



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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

November 22, 1982

Report No. 70-1113/82-23

Licensee: General Electric Company  
Wilmington, NC 28401

Facility Name: Wilmington Manufacturing Department

Docket No. 70-1113

License No. SNM-1097

Inspection at Wilmington Manufacturing Department site near Wilmington, NC

Inspector: *G. L. Troup* 11/22/82  
G. L. Troup Date Signed

Approved by: *E. J. McAlpine* 11/22/82  
E. J. McAlpine, Chief, Material Control and  
Accountability Section  
Technical Inspection Branch  
Division of Engineering and Technical Programs Date Signed

SUMMARY

Inspection on November 1-5, 1982

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours on site in the areas of plant organization, procedure control, internal review and audit, safety committees, information notices, operations, criticality safety, and operation of the new waste incinerator.

Results

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

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*P. E. Youngmans, Manager, Materials Operation
- W. J. Hendry, Manager, Regulatory Compliance
- \*R. C. Pace, Manager, Fuel Support Operation
- \*C. M. Vaughan, Manager, Licensing and Nuclear Materials Management
- M. E. McLain, Manager, Nuclear Safety Engineering
- R. L. Torres, Supervisor, Radiation Protection
- \*G. M. Bowman, Senior Nuclear Safety Engineer
- \*H. Stern, Consulting Engineer, Manufacturing Technology
- J. T. Taylor, Senior Nuclear Safety Engineer
- L. C. Hu, Senior Nuclear Safety Engineer
- G. Sakash, Senior Engineer - Projects
- S. P. Murray, Nuclear Safety Engineer
- R. H. D. Foleck, Licensing Engineer
- A. W. Cameron, Foreman, Fuel Support Operations
- D. T. Barbour, Shift Supervisor, Radiation Protection

Other licensee employees contacted included one technician and one office personnel.

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 5, 1982, with those persons indicated in paragraph 1 above.

### 3. Licensee Action on Previous Enforcement Matters

Closed (Violation) 82-02-01, Meeting Frequency of Safety Committee. The inspector verified that the actions stated in the licensee's letter of March 11, 1982, had been implemented (paragraph 10).

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Organization

- a. The Manager, Fuel Components formerly reported to the Manager, Fuel Manufacturing, and now reports to the Manager, Equipment and Components Manufacturing. The Nuclear Materials Management Unit was combined with the Licensing and Compliance Audits Unit to form the Licensing and Nuclear Materials Management Unit.

- b. Personnel appointments or changes in 1982 were:
- (1) C. M. Vaughan was appointed Manager, Licensing and Nuclear Materials Management.
  - (2) Dr. D. E. McLain was appointed Manager, Nuclear Safety Engineering, replacing J. A. Mohrbacher, who left the company.
  - (3) W. B. Smalley, formerly Senior Engineer, Environmental Protection, was appointed Manager, Environmental Protection.
  - (4) J. L. Harness, Manager, Manufacturing Technology and Engineering, is acting as Manager, Manufacturing Engineering - Fuels while G. W. McKenzie is on a special assignment.
- c. Appendix A, Section 4.7 of the license application specifies the requirements for approval of the assignment of individuals to criticality safety and radiation safety functional positions. The inspector reviewed the approvals for the selection of the Manager, Nuclear Safety Engineering and confirmed that the selection was approved in accordance with the requirements.
- d. Appendix A, Section 4.2.1, of the license application specifies the qualifications of the individuals in the criticality safety function. The inspector discussed the qualifications and experience of the individuals performing these functions (either criticality safety evaluations or the independent reviews of the evaluations) and determined that they exceeded the requirements of Section 4.2.1. The inspector had no further questions.

#### 6. Procedure Control

- a. The licensee's system for producing, reviewing, approving, revising, and controlling distribution of procedures is established by the Practices and Procedures (P/P) listed below:

P/P 10-1	Index of Practices and Procedures
P/P 10-3	WMD Practices and Procedures
P/P 10-4	Section Administrative Routines
P/P 40-5	Nuclear Safety Review System
P/P 80-6	Process Requirements and Operating Documents
P/P 80-32	Temporary Operating Instructions - FM

- b. Each P/P includes a reissue date, which provides for periodic review and revision. Numerous P/Ps were extended by memorandum beyond the reissue date. A licensee representative stated that this was due to changes in the procedure preparation and distribution system. The inspector verified that the approval of the extension of the reissue dates was at the same level as the initial approval of the procedures.

