

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 72-001/90002(DRSS)

Docket No. 72-001

License No. SNM-2500

Licensee: General Electric Company  
175 Curtner Avenue  
San Jose, CA 95125

Facility Name: Morris Operation

Inspection At: Morris, Illinois

Inspection Conducted: December 18-20, 1990

Inspector: G. M. France, III  
G. M. France, III

01/07/91  
Date

Reviewed By: D. J. Sreniawski, Project Manager, Fuels Facilities and Contaminated Sites

1-7-91  
Date

Approved By: John A. Grobe  
John A. Grobe, Chief Nuclear  
Material Safety Branch

1-9-91  
Date

Inspection Summary

Inspection on December 18-20, 1990 (Report No. 72-0001/90002(DRSS))

Areas Inspected: Routine, unannounced safety inspection including: management and organization controls (IP 88005); radiation protection program (IP 83822); operations review (IP 88020); criticality safety (IP 88015); operator training/retraining (IP 88010); environmental protection (IP 88045); and maintenance and surveillance testing (IP 88025).

Results: The licensee was found to be in compliance with NRC requirements within the areas examined. Most operations are now directed under a maintenance testing and/or radiological monitoring program.

## DETAILS

### 1. Persons Contacted

- \*L. L. Denio, Manager, Plant Services
- T. E. Ingels, Morris Operation Manager
- \*J. D. Kesman, Manager, Plant Operations and Maintenance
- J. McGrath, Safety and Security Engineer
- \*A. Shorkey, Operations Engineer

\*Denotes those present at the exit meeting on December 20, 1990.

### 2. General

This inspection was conducted to examine licensee activities under Special Nuclear Materials License No. SNM-2500, with emphasis on maintenance and surveillance testing performed according to Standard Operating Procedures (SOP). Also examined were the actions taken by the licensee in response to independent audit findings.

### 3. Management Organization and Controls (IP 88005)

The inspector reviewed the licensee's management organization and controls for operations, including realignment of the staff. A review of internal audits and safety committee activities were also performed.

#### a. Organization

There were no significant changes in the structure of the organization that provided health and safety services. The licensee has continued to use the services of a consultant for independent health and safety audits.

#### b. Safety Committees

According to the records reviewed, safety meetings were held within the 45 day interval as required by the license. Specific topics related to safety recertification (Hazardous Communication USEPA and personal exposures) were discussed.

#### c. Audits

During October 1990, the licensee's insurance carrier audited the Morris Operation records for bioassay results, and surveillance and monitoring tests results, and disclosed that all records appeared to be in order.

The licensee's contract radiological safety consultant performed a health and safety audit of Morris operations on October 29-31, 1990. The consultant recommended that the licensee realign staff assignments so that criticality audits are performed as an independent safety function. The licensee indicated that the Manager, Plant Services, will perform independent criticality safety audits in order to comply with this recommendation.

During the course of this inspection, the licensee reported an error in exposure level assigned to a former employee via letter of termination. Subsequently, the error was corrected.

The inspector determined that independent audits and internal reviews are being implemented in accordance with license conditions, and the licensee's follow-up actions are adequate.

No violations or deviations were identified.

4. Radiation Protection (IP 83822)

The inspector reviewed the licensee's internal and external exposure control programs including the required records, reports, and notifications.

a. Internal Exposure Control

Results for gamma spectroscopy analysis of 115 urine samples collected for the first three quarters of 1990 indicated that samples with cesium-134,137 and cobalt-60 concentrations were equivalent to less than 2% of the maximum permissible body burden (MPBB). A controlled sample was spiked with cesium-137 (294 +/- 4 picocuries or less than 2% of the MPBB) and submitted to a contractor each quarter. The contractor's results averaged 283 +/- 18 picocuries of cesium-137 per liter which shows good agreement with the licensee's standard. No significant problems were noted.

Whole body count results were reviewed for operations and maintenance personnel for the 1990 operating period. On September 26-28, 1990, the whole body count performed on G. E. Morris workers showed levels of cobalt-60 and cesium-137 that were less than 1% of MPBB (11 nanocuries cobalt-60; and 300 nanocuries cesium-137).

b. External Exposure Control

Workers assigned to the basin area and cask receiving area are issued TLDs and self-reader dosimeters (SRD). SRD doses are recorded daily, while TLDs are analyzed through a vendor monthly exchange program. The highest exposure assigned to an individual for the 1990 operating year was 530 millirem. The licensee noted that no exposure to individuals was detected during November 1990 which was indicative of the limited operation.

