



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

AUG 05 1985

Report No.: 70-1113/85-11

Licensee: General Electric Company  
Wilmington, NC 28401

Docket No.: 70-1113

License No.: SNM-1097

Facility Name: General Electric Company

Inspection Conducted: July 8 - 12, 1985

Inspectors: T. R. Collins

7/23/85  
Date Signed

B. K. Revsin

7/23/85  
Date Signed

Accompanying Personnel: C. M. Hosey

Approved by: C. M. Hosey, Section Chief  
EP&RP Branch  
Division of Radiation Safety and Safeguards

7/24/85  
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 55 inspector-hours on site during regular duty hours inspecting: radiation protection program including instruments and equipment used for radioactive protection of personnel; posting, labeling, and control of radiological control areas; shipment of radioactive materials; internal and external exposure controls; general employee training (GET); respiratory protection training and qualifications; previously identified inspector followup items, and IE Information Notices.

Results: No violations or deviations were identified.

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## REPORT DETAILS

## 1. Persons Contacted

## Licensee Employees

E. A. Lees, General Manager  
C. M. Vaughan, Manager Regulatory Compliance  
R. G. Patterson, Manager Fuel Fabrication Operation  
W. C. Peters, Manager Nuclear Safety Engineering  
D. A. Burns, Manager Materials Services  
R. A. Petelinkar, Manager SO & MS  
G. E. Green, Manager Financial Operation  
B. F. Bentley, Acting Manager Manufacturing  
L. A. Sheely, Acting Manager Quality Assurance  
C. Schiltz, Acting Manager MTEO  
D. T. Barbour, Acting Manager Radiation Protection  
R. E. Lennon, Supervisor Manufacturing Training  
R. H. D. Foleck, Senior Specialist Licensing Engineering  
G. M. Bowman, Senior Nuclear Safety Engineer  
P. S. Stansbury, Nuclear Safety Engineer  
B. S. Dunn, Licensing Specialist

Other licensee employees contacted included three technicians, four security force members, and three office personnel.

## 2. Exit Interview

The inspection scope and findings were summarized on July 12, 1985, with those persons indicated in paragraph 1 above. The inspector discussed with licensee representatives their annual evaluation of fixed air sample stations in the process areas as required by their license. The licensee's evaluation was not yet completed and the inspector informed licensee representatives that the evaluation would be reviewed upon subsequent inspection. Licensee representatives acknowledged the inspectors comments. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

## 3. Licensee Action on Previous Enforcement Matters

(Closed) Violation 70-1113/84-17-02 - Failure to provide report of exposure to the NRC within 30 days as required by 10 CFR 20.408(b). The inspector reviewed and verified the corrective actions as stated in General Electric's letter of March 1, 1985.

(Closed) Violation 70-1113/84-04-04 - Failure to monitor for contamination when exiting the Chemet Laboratory. The inspector reviewed and verified the corrective actions as stated in General Electric's letter of April 20, 1984.

#### 4. Audits, Inspections, and Procedural Reviews (83822)

##### a. Audits

SNM-1097, paragraph 2.8.1, requires in part the licensee to conduct quarterly audits of the radiation safety functions in the nuclear manufacturing and support areas. These audits are to be conducted in accordance with approved written procedures which have been approved by the manager of the radiation safety functions. The inspector reviewed approved procedures PNP-40-6, Regulatory Compliance Audits, NSI E-20, Internal Nuclear Safety Audits and PNP 70-29, Quality Assurance, Nuclear Safety and Nuclear Materials and concluded that quarterly audits of the radiation safety functions were conducted in accordance with approved written procedures. Additionally, the inspector reviewed selected quarterly audits which were performed during 1984 and 1985 and determined that the audits were performed as required and appropriate corrective actions taken on audit findings. The inspector had no further questions.

##### b. Air Sampling

The licensee was required by 10 CFR 20.103, 20.201(b), 20.401, 20.403 and 20.405 to control uptakes of radioactive material, assess such uptakes, and to keep records of and make reports of such uptakes.

