



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

SEP 13 1985

Report No.: 70-1113/85-15

Licensee: General Electric Company  
Wilmington, NC 28401

Docket No.: 70-1113

License No.: SNM-1097

Facility Name: General Electric Company

Inspection Conducted: August 12-16 and August 23, 1985

Inspector: G. L. Troup

9/4/85  
Date Signed

Accompanying Personnel: J. N. Grace (August 14, 1985)  
K. P. Barr (August 14, 1985)

Approved by: E. J. McAlpine  
E. J. McAlpine, Chief, Material Control and  
Accountability Section, Nuclear Materials  
Safety and Safeguards Branch, Division of  
Radiation Safety and Safeguards

9/4/85  
Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 33 inspector-hours on site in the areas of management organization and controls, training, nuclear criticality safety, audits, operations, and fuel storage. Additionally, a management meeting was held on August 14, 1985

Results: Of the areas inspected, no violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

E. A. Lees, General Manager  
\*W. W. McMahon, Manager, Quality Assurance  
\*J. E. Bergman, Manager, Manufacturing  
\*R. A. Petelinkar, Manager, Site Operations and Materials Systems  
\*B. F. Bentley, Manager, Fuel Chemical Operations  
\*G. R. Pearson, Manager, Uranium Fuel Fabrication  
\*C. M. Vaughan, Manager, Regulatory Compliance  
\*W. C. Peters, Manager, Nuclear Safety Engineering  
\*R. E. Lennon, Senior Manager, Manufacturing Training and Program Development  
\*W. B. Smalley, Manager, Environmental Protection  
F. C. Eschenlauer, Supervisor, Metallurgical Laboratory  
J. T. Taylor, Senior Nuclear Safety Engineer  
G. M. Bowman, Senior Nuclear Safety Engineer  
S. P. Murray, Senior Nuclear Safety Engineer  
R. H. D. Folleck, Senior Specialist - License Engineering  
G. R. Mallett, Senior Engineer - Measurements and Statistics  
B. S. Dunn, Specialist - Licensing Support  
W. B. Haverty, Analyst - Nuclear Material Control  
R. J. Keenan, Nuclear Safety Engineer  
\*T. R. Crawford, Environmental Protection Engineer

Other licensee employees contacted included technicians, operators, and office personnel.

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on August 16, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee. The licensee stated that design, process and operational information associated with the Uranium Process Management Project (UPMP) would be considered company proprietary under the terms of 10 CFR 2.790.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

#### 4. Management Organization and Controls (88005)

##### a. Organizational Structures

The responsibilities of the licensee's key positions with safety related responsibilities and qualifications of the personnel filling the positions were reviewed in report 70-1113/85-07. The inspector discussed the assignments with licensee representatives and determined that there had been no changes or reassignments since the last review.

##### b. Safety Review Committee

- (1) Section 2.3.1 of the license application states that the Safety Review Committee (SRC) shall be comprised of at least five members appointed by the Department General Manager, shall meet at least four times a calendar year and shall be responsible for performing certain specified reviews. P/P 40-1, "Wilmington Safety Review Committee" appoints the members of the position as well as designates the Chairman and secretary. The procedure was approved by the Department General Manager.
- (2) The inspector reviewed the minutes of the meetings held on June 19, August 28 and December 7, 1984, and meetings held on March 28, April 18, April 19 and April 24, 1985. The minutes indicated that a quorum was present for each meeting, and that items requiring action by managers were identified and responsibility assigned. The 1985 meetings constituted a review of the status and open work on the UPMP project (See paragraph 9).

No violations or deviations were identified.

#### 5. Training/Retraining (88010)

- a. Section 2.6 of the license application requires that nuclear safety training be performed by instructors certified by the manager of the criticality safety and radiation safety functions. This requirement is implemented by P/P 40-17, "Nuclear Safety Training", which requires the documentation of the qualification of instructors and approval by the Manager, Nuclear Safety Engineering. The inspector verified that qualification records had been prepared and approved for persons currently conducting training.
- b. Section 2.6 of the licensee application requires employees will be retrained every two years. The inspector discussed this requirements with licensee representatives and reviewed computer records used to track the status of retraining, and identify individuals requiring retraining. During tours of the process areas, discussions with individuals indicated that they had received nuclear safety training within the past year and that they were aware of the requirements for periodic retraining.

## 6. Nuclear Criticality Safety (88015)

### a. Facility Modification and Changes

The inspector reviewed four facilities change requests and the associated nuclear safety analyses. The inspector verified that the analyses were conducted using approved evaluation methods and that the analyses were verified by an independent reviewer. The inspector also verified that preoperational audits had been conducted prior to the issuance of the final approval by Nuclear Safety Engineering, and that a Nuclear Safety Release/Requirement (NSR/R) had been approved by the Area Manager and Nuclear Safety Engineering prior to issuance. The inspector also reviewed six change requests which were evaluated as not requiring a nuclear safety analysis.

No violations or deviations were identified.

### b. Nuclear Safety Analysis Methods

The inspector discussed the methods used to perform nuclear safety calculations with the cognizant individuals and verified that the methods used were in accordance with the licensee requirements. Computational methods which may be used and individuals designated as qualified to perform analyses and/or to perform the independent verification are specified in NSI E-4.0, "Criticality Safety Analysis Methods and Verification". A licensee representative informed the inspector that three approved codes are presently used.

No violations or deviations were identified.

### c. SNM Containers

Table 13.7 of the license application lists the shipping containers authorized for use by the licensee. A licensee representative informed the inspector that no other containers were in use. During tours of the facility the inspector did not observe any shipping containers which were not listed in Table 13.7.

