



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

Report No. 70-1113/84-16

Docket No. 70-1113

License No. SNM-1097

Safeguards Group No. 3

Licensee: General Electric Company, Nuclear Fuels Manufacturing Department

Date of Inspection: November 27-30, 1984 and January 14-16, 1985

Type of Inspection: Unannounced Material Control and Accountability

Inspector:

E. J. McAlpine
J. W. Bates, Safeguards Chemist for

2/8/85

Date Signed

Approved by:

E. J. McAlpine
E. J. McAlpine, Chief, Material Control and
Accountability Section, Nuclear Materials
Safety and Safeguards Branch, Division of
Radiation Safety and Safeguards

2/8/85

Date Signed

Inspection Summary

Areas Inspected: This routine, unannounced inspection involved 50 inspector-hours by one NRC inspector in the area of measurements.

Results: One violation was identified - failure to investigate and take corrective action in a timely manner when control standards exceeded the 0.05 control limits.

REPORT DETAILS

Report No. 70-1113/84-16

1. Key Persons Contacted

- *J. R. Bergman, Manager, Manufacturing
- *C. M. Vaughan, Acting Manager Regulatory Compliance
- *B. F. Bentley, Manager, Fuel Chemical Operation
- *W. W. McMahon, Manager, Quality Assurance
- *D. Starr, Manager, Site Support Quality
- *T. P. Winslow, Manager, Chemet Laboratory
- *C. Schiltz, Manager, Fuel Fabrication Engineering
- *G. R. Mallett, Senior Engineer, L&NMM
- *R. C. Hawk, Manager, Operational Planning
- *H. Stern, Manager, MT&EO
- *R. G. Patterson, Acting Manager, Manufacturing

The inspector also interviewed several other licensee employees.

*Denotes those present at the exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 30, 1984 and January 16, 1985, with those persons indicated in Paragraph 1 above. One violation (paragraph 3.b) was discussed concerning the failure to investigate and take corrective actions in a timely manner when measurement control data exceeded control limits. The licensee acknowledged the finding and took no exceptions.

3. Review of Employee Concerns Regarding Measurements (MC-B5207)

- a. It was asserted by a General Electric Wilmington Nuclear Fuels Manufacturing Department employee that (1) an out-of-service tag was improperly removed from an analyzer on August 23, 1982 in violation of a General Electric procedure, (2) that production samples were released during the stabilizing period for a new detector, and (3) that laboratory employees were discouraged from talking to the NRC inspectors. The NRC review of these employee concerns was as follows:

(1) Allegation

An out-of-service tag was improperly removed from an analyzer on August 23, 1982, in violation of a General Electric procedure.

Discussion

The manager of the Chemical Laboratory was interviewed and procedures relating to equipment tagging were examined. A procedure entitled Administrative, Lock, Tag and Try, No. 302 dated October 1, 1980, was examined. The procedure specifies that a yellow "out-of-service" tag is used when there is reason not to operate the equipment and there is no danger to personnel. The procedure also requires that whenever the yellow "out-of-service" tag is to be placed on equipment, the reason is to be noted and the tag shall be signed and dated. Only the person signing the tag or supervisor of his area is permitted to remove the tag.

The laboratory manager was questioned about the circumstances surrounding the removal of an out-of-service tag on or about August 23, 1982. He said that he recalled the incident. He had been called at home and, not knowing the status of the analyzer at the time, he had instructed a technician to tag the analyzer out-of-service to prevent its use for analyzing production samples. The laboratory manager indicated that the out-of-service tag was presumably removed by the laboratory supervisor (which is allowed by procedure) and operations resumed after it had been determined that the analyzer was functioning properly. The tag in question could not be visually examined by the inspector because yellow out-of-service tags are not retained once they have been removed from a piece of equipment. The bottom of a tag states that any employee operating apparatus to which the tag is attached, unless authorized to do so, will be subject to dismissal.

