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APPENDIX A  
NOTICE OF VIOLATION

General Electric Company  
Wilmington Manufacturing Department

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

As a result of the inspection conducted on June 13 - 17, 1983, and in accordance with the NRC Enforcement Policy, 47 FR 9987 (March 9, 1982), the following violations were identified.

- A. License Condition 2.1 requires the licensee to follow the Fundamental Nuclear Material Control Plan dated June 24, 1977, as amended according to the schedule of pages dated December 23, 1982, transmitted by his letter from Charles M. Vaughan to L. J. Evans dated December 23, 1982; and as may be revised in accordance with the provisions of 10 CFR 70.32(c).!

Contrary to the above, the licensee failed to investigate and reconcile shipper-receiver differences on individual containers that were statistically significant for one cylinder from a shipment of uranium hexafluoride received March 18, 1983, two cylinders from a shipment of uranium hexafluoride received April 7, 1983, and one cylinder from a shipment of uranium hexafluoride received April 11, 1983.

This is a Severity Level V Violation (Supplement III).

- B. 10 CFR 70.51(c) requires the licensee to "...establish, maintain, and follow written material control and accounting procedures..."

Contrary to the above, the licensee failed to follow procedure 109, "Nuclear Material Receipts", (revision 7 - issued March 23, 1983). The procedure states: "UF6 cylinders which have assigned gross weight differences greater than (as compared to the shipper's tally out sheet or other official material transfer document and the WMD assigned weight) must be reweighed. If after reweighing, the difference exceeds the cylinder must be placed on hold until a detailed shipper-receiver difference analysis is performed." On April 11, 1983, and May 3, 1983, the licensee received uranium hexafluoride cylinders that had gross weight differences (when compared to the shipper) in excess of . The licensee failed to reweigh the cylinders in accordance with the written procedure.

This is a Severity Level V Violation (Supplement III).

General Electric Company

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Pursuant to the provisions of 10 CFR 2.201, you are hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) admission or denial of the alleged violations; (2) the reasons for the violations if admitted; (3) the corrective steps which have been taken and the results achieved; (4) corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

**JUL 8 1983**

Date: \_\_\_\_\_



MATERIAL TRANSMITTED HEREWITH  
CONTAINS 2790 INFORMATION

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II

101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

JUL 8 1983

Report No. 70-1113/83-17

Docket No. 70-1113

License No. SNM-1097

Safeguard Group No. III

Licensee: General Electric Company  
P. O. Box 780  
Wilmington, NC 28402

Date of Inspection: June 13 - 17, 1983

Type of Inspection: Unannounced Material Control and Accountability

Inspectors:

D. W. Jones  
D. W. Jones, Statistician

7/8/83

Date Signed

J. B. Lankford  
J. B. Lankford, Safeguards Auditor

7/8/83

Date Signed

B. L. Richards  
B. L. Richards, Statistician

7/8/83

Date Signed

Approved by:

E. J. McAlpine  
E. J. McAlpine, Chief, Material Control and  
Accountability Section, Safeguards Branch  
Division of Emergency Preparedness and  
Materials Safety Programs

7/8/83

Date Signed

Inspection Summary:

Areas Inspected: Records and Reports, Shipping and Receiving, and Internal Control.

The inspection involved 95 inspector-hours by three NRC inspectors and was begun during the regular hours.

Results: The licensee was found to be in compliance with NRC requirements in the three areas examined during the inspection except for the following items:

1. Failure to investigate and reconcile statistically significant shipper-receiver differences.
2. Failure to reweigh cylinders of uranium hexafluoride receipts in accordance with written procedures when gross weight discrepancies occur.

