



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET SW SUITE 23T85  
ATLANTA, GEORGIA 30303-8931**

June 16, 2000

Framatome Cogema Fuels  
ATTN: Mr. J. E. Matheson  
Vice President, Operations  
Lynchburg Manufacturing Facility  
P. O. Box 11646  
Lynchburg, VA 24506-1646

SUBJECT: NRC INSPECTION REPORT NO. 70-1201/2000-03

Dear Mr. Matheson:

This refers to the inspection conducted on May 15 through 19, 2000, at the Lynchburg Manufacturing Facility. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

Within the scope of the inspection, violations or deviations were not identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made publically available.

Should you have any questions concerning this letter, please contact us.

Sincerely,

**/RA/**

Edward J. McAlpine, Chief  
Fuel Facilities Branch  
Division of Nuclear Materials Safety

Docket No. 70-1201  
License No. SNM-1168

Enclosure: (See Page 2)

Enclosure: NRC Inspection Report

cc w/encl:

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-1201

License No.: SNM-1168

Report No.: 70-1201/2000-03

Licensee: Framatome Cogema Fuels, Inc.

Facility: Lynchburg Manufacturing Facility

Location: Lynchburg, VA

Dates: May 15-19, 2000

Inspectors: R. E. Swatzell, Fuel Facility Inspector

Approved by: E. J. McAlpine, Chief  
Fuel Facilities Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

### Framatome Cogema Fuels NRC Inspection Report 70-1201/2000-03

This routine, announced inspection focused on the observation and evaluation of the licensee's environmental, waste management, and waste shipping programs. The report covers a one week period and includes the inspection efforts of one regional fuel facility inspector.

Based upon the results of this inspection, the licensee's environmental protection, waste management, and waste shipping were acceptable. The inspection identified the following aspects of the program as outlined below:

#### Environmental Protection

The licensee adequately met the environmental monitoring requirements as set forth in Chapter 5 of license SNM-1168 and licensee procedure SL-1270. Environmental samples indicated that environmental radioactivity concentrations had not been significantly affected by plant operations. (Paragraph 3.a)

#### Waste Management

The licensee had an effective program for monitoring radiological constituents in plant gaseous effluents which met the implementation requirements of license SNM-1168 and the radiological release criteria of 10 CFR Part 20. The inspector concluded that representative gaseous effluent samples were being acquired as sampling equipment was operating properly and had been appropriately calibrated. (Paragraph 4.a)

The licensee's program for the shipping of low level radioactive solid wastes for disposal adequately met the requirements of 10 CFR 20.2006, Appendix G of 10 CFR Part 20, and 10 CFR Parts 61.55 and 61.56. Low Level Radioactive Waste (LLRW) storage was performed in a manner as to prevent area contamination. (Paragraph 4.b)

The licensee had reduced the volume of onsite waste by disposing of approximately 20,000 cubic feet of contaminated soil removed from the Wet Weather Stream (WWS) area. The contaminated soil was sent to U.S. Ecology for final disposal in Tennessee. (Paragraph 4.b)

#### Attachment

List of Persons Contacted

Inspection Procedures Used

List of Items Opened, Closed, Discussed

List of Acronyms Used

## REPORT DETAILS

### 1. **Summary of Plant Status**

This report covered the efforts of one regional inspector during a one week period. Fuel manufacturing processes were shutdown and routine Service Equipment Refurbishment Facility (SERF) operations were ongoing at Framatome during the week. There were no unusual plant operational occurrences during the onsite inspection.

### 2. **Plant Operations (IP 92701)(O3)**

#### a. Followup on Previously Identified Issues (03.08)

##### (1) Inspection Scope

The inspector reviewed corrective actions taken regarding Violation 99-01-01, concerning the failure to perform a two-year review of operating procedures.

##### (2) Observations and Findings

The inspector reviewed the licensee's corrective actions, which included identifying operating and manufacturing procedures that involved special nuclear material (SNM), and including these procedures on an SNM Applicable Documents Review Index. The licensee will review this index annually to ensure that they either revised or reviewed applicable procedures within the two-year period. The appropriate product center manager and the radiation protection manager will review the procedures. Currently, an individual is assigned the responsibility of scheduling the reviews; however, the licensee is developing a computer-based program that will automatically flag procedures needing review and alert the responsible individuals that a review is coming due.

##### (3) Conclusion

Based on this review, Violation 99-01-01 is closed.

