



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

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Report No. 70-1113/80-1

Licensee: General Electric Company
Wilmington, North Carolina 28401

Facility Name: Wilmington Manufacturing Department

Docket No. 70-1113

License No. SNM-1097

Inspectors: J. B. Kahle 2/4/80
J. B. Kahle Date Signed
P. W. Steele 2/4/80
P. W. Steele Date Signed

Accompanied by: R. L. Stevenson, NMSS

Approved by: J. B. Kahle 2/4/80
J. B. Kahle, Acting Section Chief, Date Signed
Safeguards Branch

SUMMARY

Inspection on January 21-25, 1980

Areas Inspected

This routine, unannounced inspection involved 68 inspector-hours on-site in the areas of organization, operations review, nuclear criticality safety, and followup on Bulletin 79-19 and an item of noncompliance.

Results

Of the five areas inspected, no items of noncompliance or deviations were identified in three areas; two apparent items of noncompliance were found in two areas [Deficiency-Failure to follow written procedures (80-1-1); Deficiency-Failure to conduct a criticality safety analysis for an activity being conducted (80-1-2)]. No deviations were found.

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DETAILS

1. Persons Contacted

Licensee Employees

- *P. E. Younghans, Manager, Equipment Manufacturing (Acting)
- *E. E. Palmer, Manager, Fuel Support Operations
- *B. F. Bentley, Manager, Fuel Chemical Operations
- *L. J. Kuba, Manager, Materials Operations
- *J. E. Bergman, Manager, Fuel Manufacturing
- *W. J. Hendry, Manager, Regulatory Compliance
- *A. L. Kaplan, Manager, Licensing and Compliance Audits
- *J. A. Mohrbacher, Manager, Nuclear Safety Engineering
- *G. M. Bowman, Senior Nuclear Safety Engineer
- *P. J. von Herrmann, Manager, Fuel Process Technology
- *G. W. McKenzie, Manager, Manufacturing Engineering-Fuel
 - S. J. Menendez, Nuclear Safety Engineer
 - W. B. Haverty, Compliance Auditor
 - D. W. Brown, Manager, Powder Production Operation
 - R. G. Patterson, Manager, Uranium Fuel Fabrication
 - D. L. Tate, Fuel Process Technology Engineer
 - S. P. Murray, Nuclear Safety Engineer
 - J. W. Ludes, Manager, Fuel Bundle Components and Assembly
 - W. C. Peters, Senior Nuclear Safety Engineer
 - T. P. Winslow, Manager, CHEMET Laboratory
 - S. W. Dale, Manager, Chemical Manufacturing Engineering

Other licensee employees contacted during this inspection included four technicians, four operators and two office personnel.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on January 25, 1980 with those persons indicated in Paragraph 1 above. The licensee acknowledged the two items of noncompliance noted by the inspectors.

3. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance 79-19-1: Failure to inspect and accept Commission-approved packaging prior to applying the model number. The licensee documented instructions to the Purchasing Agent to not purchase BU-7 packagings with markings on the outside of the container. The licensee will not provide the drawing document for markings to the vendor. Markings will be placed on the packings by the licensee after initial inspections and acceptance. The inspection procedure has been revised to reflect that the model number must be marked on the packaging after the initial inspection and acceptance of the packaging.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Organization

S. P. Murray was hired recently as a Nuclear Safety Engineer, replacing E. Rollins (see report 70-1113/79-19, paragraph 5.b). Based on his education and experience, he is qualified to hold that position.

6. Operations Review

a. Procedures Review

During a tour of the FMO/FMOX buildings, the inspectors reviewed several operating procedures (PROD's). All were found to be current and had all necessary approval signatures. Operators questioned were aware of the location and content of the procedures.

b. Control Room Operations

- (1) A tour of the chemical area control room was conducted. It was discovered that no single, compact set of procedures specific to operations in the control room exists. Control room operators indicated that they refer to a complete book of PROD's if any procedural question arises.
- (2) One control room operator, when questioned about the proper response to a particular annunciator alarm, gave an inadequate answer. PROD 10.94 ("Annunciators-Chemical Control Room") requires the control room operator to immediately contact the operator in the affected area to inform him of and verify the alarm condition. However, the control room operator indicated that, unless the operator in the affected area first contacted the control room, the alarm could be assumed to be false. When asked if a written procedure existed to support his stated actions, the control room operator referred to PROD 10.05 (Vaporization-ADU and GECO). This procedure did not address the proper response to the subject annunciator alarm. The licensee was informed that, had the annunciator actually alarmed and the control room operator failed to contact the operator in the affected area immediately, the licensee would have been cited for failure to follow procedures.

c. UF₆ Cylinder Handling

During a tour of the UF₆ loading dock area, the inspectors noted ten 2.5 ton UF₆ cylinders lying in the driveway adjacent to the raised

dock. Five of these cylinders were full. The licensee's procedure titled "Shipping and Receiving of UF₆ Cylinders" (PROD 80.05) lists the following requirements:

- Paragraph 5.5: "Cylinders on floor, waiting loading must be temporarily chocked".
- Paragraph 5.6: "Cylinder valve protectors must be used when cylinders are in transit (being moved) or stored without a protective overpack".