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## REPORT DETAILS

Report No. 70-1113/83-17

### 1. Key Persons Contacted

- \*D. W. Brown, Acting Manager, Fuel Chemical Operations
- R. L. Bruce, Analyst, Licensing and Nuclear Materials Management
- \*P. N. Denison, Specialist, Licensing and Nuclear Materials Management
- \*W. J. Hendry, Acting Manager, Quality Assurance
- \*C. P. Keshler, Acting Manager, Microelectronics Applications and Services Operations
- \*G. R. Mallett, Senior Engineer, Measurements and Statistics
- C. L. Nixon, Technician, Licensing and Nuclear Materials Management
- \*R. G. Patterson, Acting Manager, Fuel Manufacturing
- \*C. H. Risley, Acting Manager, Materials
- \*H. Stern, Acting Manager, Manufacturing Technology and Engineering Operations
- \*C. M. Vaughan, Manager, Licensing and Nuclear Materials Management
- \*H. F. Walker, Specialist, Licensing and Nuclear Materials Management

The inspectors also interviewed several other licensee employees.

\*Denotes those present at the exit interview.

### 2. Records and Reports

A review was made to determine the accuracy of the licensee's accountability records. A sampling of entries posted to the records during the period March 1 through May 31, 1983, was selected for review. Entries representing each type of transaction (i.e., receipts, shipments, and losses) were included in the test. Each transaction was traced to the Nuclear Material Transaction Report (Form DOE/NRC-741) and to the applicable supporting documentation such as transfer forms, measurement worksheets, and shipper invoices. The transactions reviewed were found to be properly supported and accurately posted to the accountability records.

### 3. Shipping and Receiving

The licensee's program of accounting for special nuclear material (SNM) shipped and received during the period June 1982 through May 1983 was inspected. The inspection consisted of a review of the nuclear material accounting procedures for shipping and receiving, a selected examination of the licensee's records pertaining to specific transactions and the source of the data used to generate those records, a review of the licensee's system for evaluating shipper - receiver differences, and an examination of the methods used for calculating limits of error associated with shipments and receipts. The records selected for review pertained to transactions involving receipts of uranium hexafluoride.

As uranium hexafluoride is received, supporting documentation is generated by Fuel Support Operation and by the Measurements and Statistics Section. These organizations are responsible for checking receiving documentation, seal identification and condition, item piece count and identification, and for assuring that quantitative measurement data are obtained. The uranium factor, isotopic (U-235) factor, and metallic impurities correction are reported by Ledoux, an off-site laboratory. The Records and Reports Section uses these data to complete the Nuclear Material Transaction Reports (Form NRC-741). The NRC-741 forms were receipted and returned within the specified time requirements.

The licensee calculates limits of error for each receipt of uranium hexafluoride on an item basis and on a shipment basis. A review of the licensee's methods for calculating limits of error showed that appropriate statistical techniques were being employed. Shipper - receiver differences (SRDs) for uranium hexafluoride receipts are evaluated on an item basis and on a shipment basis utilizing the computed limits of error. During this inspection, four instances were found where statistically significant SRDs occurred for individual cylinders of uranium hexafluoride receipts and the licensee did not take appropriate investigative action or attempt to reconcile the difference. More specifically, the four instances were:

- a. A statistically significant SRD was detected in container GEW329 of receipt BWA-YLJ 554 (received March 18, 1983) for both grams uranium and grams U-235. The difference was attributed to a gross weight discrepancy in the heel.
- b. A statistically significant SRD was detected in container GEW117 of receipt BWA-YLJ 565 (received April 7, 1983) for grams U-235. The difference was attributed to a significant difference in enrichment between the licensee and the shipper.
- c. A statistically significant SRD was detected in container GEW364, also of receipt BWA-YLJ 565, for grams U-235. The difference was attributed to a significant difference in enrichment between the licensee and the shipper.
- d. A statistically significant SRD was detected in container GEW213 of receipt BWA-YLJ 567 (received April 11, 1983) for grams U-235. The difference was attributed to a gross weight discrepancy and a significant difference in enrichment between the licensee and the shipper.