### 3. **Environmental Protection (IP 88045) (R2)**

#### a. Monitoring Program Results (R2.02)

##### (1) Inspection Scope

The inspector reviewed the licensee's environmental surveillance program for compliance with the requirements as set forth in Chapter 5 of license SNM-1168 and the licensee's procedure. Monitoring results for surface water, soil, vegetation, sediment and environmental air samples were reviewed to assess the radiological impact to the environment due to plant operations.

(2) Observations and Findings

The inspector reviewed the licensee's 1999 annual results for surface water, soil, vegetation, and sediment samples and observed that samples were acquired at the prescribed frequency and that the gross alpha and gross beta activity levels were consistently below licensee established action level limits. In addition, the inspector also reviewed licensee environmental air sampling results and observed that the gross alpha and gross beta results were consistently below the long term action levels. No increasing trends were distinguishable in the reviewed environmental results as the reported activity levels for environmental samples remained consistent with the results reported for previous monitoring periods.

The inspector did note that the reported gross alpha and gross beta minimum detectable levels (MDLs) for sediment, soil, and vegetation samples were consistently above the MDLs (1.0 picocurie/gram(pCi/g)) specified in the license. The licensee had investigated this condition and had determined that the specified MDL of 1 pCi/g was not practical based on unrealistic sample times coupled with residue mass attenuation considerations limiting sample mass. Per the licensee, upon license renewal, the MDL for soil, sediment, and vegetation samples will be revised (increased) to a level that should be consistently achievable. The inspector reviewed the licensee's investigation and agreed with the licensee's assessment that the MDL could be increased to a consistently achievable level with reasonable sample masses and count times and that would still allow statistically based determinations of environmental concentrations below licensee action levels. This issue will be tracked as Inspector Follow-up Item (IFI) 2000-03-01. In addition, the inspector noted that the 1999 reported MDLs for these analyses (5-7 pCi/g) were below the licensee action level of 20 pCi/g.

Additionally, the inspector noted that the licensee's procedure did not provide explicit instructions for the appropriate acquisition of soil samples containing insoluble uranium constituents (i.e., first 2" of soil) in order to prevent sample dilution. The inspector discussed this issue with the licensee and the licensee acknowledged that the procedure would be revised in order to provide adequate sampling instructions.

(3) Conclusion

The licensee adequately met the environmental monitoring requirements as set forth in Chapter 5 of license SNM-1168 and licensee procedure SL-1270. Environmental samples indicated that environmental radioactivity concentrations had not been significantly affected by plant operations.

4. **Waste Management (IPs 88035, 84900, and 84850) (R3)**

a. **Airborne Effluent Controls, Instrumentation, and Monitoring Results (R3.03 and R3.04)**

(1) **Inspection Scope**

The inspector reviewed the licensee's gaseous effluents program for compliance with the requirements of 10 CFR Part 20 and the license requirements of Chapter 3 of SNM-1168. The inspector also toured the licensee's gaseous effluent sampling stations and observed the acquisition of samples for monitoring purposes.

(2) **Observations and Findings**

The inspector reviewed the licensee's semi-annual gaseous effluent reports for the first and second half of 1999. These results are given in Table 1 in comparison with the results reported for 1998.

**Table 1: Radioactivity in Gaseous Effluents for 1998 and 1999 (μCi)**

ISOTOPE	1998	1999
U-234	3.64	3.62
U-235	0.20	0.09
U-236	0.00	0.00
U-238	0.85	0.40
Co-60	78.12	59.52

Monitoring results for the first and second quarters of 2000 indicated that plant radiological effluents for this period were consistent with or below those reported for previous monitoring periods. The inspector also toured the individual gaseous effluent sampling stations and observed the acquisition of routine samples. The inspector noted that flow rotometers were properly calibrated and that sample flowrates were correctly set according to isokinetic criteria.

(3) **Conclusions**

The licensee had an effective program for monitoring radiological constituents in plant gaseous effluents which met the implementation requirements of license SNM-1168 and the radiological release criteria of 10 CFR Part 20. The inspector concluded that representative gaseous effluent samples were being acquired as sampling equipment was operating properly and had been appropriately calibrated.

b. Radioactive Solid Waste (R3.05, R3.06, R3.08, and R3.09)

(1) Inspection Scope

The inspector reviewed the licensee's program for the classification, packaging, shipping, and tracking of low level radioactive waste pursuant to the requirements of 10 CFR 20.2006, Appendix G of 10 CFR Part 20, and 10 CFR Parts 61.55 and 61.56. The inspection involved the review of shipping manifests, tracking of radioactive shipments, and instrumentation calibration and quality control records. The inspector also conducted a tour of the site and assessed the licensee's storage of LLRW.

