J. Huttleball & D. Kim, 8/8/19
 Work Order 13423963, C840P002-001 Monitor Uranium HF 1 WK IN, 7/8/19

Procedures:

AID-10081, Reference 108 UF6 Autoclave Thermocouple (Magnetic Based), Version 4.3, 07/10/2017
AID-10375, Operator Aid – Reference 1045 Mil-Ram Model TA-2100 and Model 01-2507 SMTR HF Gas Sensor/Transmitter
AID-10469, Operator Aid – Reference 1105 Custom Sensors & Technology Uranium Analyzer Model 53T PHOTO-X UV-VIS Monitoring System, Version 5.1, 12/29/2016
AID-40546, Preparation of Reagents in Lab1 for U Monitors, Version 4.0, 05/12/2017
E12-03-064, Annual Maintenance Audit, Version 2.1, 11/16/2018
Maintenance Audit, 11/2018 – 12/2018
MCP-30149, Management Control Procedure Equipment and Interlock Bypass, Version 6.1
MCP-30153, Guidelines for IROFS Design and Documentation Requirements, Version 6.2
MCP-30325, Instrument Repetitive Maintenance (IRM), Version 15.0, 06/12/2019
MCP-30377, Control and Calibration of Primary Calibration Standards, Version 4.0, 09/19/2018
MCP-30383, Preventive Maintenance, Version 5.2, 06/27/2018
MCP-30518, Dry Conversion Vaporization (System 810) Controls Design Description, Version 5.0
MMD-18-001, Annual Configuration Control Audit Report, 12/28/2018
New Brunswick Laboratory Certified Reference Materials, Certificate of Analysis, Enriched UO₂ (URANIUM Oxide)
SOP-40285, Dry Conversion Facility – Preparation and Heatup, Version 15.2
SOP-40292, Dry Conversion Facility – Preparing and Removing UF₆ Cylinders, Version 20.0
SOP-40762, Error Control Procedure for Scales and Balances, Version 10.1, 01/18/2019
SOP-40763, Maintenance and Control of Inspection Tools and Equipment, Version 18.0, 01/31/2018
SOP-40765, Certification of Gage Calibration Technicians, Version 3.4, 01/08/2018
SOP-40789, Work Order Instructions, Version 18.0, 11/12/2018
SOP-40839, Instrument Repetitive Maintenance (IRM), Version 12.1, 07/20/2018
SOP-40841, Preventive Maintenance (PM), Version 9.1, 06/28/2016
SOP-40847, Control and Calibration of Primary Calibration Standards, Version 4.3, 07/25/2018
SOP-40920, Items Relied On For Safety (IROFS) and Equipment Essential to Safety, Version 7.0, 06/13/2017
Training Records – SOP-40841 (9.2) Preventive Maintenance (PM), SOP-40839 (12.1) Instrument Repetitive Maintenance (IRM) – July – September 2018
SOP-40287, Standard Operating Procedure Chemical Operations – DCF – Control Room Dry Conversion Facility Steady State Operation, Version 20

Condition Reports Written as a Result of the Inspection:

2019-3059

Condition Reports Reviewed:

2007-0130, 2007-0252, 2007-3884, 2008-2476, 2008-4504, 2008-5654, 2009-0311, 2009-5689, 2009-7369, 2010-8725, 2011-3140, 2011-3353, 2013-8154, 2014-0571, 2014-6496, 2016-5601, 2018-7783, 2018-8510, 2018-9923, 2019-188, 2019-1005, 2019-1087, 2019-1263, 2019-1269, 2019-1328, 2019-1329

Other Documents:

12-month print-out of all maintenance/surveillance activities involving IROFS and Equipment Essential to Safety (non-IROFS)
Anchor Autoclaves, Operating Manual and Equipment Bulletins, 08/08/2006
Bypass Permit No. 566, IROFS #2318, 2319, 6219, 6220, 5/30/19
Custom Sensors & Technology Model 5420AM30 Photometric Analyzer Installation Operation Maintenance, 04/19/1996
JY:96-015, Dry Conversion Project – Vaporization (CSA Issues), 12/19/1996
Organizational Chart (Technical Support & Maintenance)
PG: 000129, DC Reactor Inspection 3 YR MW
S840I003, HF Gas Sensor/Transmitter, Version 6
Support/Project Engineering Assignments Matrix, 8/8/19
Various chemistry calculations for the 50-ppm standard used in U-Monitor PMs Interlock