- c. The inspector reviewed selected procedures, including recent Temporary Operating Instructions, for conformance with procedural requirements and the procedure control system. No violations or deviations were identified.

#### 7. Facility Changes and Modifications

- a. Facility changes and process equipment changes are controlled by procedure P/P 40-5, Rev. 2, "Nuclear Safety Review System". Requests and approvals are documented on plant form NF-1-014. Temporary changes are approved by Nuclear Safety Engineering by letter; permanent changes are approved by the issuance of a Nuclear Safety Release/Requirements Form which is approved by the Manager, Nuclear Safety Engineering - the responsible Area Manager, and the appropriate unit manager. The Nuclear Safety Release incorporates the criticality safety and radiological safety requirements for the new operation.
- b. The inspector selected four change requests involving changes in operations or relocation of equipment. The inspector reviewed the change requests, verified that the associated nuclear safety and radiation safety reviews, engineering reviews, inspection records, management approvals, and procedure changes had been accomplished in accordance with procedural requirements. The inspector had no further questions.
- c. One Change Request (#82-071, Rearrange Conveyor in the Chemical Blend Area) was approved with a restriction on the use of the can lift pending completion of the nuclear safety analysis for the storage area. During a tour of the area, the inspector verified that the lift was tagged out-of-service and the power supply was locked out. The inspector had no further questions.

#### 8. 10 CFR 21 Implementation

- a. Procedures and records relating to the implementation of 10 CFR 21 were reviewed by the inspector. Implementing procedures are:

NEBO Procedure OP6 70-42, Rev. 3, "Reporting of Defects and Noncompliance Under 10 CFR 21 or Part 50.55(e)"

P/P 30-7, Rev. 3., "Reporting Defects and Noncompliance"

P/P 60-6, "Preparation of Material Requests"

NEBO Procedure 70-42 defines the "responsible officer" as "all NEBO Vice Presidents" and assigns responsibility for evaluations and reporting for the group to the Vice President and General Manager Nuclear Power Systems Division.

- b. No defects were identified by the licensee requiring evaluation and/or reporting to the NRC since 1980.
- c. The inspector verified that the posting requirements of 10 CFR 21.6 were met.

#### 9. Internal Review and Audit

- a. Appendix A, Section 5.1.7 of the license application specifies the requirements for audits of criticality control. The inspector reviewed the plant audit records for the period September 20 - October 31, 1982, and verified that the daily inspections had been performed by the radiation safety function. The inspector also reviewed the quarterly nuclear safety audits for the first three quarters of 1982.
- b. Appendix A, Section 5.1.7(d) of the license application requires that an annual audit of the criticality safety function shall be performed by an outside organization. The inspector reviewed the audit report for the audit conducted April 26-30, 1982 by the Nuclear Energy Product and Quality Assurance Operation (PQAO), which satisfies the audit requirements. The inspector had no further questions.
- c. Appendix A, Section 5.1.7(c) of the license application requires that a group separate from the criticality safety function "shall conduct independent methods and refinements of previously used methods". A new code, GEMER, was approved for use in 1981 (paragraph 13). The inspector reviewed the report of the review meeting on June 23, 1981, which resulted in the verification of the code for use. The inspector had no further questions.

#### 10. Safety Committee

- a. Appendix A, Section 4.4 of the license application (as amended in December 1980) specifies the composition, responsibilities, and meeting frequency requirements for the Wilmington Technological Safety Council. P/P 40-1, "Wilmington Safety Review Committee" appoints the members of the committee (by position) as well as designating the chairman and secretary.
- b. The inspector reviewed the minutes of the meetings held on February 1, May 4, and July 2, 1982. The minutes indicated that a quorum was present. Items requiring action by managers were identified and responsibility assigned. A licensee representative stated that additional meetings were held on October 28 and November 1, but the final minutes had not been proposed.
- c. In inspection report 70-1113/82-02, a violation was identified concerning a failure to conduct meeting frequencies in accordance with Section 4.4. The licensee's corrective actions on this item are identified in their letter dated March 11, 1982. The inspector

discussed the corrective action with a licensee representative and confirmed that the 1982 meetings had met the meeting frequency requirements. The inspector had no further questions and stated that item 82-02-01 was closed.