The inspector requested that the laboratory management review applicable shift logs for any reference to equipment being tagged as out-of-service. The licensee performed the review and could find no written reference regarding this incident.

Through inquiries of the three laboratory supervisors and the process control specialist it was determined that two of the laboratory supervisors and the process control specialist had no knowledge concerning the removal of an out-of-service tag on August 23, 1982. The "Z" shift supervisor said that he recalled discussing the matter with a concerned employee. The supervisor stated that he may have personally removed the tag, but that he could not be certain. He further stated that a technician on the preceding shift had informed him that the minimum U-count had been determined for the analyzer in question. The technician was interviewed and the matter discussed; however, the technician could not recall the incident. To gain further information regarding equipment changes the inspectors interviewed a measurement systems specialist in the Calibration and Instrumentation Support Unit. This was formerly the Technical Equipment Support Unit and has the responsibility for detector change-outs. He could not recall the incident.

It was disclosed during this interview that records documentation was insufficient to provide information concerning detector change-outs. It should be noted that logs of this type are not required to be maintained by the licensee and are used primarily for trend analysis related to equipment failures. The technician who initially placed the out-of-service tag on the instrument on August 22, 1982, was interviewed by the inspector. The technician indicated he recalled the incident and had tagged the equipment out-of-service as a precautionary measure. The decision to apply the tag was made in concert with the technician's supervisors. The technician could recall no irregularities with the incident.

Findings

On the basis of discussions with licensee employees and the lack of physical evidence, the inspector could not determine whether or not the tag had been removed improperly.

This allegation could not be substantiated. No violations or deviations were identified.

(2) Allegation

Production samples were released at 0243 and 0524 hours on August 21, 1982 during the stabilizing period for a new detector on enrichment analyzer No. 4.

Discussion

The GE written procedure for this measurement method specifies that at the beginning of a detector calibration, following a 24 hour burn-off, a calibration be performed using six sample standards that cover the range of operations followed by a verification of three standards that also cover the range of operations. Following a 24 hour burn-off time that began at 1000 on August 19, 1982, a calibration was performed at 1121 on August 20, 1982. Between the hours of 1121 and 2328 on August 20, 1982, a total of eight calibrations or calibration/verifications were performed. Again on August 21, 1982 between 0004 and 0242 hours two additional calibration/verifications were performed prior to the documented analysis of twelve unknown production samples. The high standard (3.978 weight percent U-235) was counted at least six times and completed at 0750 on August 21, 1982 as specified by procedure COI-411, Rev. 2, dated February 10, 1982. The printed Laboratory Measurement Control System (LMCS) recording tape was examined to verify dates, times and events as described. The procedure was modified on February 9, 1983, to clarify that it was acceptable to measure production samples during the period of collecting the six high standard counts data used to determine the minimum U-count limit.

Findings

Production samples were not released prior to equipment stabilization. They were not measured until after stabilization of the equipment had been completed.

This allegation could not be substantiated. No violations or deviations were identified.

(3) Allegation

Laboratory employees were discouraged from talking to the NRC inspectors.

Discussion

Twelve laboratory technicians were interviewed and were specifically asked if they had been discouraged from talking to the NRC inspectors. Two of the twelve technicians interviewed indicated that they were told to refer any questions asked of them to their supervisors but they were not discouraged from talking to NRC inspectors. The remaining technicians all indicated that the matter of communications was never discussed between themselves and management.

Findings

This allegation could not be substantiated. No violations or deviations were identified.

- b. The program for monitoring and controlling the performance of standard measurements for some of the analytical methods used for accountability purposes was examined. The analytical methods for uranium and U-235 have control limits determined by statistical techniques and based upon the historical performance of the method. Each measurement system has control limits at the 0.05 and 0.001 level of significance that are reevaluated at least once each material balance period. The measurement methods, the frequency of out-of-control situations, the periods examined, and the number of standard measurements performed during the period are presented in Table 1.