The five full cylinders were not chocked, and no valve protectors were installed on them. This failure to follow procedures constituted an item of noncompliance (80-01-01).

7. Nuclear Criticality Safety

a. Criticality Alarm System

The new alarm system (see report 70-1113/79-07, paragraph 8.e) is now operational in the FMO/FMOX buildings, and the old alarm system has been deactivated. While the new system does meet the requirements of 10 CFR 70.24, no formal, approved procedure yet exists for calibrating the detectors. This concern had also been raised by a plant internal audit conducted during the week of January 7, 1980. The detectors were calibrated prior to installation by the vendor (Eberline), and source response data supplied by the vendor has allowed the licensee to conduct source response checks of the detectors. The present intention of the licensee is to remove the detectors and return them to the vendor for calibration on an annual basis. A procedure to formalize the calibration program (likely a revision of NSI E-4.0, Appendix E) is due to be issued by the licensee prior to March 9, 1980. This procedure will be reviewed in a future inspection.

b. Analyses

Several nuclear safety analyses were examined by the inspectors. Verification was made that the analysis methods were authorized by the license. It was verified that the calculations and results were checked by another qualified reviewer. The analyses records showed that an audit had been performed by nuclear safety engineering personnel prior to issuance of a release for operational use.

c. Plant Tour

Observations in the plant process areas revealed that special nuclear material was stored in approved arrays and transported on approved carts which provided for nuclear criticality safe spacings. Special nuclear material was handled in approved containers and in accordance with approved operating procedures. Ten 2½ ton UF₆ cylinders were

observed side by side in the truck aisleway adjacent to the UF₆ cylinder dock in FMO. Discussions with personnel revealed that five were full and five were empty. A licensee representative stated that there was no documentation to show that a nuclear safety review had been performed for placing UF₆ cylinders in the aisleway. Section 4.6.2 of Appendix A of the licensee's application requires that changes that could involve a change in the analysis on which criticality safety was established shall be analyzed and approved in writing by the criticality safety function and documented by a written criticality analysis. Licensee representatives were informed that failure to analyze and document approval for the placement of licensed material in the truck aisleway was noncompliance with the requirements of Appendix A, Section 4.6.2 (80-1-2).

Independent Inspection Effort

The inspectors attended a four-hour training session on radiological and criticality safety. The course is used for retraining experienced employees and qualifying new employees for unescorted access to the controlled area. The instructor thoroughly covered the subject matter. A detailed written examination was administered at the conclusion of the session. At the request of the licensee, written comments on the training were provided by the inspectors to the Licensing and Compliance Audits Manager.

9. IE Bulletin 79-19

This phase of the inspection consisted of a followup examination of the licensee's response to IE Bulletin No. 79-19, Packaging of Low-Level Radioactive Waste for Transport and Burial.

- a. Verification was made that the licensee maintains a current set of DOT and NRC regulations.
- b. Verification was made that the licensee had a current copy of the Chem-Nuclear burial site license and burial requirements.
- c. Verification was made that the licensee had procedures and instructions which had been approved by management for placing proper materials in waste containers and for handling, storing and loading waste containers.
- d. Verification was made that the licensee had provided verbal instructions to personnel who package waste and transport waste containers. The inspector examined the licensee's schedule, along with the list of personnel to attend training classes, for providing special formal training for packaging and transport of radioactive waste. All training is scheduled for completion FW-26.
- e. An examination of procedure P/P 40-6, "Regulatory Compliance Audits", showed that the licensee has established an audit program of activities associated with the transfer, packaging and transfer of low-level

radioactive waste. Verification was made that audits by the Licensing and Compliance Audits auditors had been performed within 60 days of the date of the bulletin.

- f. An examination of several wooden boxes (4x4x4) which were ready for shipment to a burial site showed no evidence of leakage and appeared to be strong, tight packagings. Observation of the contents of one box showed no evidence of any liquids.