License SNM-1097, paragraph 3.2.4.2.1 required continuous collection of air samples from each process area, the filters of which were to be changed each shift during normal operating periods or at more frequent intervals following the detection of an event that may have released airborne uranium. The inspector observed the continuous air samplers in the work process areas and verified that they were within their calibration dates and were operative. The inspector discussed with licensee representatives the counting of air filters for each shift and follow-up action by the licensee when air filters exceeded their action level of  $1 \times 10^{-10}$  uCi/cc.

License SNM-1097, paragraph 3.2.4.2.2 required supplementation of the routine radiation air sampling program by backup portable air sample surveys as required to evaluate operational trends or to evaluate breaches in containment. The inspector reviewed the portable air sampling program with the licensee and verified that the portable air samplers were calibrated.

License SNM-1097, paragraph 3.2.4.2.1 required that the radiation safety function annually evaluate fixed filter sampling points for representativeness of personnel exposures and as a part of each radiation safety function review for all licensed process or equipment changes.

Personnel airborne exposure assignments were made based on airborne concentrations in work areas as determined by fixed air sampler results

and individual stay times. The inspector reviewed licensee activities geared to demonstrate that the fixed air samplers gave results that were representative of worker breathing zone airborne concentrations. The licensee's annual reevaluation of representativeness of the fixed air sample stations was in progress at the time of this inspection. The inspector noted to licensee representatives that, for compliance with similar license conditions, other licensees used worker breathing zone sample results acquired by lapel air samplers or fixed multiple head samplers installed in the radiation workers breathing zone for comparison with results obtained by the fixed sampling stations.

c. Instrument Calibration/Facilities and Equipment

The licensee was required by 10 CFR 20.201(b), 20.401, and 20.403 to perform surveys and to maintain records of such surveys to show compliance with regulatory limits.

License SNM-1097, paragraph 3.2.3.3 required that monitoring instruments utilized for radiation safety purposes be calibrated before initial use, after major maintenance, and on a routine basis at least six months following the last calibration, and Nuclear Safety Instruction 0-4.0, "NSE Radiation Protection Instrumentation," specified the frequency for survey instrument source checks.

During plant tours, the inspector examined calibration stickers on radiation protection instruments in use by the licensee staff and those instruments stored in the Health Physics office ready for issue. The inspector determined that the majority of instruments were calibrated off-site by a vendor. The inspector discussed with licensee representatives methods for performing instrument source checks prior to each use and inspected source check logs for various instruments including personnel friskers. Reviewed activities were found to conform to the license condition and to Nuclear Safety Instruction 0-4.0. The inspector verified that adequate instrumentation was available for performance of work in an adequate manner.

d. Bioassay

License SNM-1097, paragraph 3.2.4.3.2 required establishment of weekly and daily urine sampling frequencies where soluble uranium compounds are processed.

License SNM-1097, paragraph 3.2.4.3.3 required establishment of routine in vivo lung counting frequencies for individuals who work in areas where nontransportable uranium compounds are processed. /

The inspector reviewed procedures NSI E-9.0, "Whole Body Counter Calibration" and NSI 0-2.0, "Bioassay Urinalysis" which implemented the above license requirements. Discussions with radiation protection personnel revealed procedural requirement familiarity and full implementation of action levels as specified by the licensee. The inspector observed the whole body counter as well as the equipment for

determining uranium levels in the urine. Evaluation of urinalysis results and methods of back calculating results were discussed with licensee representatives.

e. Procedure Review

License SNM-1097, paragraph 2.7.1 required the establishment and maintenance of written instructions for radiation health and safety practices, and further specified an annual review cycle for these instructions. The inspector reviewed the "Nuclear Safety Instruction" manual and found that all procedures had been reviewed within an appropriate time frame prior to issuance by management.

f. External Exposure Controls

10 CFR 20.101 specifies the applicable radiation dose standards. The inspector reviewed the computer printouts (NRC Form 5 equivalent) for the period January through May 1985 and verified that the radiation doses recorded for plant personnel were well within the quarterly limits of 20.101(a) for 1985.

