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

MAY 9 1984

Report No. 70-1113/84-05

Docket No. 70-1113 License No. SNM-1097 Safeguards Group No. III

Licensee: General Electric Company
Wilmington, NC 28401

Date of Inspection: March 26-29, 1984

Type of Inspection: Special Unannounced Material Control and Accountability

Inspectors: G. A. Todd, Safeguards Auditor — 5/7/84 Date Signed

J. W. Bates, Safeguards Chemist — 5/8/84 Date Signed

Approved by: E. J. McAlpine, Chief, Material Control and Accountability Section, Safeguards Branch, Division of Radiation Safety and Safeguards — 5/9/84 Date Signed

Inspection Summary

Areas Inspected: Measurements and Internal Controls

The inspection involved 54 inspector hours on site by two NRC inspectors and was begun during the regular hours.

Results: The licensee was found to be in compliance with NRC requirements in the two areas examined during the inspection.

REPORT DETAILS

Report No. 70-1113/84-05

1. Key Persons Contacted

W. J. Hendry, Manager, Regulatory Compliance
*C. M. Vaughan, Manager, Licensing and SNM
*R. H. D. Foleck, Licensing Specialist
R. I. Parnell, Supervisor, Chemical Laboratory
T. P. Winslow, Manager, Chemical Laboratory
R. C. Church, Manager, Manufacturing System Operations

The inspectors also interviewed several other licensee employees.

*Denotes those present at the exit interview

2. Review of Concerns Regarding Measurements and Internal Controls

During the initial meeting with licensee management to discuss the scope of the review relative to the receipt by NRC of allegations pertaining to the GE facility, the inspectors were apprised that GE management was also in receipt of certain alleged improprieties from one of their employees. Since the allegations received by NRC and the allegations received by GE were in similar areas, the inspectors incorporated the stated concerns from both sources into their review.

a. MC 85206 Measurements

It was asserted by a General Electric Wilmington Manufacturing Department employee, that on two different occasions calibrations/verifications were not performed on enrichment analyzers following a detector change. Enrichment analyzers are used to determine the percent uranium-235 in a wide variety of low enriched UO2 powder and pellet samples in which the sample is converted to urano uranic oxide, chemically treated, and a portion of the sample transferred to a counting tube for analysis.

The written procedure for this measurement entitled Isotopic U-Count Limit Change Criteria No. C01 411, Revision 3, dated February 9, 1983, specifies that at the beginning of a detector calibration, following a [24] hour burn-off, a calibration will be performed using [six] standards that span the range of operation followed by a verification of [three] sample standards that also span the range of operation. If the count rate remains in specified limits, the laboratory technician may then begin measuring a maximum of [12] unknown production samples. Each

series of [12] production samples must be followed by either remeasurement of the calibration or verification standards to obtain an aggregate of [6] high standard values that are used for the calculation of uranium count and the minimum uranium count limit.

The concerned employee asserted that the measurement of [six] calibration standards was not being performed according to procedure. It was determined that the understanding of the employee concerning the calibration procedure was in error. It was later determined through verification of counting data records that combinations of calibrations and verifications were measured during the period when isotopic analyses of production samples were performed. These measurements of calibration/verification standards were performed a total of [six] times as specified by the licensee's procedure. That production counting logs did not contain calibration data, indicated to the employee that calibrations had not been performed. This lack of data in the counting logs was evident only in instances where calibrations were being performed and production samples were not being analyzed. This appears to have given the concerned worker the misconception that calibrations/verifications were not being properly performed.

Through inquiry of laboratory managers, it was determined that the subject calibration log book entries are categorized as working documents that are generated during production sample analyses as a readily available summary of counting data to be used in analyzing system stability and trouble shooting during periods when minimum uranium limits are exceeded. The log was not intended to record all calibration and verification standards data as recorded by the printed Laboratory Measurement Control System (LMCS) tape.

[It was determined through independent review of the calibration recording tape that during periods when the calibration log pages were blank, the Laboratory Measurement Control Program was recording the calibration data as performed.

b. MC 85210 Internal Control

Computer Access Controls

It was asserted by an employee of the General Electric Wilmington Manufacturing Department that data stored in the computer from isotopic analyses performed in the chemical laboratory are accessible and could be altered. Specifically, it was asserted that transaction codes assigned to laboratory supervisors that allow changes to analytical data associated with uranium samples were being used by laboratory technicians and that this practice was condoned by supervisors. Additionally, it was asserted that individual technician's password

that allow transaction entry into the Laboratory Measurement Control System (LMCS) were being used by fellow laboratory technicians to create false data or to release data created by other technicians.