(2) Observations and Findings

The inspector reviewed documentation (shipping manifests) for three recent LLRW shipments. It was observed that wastes were classified correctly per 10 CFR Part 61 requirements and that the waste manifests contained the information required by 10 CFR Part 20, Appendix G. In addition, the inspector noted that the licensee had notified the licensed waste receipt facility prior to shipment of the radioactive material and had established an adequate system for tracking of waste shipments. The inspector also reviewed the calibration records for the drum counter system (used for determining Uranium-235 ( $U^{235}$ ) content) and observed that the required calibrations and system checks (standards and background) were performed properly and at the designated frequency.

The inspector also reviewed classification procedures and a cross section of the shipping documentation involving multiple shipments of radioactively contaminated soil from the Wet Weather Stream (WWS) remedial activities. The inspector noted that the licensee had completed the removal of approximately 20,000 cubic feet (2760 55-gallon drums) of contaminated soil from the site via shipments to U.S. Ecology in Tennessee. Per the licensee, the soil was further characterized by U.S. Ecology and then finally disposed of in a municipal waste landfill. The inspector noted that the licensee's characterization was based on a contractor uranium isotopic analysis of a homogenized soil sample consisting of aliquots of soil acquired during the remediation process.

The waste processor (U.S. Ecology) had performed non-destructive assay of each drum of contaminated soil via gamma spectroscopy. The inspector noted that the licensee had shipped the majority of the WWS soil to U.S. Ecology as "DOT - Non-Radioactive" (i.e., less than 2000 pCi/g) based on their analysis results. The inspector observed that the average mass percentage of  $U^{235}$  was approximately 1.6% based on the licensee's analysis (contractor uranium isotopic). The inspector also toured LLRW storage areas and observed that waste containers were labeled properly and no significant container degradation was observed. Waste storage was conducted in a manner as to prevent area contamination.



(3) Conclusions

The licensee's program for the shipping of low level radioactive solid wastes for disposal adequately met the requirements of 10 CFR 20.2006, Appendix G of 10 CFR Part 20, and 10 CFR Parts 61.55 and 61.56. LLRW storage was performed in a manner as to prevent area contamination. The licensee had reduced the volume of onsite waste by disposing of approximately 20,000 cubic feet of contaminated soil removed from the WWS area. The contaminated soil was sent to U.S. Ecology for final disposal in Tennessee.

5. Exit Interview

The inspection scope and results were summarized on May 19, 2000, with those persons indicated in the Attachment. Although proprietary documents and processes were occasionally reviewed during this inspection, the proprietary information is not included in this report. Dissenting comments were not received from the licensee.

## ATTACHMENT

### **PARTIAL LIST OF PERSONS CONTACTED**

#### Licensee

- \*T. Allsep, Manager, Radiation Protection
- \*G. Lindsey, Health Physicist
- \*J. Matheson, Plant Manager
- \*T. Wilkerson, Manager, Quality, Health/Safety and Licensing
- \*R. Freeman, Manager, Locensing and Nuclear Material and Accountability

### **INSPECTION PROCEDURES USED**

IP 84850	Radioactive Waste Management
IP 88035	Radioactive Waste Management
IP 88045	Environmental Protection
IP 92701	Follow up

### **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
70-1201/99-01-01	Closed	VIOLATION - Failure to perform a two year review of operating procedures. (Paragraph 2)
70-1201/00-03-01	Open	IFI - Gross alpha and gross beta minimum detectable levels (MDLs) for sediment, soil, and vegetation samples were consistently above the MDLs (1.0 pCi/g) as specified in licensee SNM-1168. The licensee will propose increasing the MDLs for soil, sediment, and vegetation samples to a consistently attainable level during the next license renewal process. (Paragraph 3)

### **ACRONYMS**

CFR	Code of Federal Regulations
IFI	Inspector Followup Item
LLRW	Low Level Radioactive Waste
MDL	Minimum Detectable Level
NRC	Nuclear Regulatory Commission
pCi/g	picocurie/gram
SERF	Service Equipment Refurbishment Facility
SNM	Special Nuclear Material
U <sup>235</sup>	Uranium-235
WWS	Wet Weather Stream