In each of the four instances, the licensee either did not take any investigative action or the investigative action as described in the licensee's "Shipper/Receiver Differences Report" did not address the significant differences in the individual cylinders. In all four instances, no attempt was made by the licensee to resolve the significant SRD



In one of the instances (BWA-YLJ 554), the Manager, L&NMM was not notified in that he did not sign the "Shipper/Receiver Differences Report" to acknowledge notification when the statistically significant SRD was observed. The licensee's failure to investigate and reconcile statistically significant SRDs is a violation (83-17-01).

The licensee's program to monitor cumulative SRDs for receipts of uranium hexafluoride was also reviewed. The licensee employs cumulative sum (CUSUM) charts to evaluate the cumulative SRD. This area will be examined in more detail in a future inspection.

A second problem was detected in the licensee's program for receiving uranium hexafluoride. According to procedure 109, the licensee is to reweigh uranium hexafluoride cylinders when the difference in gross weight (as compared to the shipper) exceeds 1. The procedure also states that "if after reweighing, the difference still exceeds 1, the cylinder must be placed on hold until a detailed shipper-receiver analysis is performed". On two different occasions, container GEW213 of receipt BWA-YLJ 567 (received April 11, 1983) and container GEW140 of receipt BWA-YLJ 577 (received May 3, 1983), the licensee received uranium hexafluoride cylinders that had gross weight differences (when compared to the shipper) in excess of 1 and failed to reweigh them. The original gross weight was used in completing the NRC-741 Form. Thus if the cylinders were reweighed, and the reweigh check sheets were lost or misplaced by the licensee, the revised gross weight would have had to have been the same as the original gross weight from the first weighing. The cylinders would have had to have been placed on hold until a detailed shipper-receiver difference analysis could be performed in accordance with the written procedure. The licensee could not furnish documentation of a detailed shipper-receiver analysis nor could the licensee furnish documentation showing that the cylinders were reweighed. In addition, the gross weight discrepancy of container GEW213 was a major cause of the statistically significant SRD for this cylinder. Furthermore, this statistically significant SRD was not investigated or reconciled by the licensee, as referenced in violation 83-17-01 above. The licensee's failure to reweigh cylinders of uranium hexafluoride in accordance with the written procedure is a violation (83-17-02).

Another area of concern uncovered during this inspection involved statistically significant SRDs caused by discrepancies in the gross heel weight. Upon receipt of uranium hexafluoride cylinders by the licensee, they are completely emptied except for some residual material in the bottom of the cylinder referred to as a heel. The licensee ships the heel back to the gaseous diffusion plant with a measured gross heel weight, determined prior to shipment. The gaseous diffusion plant, after receipt of the heels, gross weighs each heel. The gross heel weight, as determined by the gaseous diffusion plant, was found in a number of cases to be significantly different from the licensee's gross heel weight. The gaseous diffusion plant, however, does not reconcile significant SRDs. Thus, when the gaseous diffusion plant refills the cylinders with uranium hexafluoride to ship back

to the licensee, this gross heel weight discrepancy can cause significant SRDs for the licensee which at the present time they are unable to resolve. This item is deemed an inspector follow-up item, pending further discussions between the licensee and the NRC (83-17-03). It should be noted that this problem was discussed in Region II Inspection Report 70-1113/79-09 and assistance from the NRC Office of NMSS was requested to resolve this problem with the DOE facilities. Discussions were held between NMSS and DOE concerning this matter and means of resolution were to be further explored. It is evident from the current inspection findings that resolution of this matter has not been achieved. Therefore, NMSS will be requested to contact DOE again in regards to this matter.

4. Internal Control

The licensee's system of storage and internal control established to provide current knowledge of the identity, quantity, and location of the SNM contained in discrete items and containers within the plant was inspected. The system as described in (f)

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Through a selective records review and a tour of the facility, it appeared that the licensees' internal control activities were in accordance with his FNMCP.

5. Exit Interview

The inspection scope and findings were summarized on June 17, 1983 with those persons indicated in Paragraph 1 above.