5. Operation Review (IP 88020)

The licensee has not received any spent fuel shipments since January 26, 1989. Hence, operations have been reduced to a maintenance and radiological surveillance mode. The major activity for the licensee is to maintain the basin and basin water quality to prolong the storage of reactor spent fuel. The inspector observed that irradiated fuel

bundles are stored in authorized fuel storage baskets under a minimum of 9 feet of water (above the uppermost top of the fuel bundle). The specific limiting conditions and surveillance requirements for basin water quality are discussed in this report under Section 6, Maintenance surveillance.

No violations or deviations were identified.

6. Maintenance Surveillance Tests (IP 88025)

The inspector reviewed the results of the surveillance tests required by the Technical Specifications of Appendix A to License No. SNM-2500. The required measurements of basin water quality, basin leak rate and operability, criticality monitors, and stack effluent air were made at the specified frequencies. The tests were performed in accordance with Standard Operating Procedures (SOPs). The inspector reviewed tests results according to the following SOP requirements:

SOP No.	SUBJECT
16-11	Basin Leak Detection Alarm Compliance Test Data Sheets
16-12	Basin Leak Detection Calibration Compliance Test Data Sheets
16-14	Cladding Vault Leak Detection Compliance Test
16-15	Basin Cooler Leak Detection Compliance Test
16-96	Criticality Detector Operability
16-110	Sealed Source Leak Check Compliance Test
16-10	Basin Water Quality Analysis Compliance Test

The inspector noted that minor problems were identified (replacement of power supply for criticality monitors; alarm point was adjusted from 450 millirem to 700 +/- 100 millirem) and corrected according to SOP requirements.

No violations or deviations were identified.

7. Criticality Safety

The inspector confirmed that the licensee continues to store irradiated fuel bundles in authorized fuel storage baskets which are submerged 9 feet below the water surface.

During a recent internal audit, the licensee discovered that an unscheduled activation of the criticality alarm was caused by a faulty power supply. The power supply was rebuilt and returned to service. In

response to the inspectors inquiry, the instrument maintenance specialist stated that the power supply had been in service nearly 20 years. However, back-up units are available. The faulty power supply caused some drift in the monitor set point (700 +/- 100 to 400 millirem). In order to prevent a similar incident, the licensee plans to rebuild all four units.

The licensee also noted that the criticality monitors (area radiation monitors) have automatic read-out to the control room. There was no indication that high radiation was detected when the unscheduled alarm occurred.

No violations or deviations were identified.

8. Training/Retraining Operators (10 CFR 88010)

The inspector reviewed the licensee's program for recertifying operators. The operators are required to pass a recertification exam every two years.

In accordance with SOP's operators are cross trained (multicraft operators) in the handling techniques of spent fuel movement, quality assurance requirements for cask handling, and crane operations.

No violations or deviations were identified.

9. Environmental Protection

Acid and base waste streams are discharged from the resin units used to maintain basin water quality. In accordance with EPA requirements, the streams are collected in a mixing tank adjusted to the appropriate pH range and discharged to an evaporation pond. The inspector examined the data for radiological content and determined that the mixture met the release limits of 10 CFR 20.

The licensee, in conjunction with Commonwealth Edison's Dresden Nuclear Power Reactor, participates in an environmental monitoring program. Over a 10 month sampling period (1990 operations) surface water samples, quarterly program for 9 off site locations (TLD badges), airborne particulate samples and quarterly monitoring for iodine-131 samples were collected and analyzed by a contractor. According to the report, the area sample results were less than the limits required by NRC/EPA regulations.

No violations or deviations were identified.

10. Exit Meeting

The scope and findings of the inspection were discussed with licensee representatives (Section 1) at the close of the onsite inspection on December 20, 1990. The following matters were discussed:

- a. It was noted that the licensee is servicing the power supply units for each criticality monitor (Section 7).
- b. The licensee will make staff assignments to support independent criticality audits (Section 3).
- c. It was noted that the licensee corrected an error in the assignment of exposure to a former employee, through the use of internal audits (Section 3).

During the course of the inspection and the exit meeting, the licensee did not identify any documents or references to specific processes as proprietary.