Through inquiry of laboratory management and selected laboratory technicians together with a review of pay number, password, and transaction controls, the inspectors were able to determine the following:

(1) The Chemet Laboratory Measurement Control System (LMCS) incorporates two transaction codes that allow the identified user to change data associated with analytical measurements of uranium samples. These transaction codes are referred to as LMCS 902/903 transactions entitled "Update of the Sample and Test Records," the instructions for which are dated August 4, 1983, and July 14, 1983, respectively. The transaction codes identified above allow the user to correct data input errors associated with production samples but cannot be used to change measurement results for standards. Additionally, modifications of results of production samples were restricted to use by laboratory supervisors only.

It was acknowledged by laboratory management that 902/903 transactions were used by laboratory technicians in the absense of their supervisors but that the authority to do so had been granted to them through a verbal delegation. This delegation was normally granted during weekends, a time when supervisors would not normally be present in the laboratory. Interviews of several laboratory personnel substantiated the use of verbal delegations by supervisors regarding the use of 902/903 transactions. When apprised of the fact that the use of these transactions did not provide traceability for determining who actually corrected the data or why the changes were made, the licensee modified his operational procedures regarding restricted access to these transaction codes.

In a laboratory policy memorandum dated January 19, 1984, the licensee restated that the identified transaction codes could not be used to change results of standards; re-emphasized to supervisors the need for restricting access to the codes; indicated that supervisors have been instructed to not divulge their passwords for any reason; and specified that at anytime, a supervisor feels his password has become known to change it; and in the event of suspected password use, he/she shall investigate the condition immediately.

This measure and its timely implementation was deemed by the inspectors to be appropriate and acceptable for improved [illegible] trative controls over laboratory measurements.

(2) When the use of the [HP9887] computer was initiated in November 1982, [the password of the technician performing the sample solution weighing was used as the password associated with the identity of the persons performing the key process steps for each sample. This password was also used as the sample identifier on the LMCS results report.] Since the sample measurement process usually spanned beyond a single work shift the individual who actually released the sample results would not normally be the same individual who had actually prepared the sample or performed the measurement. It is possible that a shift technician who transacts data from the [HP9887] to LMCS could innocently allow incorrect data to be transmitted. [The LMCS results report would then show the incorrect data and the password of the technician who weighed the sample and not the password of the technician who entered the data incorrectly.] Because of this [software limitation,] the indiscriminate use by technicians of each other's passwords was necessary to promptly release sample measurement data from the [HP9887] to LMCS.

The licensee modified his procedure for password control on January 25, 1984, and modified the transmitting identifier within the [HP9887] computer on January 17, 1984. These referenced modifications will restrict the issuance and changing of passwords to a single authorized individual. Also transactions between the [HP9887] and the [LMCS will record the password of the technician releasing the results.] The inspectors detected no evidence of intentional creation of false data within LMCS. The modifications as implemented by the licensee were deemed by the inspector's to be an appropriate system improvement to the administrative controls and appear to be consistent with the generally accepted intent of the principles of computer surety.

The evaluation of the results of these modifications and related laboratory systems, will be performed during subsequent inspections (84-05-01).

3. Exit Interview

The inspection scope and findings were summarized on March 29, 1984, with those persons indicated in paragraph 1 above.

19

Yellow

JUN 18 1984

General Electric Company
ATTN: Mr. J. A. Long, General Manager
Wilmington Manufacturing Department
P. O. Box 780
Wilmington, NC 28402

Gentlemen:

SUBJECT: REPORT NO. 70-1113/84-06

Thank you for your response of June 7, 1984, to our Notice of Violation issued on May 9, 1984, concerning activities conducted at your Wilmington facility. We have evaluated your responses and found that it meets the requirements of 10 CFR 2.201. We will examine the implementation of your corrective actions during future inspections.

We appreciate your cooperation in this matter.

Sincerely,

J. Philip Stohr, Director
Division of Radiation Safety
and Safeguards

cc: C. M. Vaughan, Manager
Licensing and Nuclear Materials
Management Unit

bcc: Document Control Desk
Safeguards and Material Program
Branch, EWW-359
Fuel Facility Safeguards Licensing
Branch, 881-SS
License Fee Management Branch
State of North Carolina

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