#### 11. Information Notices

- a. The inspector determined that the licensee had received two Information Notices (INs), the notices had been reviewed, and where appropriate, action was being taken. The inspector had no further questions.
- b. Information Notices reviewed were:
  - (1) 82-15, "Notification of the NRC". A licensee representative stated that the alternate telephone number provided in the IN would be incorporated into WMD emergency procedures.
  - (2) 82-24, "Water Leaking from Uranium Hexafluoride Overpacks". A licensee representative stated that WMD personnel had attended a meeting with DOE regarding this problem prior to the issuance of this IN and had taken action. A review after receipt of the IN indicated that actions previously taken were consistent with the IN and no further action was necessary.

#### 12. Operations

- a. The inspector reviewed the records of the weekly checks of the criticality monitors for June 11 - August 5, 1982, and October 8 - October 29, 1982. The annual calibration check was performed December 3, 1981, in accordance with Nuclear Safety Instruction 0-4.0, Appendix E. The inspector verified that when a monitor did not meet the performance requirements, it was documented and corrective action taken.
- b. Housekeeping in and around the fuel manufacturing plant was satisfactory. No industrial safety or fire hazards were identified.
- c. The inspector verified that operating safety and nuclear safety were posted in work areas. The inspector observed that storage and handling of SNM was in accordance with posted requirements and that storage was in marked areas.

#### 13. Criticality Safety

- a. Nuclear Safety Instruction E-4.0, rev. 5, "Criticality Safety Analysis Methods and Verification" designates the individuals qualified to perform or verify criticality safety analyses, summarizes the acceptable methods for these analyses, and specifies the verification requirements for the analyses. Verification of nuclear safety reviews

must be performed by an independent reviewer, as required by both the license application and approved procedure. The safety reviews include a preoperational audit to verify that the installation agrees with the conditions as analyzed. The inspector reviewed eight criticality safety analysis files and verified that the independent verification of the calculations had been performed and that the procedural requirements had been complied with.

- b. In 1981, a new analysis code, GEMER, was added to the standard codes which are used for criticality safety analysis. The inspection discussed the validation program which was performed to establish the acceptability of the code with licensee representatives. The inspector verified that the code was validated in accordance with ANSI N16.9 and was verified by an outside organization.

#### 14. New Waste Incinerator

- a. License Condition 17 authorizes the licensee to treat or dispose of waste and scrap material by incineration. Amendment 25 of license SNM-1097 authorized the licensee to operate the new incinerator, subject to restrictions on the safe mass limit and survey requirements.
- b. The incinerator is being used to burn waste boxes on a controlled batch basis. Boxes are being selected based on uranium content and assembled into a batch so that the total mass of both U-235 and U-238 are within the limits established by Nuclear Safety Engineering. Incoming boxes are scanned by the Automatic Box Monitor (AMB), which determines the content and enters the data into a process control system. When either of the limits is reached, the control system "locks out" the feeder system. After a batch is burned, the incinerator is shutdown for cleanout and survey. Detail surveys are performed inside the incinerator after each batch burn for evaluation of the material holdup. Incinerator ash is collected in cans, then goes to the Automatic Can Monitor (ACM) for assay of the contents. The ACM is not in use for automatic control of throughput.
- c. The inspector reviewed the incoming box logs which are kept manually and verified that burns completed comply with the established limits. The incinerator and monitors are being operated in accordance with approved Temporary Operating Instructions. Nuclear Safety Release/Requirements have been issued for the operation and are posted at the work stations. A licensee representative stated that the incinerator procedures and requirements would be updated when the unit changes from batch to continuous operation.