### d. Procedures

The inspector reviewed five procedures for performing nuclear safety analyses. No changes or revisions to these procedures had been made since the last review.

## 7. Audits (88005, 88015)

- a. Sections 2.8.1 and 2.8.3 of the license application specify requirements for internal quarterly audits and biennial external audits. The inspector reviewed the written report for the second quarter internal audit conducted in June 1985 and an external audit conducted by the Quality Assurance and Reliability Operation (QARO) in May 1985. The

inspector verified that the audit findings were documented and submitted to management, that corrective actions were documented, and each item closed after the adequacy was determined.

- b. The inspector reviewed the audit reports and determined that auditors were rotated during the quarterly audits. A memorandum from the Manager, Nuclear Safety Engineering dated September 17, 1984, designated the senior members of the criticality safety and radiation safety functions for auditor qualification. Individuals to perform audits are designated in writing prior to the audit.
- c. Nuclear Safety Instruction NSI 2.0, "Internal Nuclear Safety Audits", requires that quarterly audits be conducted at the Greenville, SC warehouse. An audit form has been prepared for these audits. The inspector reviewed the audit reports for the audits conducted on February 21, 1985 and May 23, 1985. Additionally, the inspector observed the audit conducted on August 23, 1985 (see paragraph 11).

No violations or deviations were identified.

#### 8. Operations Review (88020, 88025)

##### a. Tours

During the inspection, tours were made of various work areas to observe operations. Items reviewed or verified included:

- (1) Special nuclear material was stored in arrays on carts, conveyors, and process areas, and in designated storage locations in accordance with license requirements.
- (2) Housekeeping and industrial safety provisions in all areas were acceptable.
- (3) Operating procedures (PRODs) were available in the various areas. Nuclear Safety Release/Requirements and Radiological Safety Instructions were also available.
- (4) Compressed gas cylinders were constrained by a rope or chain in accordance with good industrial safety practices.
- (5) Containers of SNM were marked to identify the enrichment of the material. Observed enrichments were within posted limits.
- (6) Quantities of SNM in waste boxes were checked for conformance of labeled quantities in each box and the total in the array with the posted limits for the area.

b. Hydrofluoric Acid Shipments

Section 1.8.3.1 of the License Application (a condition of the license) authorizes the sale of hydrofluoric acid to a non-licensed company provided that the uranium concentration is less than 3 ppm. The inspector reviewed the records for the shipments of acid made in 1985 and determined that the material was less than the uranium concentration limit and was shipped to the designated receiver.

No violations or deviations were identified.

9. Uranium Process Management Project (UPMP) (88015, 88020)

- a. Amendment 3 to license SNM-1097, dated February 26, 1985, authorized the use of UPMP to process licensed materials. The licensee has started using several subsystems of UPMP to process uranium bearing process streams.
- b. The inspector reviewed the following documents related to the startup of the UPMP subsystems:
  - (1) Memoranda dated May 9, 1985, May 16, 1985, and June 3, 1985, from the Manager, Nuclear Safety Engineering to the Manager, Fuel Chemical Operations which approved the operation of the systems with uranium and constituted the official nuclear safety releases.
  - (2) Safety Review Committee minutes for meetings on March 28, April 18, April 19, and April 24, 1985, which pertained to the status, training, and preoperational testing for UPMP.
  - (3) Approximately 25 Nuclear Safety Release/Requirements (NSR/Rs) for proper review and approval and verification that nuclear safety requirements were consistent with the license application and nuclear safety analyses. A total of 63 NSR/Rs have been prepared and approved.

No violations or deviations were identified.

10. Management Meeting

- a. On August 14, 1985, a management meeting was held at the Nuclear Fuel Manufacturing Department.

NRC Attendees

J. Nelson Grace, Regional Administrator, Region II  
 K. P. Barr, Chief, Nuclear Materials Safety and Safeguards Branch  
 G. L. Troup, Fuel Facilities Inspector



GE - NFMD attendees

E. A. Lees, General Manager  
 J. E. Bergman, Manager, Manufacturing  
 R. A. Petelinkar, Manager, Site Operations and Materials Systems  
 W. W. McMahon, Manager, Quality Assurance  
 J. L. Harmon, Manager, Manufacturing Technology and Engineering  
 Operations  
 B. F. Bentley, Manager, Fuel Chemical Operations  
 C. M. Vaughan, Manager, Regulatory Compliance  
 W. C. Peters, Manager, Nuclear Safety Engineering  
 S. P. Murray, Senior Nuclear Safety Engineer

- b. The purpose of the meeting was to familiarize the Regional Administrator with the facilities and operations of the NFMD. Topics discussed included the organization, qualifications of key managers, site facilities, and fuel manufacturing operations. The meeting included a tour of the fuel manufacturing areas and associated support facilities.

11. Greenville Fuel Storage Facility

- a. Sections 1.8.4.2 and 1.8.4.3 of the license application authorize the licensee to store uranium and completed fuel assemblies at the storage warehouse in Greenville, SC. Fuel assemblies may be stored either in packages as for transport in a Fissile Class I package or in the metal inner containers of the RA-series shipping package under certificate of compliance USA/986/AF.
- b. On August 23, 1985, the inspector toured the warehouse to observe operations. Items reviewed or verified included:
  - (1) Nuclear Safety requirements (NSR/Rs) were current, and were posted in each section of the warehouse.
  - (2) Materials were contained in approved shipping containers, and were stored in approved arrays.
  - (3) All licensed material was stored inside of the warehouse.
  - (4) Flammable and combustible materials were stored in a designated steel storage cabinet.
  - (5) Warehouse doors were posted with appropriate radiation warning signs.
  - (6) Security and fire alarms were installed and functional.

No violations or deviations were identified.