g. Posting, Labeling and Control

10 CFR 20.203 specifies posting and labeling requirements for containers and areas. Observations by the inspector revealed that labeling and posting were in accordance with the requirements of 10 CFR 20.203 and license requirements.

h. Contamination Control

License Condition 3.2.4.6 specifies controls to be exercised over contamination throughout the plants. Review of records of contamination surveys performed in 1985 and observations by the inspector revealed that the program complied with the contamination control requirements.

i. Posting of Notices

10 CFR 19.11 requires posting of the Form NRC-3 and other pertinent information. The inspector observed posting of the required information.

j. Surveys

10 CFR 20.201(b) and 10 CFR 20.401(b) require that appropriate radiation surveys be made and records maintained of the survey results. The inspector reviewed survey records and found that the surveys were being made and recorded as required.



k. Notification and Reports

10 CFR 20 states certain report and notification requirements as follows:

- 10 CFR 20.402 - Loss or theft of material
- 10 CFR 20.403 - Incidents
- 10 CFR 20.405 - Overexposure
- 10 CFR 20.408 - Termination of work report
- 10 CFR 19.13 - To individuals

Review of records and discussions by the inspector revealed that the licensee has complied with the above requirements.

No violations or deviations were identified.

5. Solid Wastes (88055, 84850)

10 CFR 20.311(d)(3) required licensees to conduct a quality control program to assure compliance with 10 CFR 61.55 and 61.56 which must include management evaluation of audits. The inspector reviewed the licensee's documented quality control (QC) program for compliance with 10 CFR 20.311, 10 CFR 61.55 and 10 CFR 61.56, and reviewed audits submitted to management conducted in these areas in 1984.

10 CFR 20.311 required a licensee who transfers radioactive waste to a land disposal facility to prepare all wastes so that the waste is classified according to 10 CFR 61.55. Records reviewed revealed that the licensee shipped no waste containing radionuclides specified in Table 1 or Table 2 of 10 CFR 61.55, therefore licensee waste was by definition Class A. Concentrations of uranium in the waste were ascertained by direct measurement.

10 CFR 20.311 required that the licensee maintain a tracking system for radioactive waste shipments to verify that shipments have been received without undue delay by the intended recipient. The inspector reviewed selected shipping records maintained by the licensee and verified that waste shipments had been tracked as required.

No violations or deviations were identified.

6. Transportation Activities (86740)

- a. 10 CFR 71.5 requires that licensees who transport licensed material outside the confines of its place of use or delivers such material to a carrier for transport shall comply with the requirements of 49 CFR Parts 170 through 189.
- b. The inspector determined through discussions that the licensee has clearly delineated individuals, organizational entities, authorities and responsibilities for transportation activities. Through reviews of

records, the inspector also determined that the individuals have received proper training.

- c. The inspector reviewed licensee procedures for shipment of radioactive materials and receipt of radioactive materials and found them to be consistent with the licensee conditions and requirements of 10 CFR 20.205.
- d. 10 CFR 71.91 specifies records that the licensee is required to maintain for non-exempt shipments of radioactive material. The inspector verified that the records required by 10 CFR 71.91 were being maintained by the licensee. In reviewing records it was noted that the licensee had made advanced notifications as required by 49 CFR 173.22(b) and 10 CFR 71.89, 10 CFR 73.72.
- e. Procedures were available for maintenance of packages in accordance with the certificate of compliance. Stored shipping containers were observed to be in satisfactory condition.

No violations or deviations were identified.

7. Previous Inspector Identified Items (92701)

(Closed) IFI 70-1113/82-20-03 Review instrument calibration program. The inspector reviewed current instrument calibration procedures and program and concluded that the calibration program was adequate.

8. IE Information Notices (92717)

The following IE Information Notices were reviewed to ensure their receipt and review by appropriate licensee management:

IN-84-24, Physical Requalification of Individuals' to Use Respiratory Protective Devices

IN-84-40, Emergency Worker Doses