Each time control limits are exceeded, an investigation is performed and the probable cause of the occurrence and the corrective actions taken are documented. During the review of control chart data the inspector determined that neither the measurement control coordinator nor his officially designated alternate were being notified when control data fell between the .05 and .001 control limits.

A letter to the licensee from the Office of Nuclear Material Safety and Safeguards dated May 14, 1984, presented the NRC position on timely investigation and corrective action for control data falling between the .05 and .001 control limits. The May 14, 1984 letter instructed the licensees to implement a program for reporting a single or two

consecutive data points that fall between the .05 and .001 control limits to the measurement control coordinator or his officially designated alternate within 48 and 24 hours, respectively. This criteria was effective on the date of the letter. Sixteen data points fell between the .05 and .001 control limits during the period reviewed for these measurement systems identified in Table I. These occurrences were as follows: Three consecutive data points exceeded the .05 control limit for the total metallic impurity (TMI) standard during the period October 8-12, 1984; two consecutive data points exceeded the .05 control limit again for the TMI standard during the period November 1 and 2, 1984; two consecutive data points exceeded the .05 control limit for a uranium titrimetric standard on November 8, 1984; and the remaining data points were single occurrences that exceeded the .05 control limits. None of those occurrences were reported to the measurement control coordinator or his officially designated alternate; thus the licensee was not investigating and taking corrective action in a timely manner. This is a violation. (84-16-01)

4. Independent Inspection Findings (MC 92713)

The NRC inspector observed the sampling of the V-108 fluoride waste system on November 29, 1984. Two samples were withdrawn from the daily composite sample, one routine and one replicate. The routine sample (No. 625816) was forwarded to the laboratory for analysis of uranium and other attributes. The replicate sample is retained, composited and analyzed by an off-site laboratory for uranium-235 enrichment. It was determined that the approved sampling procedure was followed, that the sample containers were properly labeled and that sampling information was provided to permit followup.

TABLE 1

CONTROL CHART DATA

MEASUREMENT METHOD	CONTROL STANDARD	0.05 CONTROL LIMIT EXCEEDED NUMBER PERCENT	0.001 CONTROL LIMIT EXCEEDED NUMBER PERCENT	NUMBER OF STANDARDS MEASURED	TIME PERIODS	
O/U RATIO	LER 002	3	3	0	0	10/1/84-11/15/84
PERCENT U-235	RIP003	0	0	0	0	10/2/84-11/12/84
THI	MIRVI	5	16	0	0	10/1/84-11/15/84
LUM 100 PPM	2029	2	4	0	0	10/1/84-11/15/84
U-TIT	UNIR04	3	14	0	0	10/2/84-11/9/84
U-TIT (SCRAP)	RIP006	0	0	0	0	10/3/84-11/14/84
* U-TIT	UNIR05	3	20	0	0	10/25/84-11/14/84

* replaces UN100h

MAR 9 1983

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

Gentlemen:

SUBJECT: REPORT NO. 70-1113/83-05

This refers to the routine inspection conducted by Mr. J. W. Sabados of this office on February 8-11, 1983, of activities authorized by NRC License No. SNM-1097 for the Wilmington facility and to the discussion of our findings held with Mr. C. M. Vaughan, Manager, Licensing and Nuclear Material Management, at the conclusion of the inspection.

Areas examined during this inspection included your program for nuclear material control and accountability under the applicable provisions of Title 10, Code of Federal Regulations, Part 70, "Special Nuclear Material", and specific license conditions. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, performance tests, and observations by the inspector.

During the inspection, it was found that certain activities under your license appear to violate NRC requirements. These items and references to pertinent requirements are listed in the Notice of Violation enclosed herewith as Appendix A. Elements to be included in your response are delineated in Appendix A.

We have examined actions you have taken with regard to previously reported unresolved matters. The status of these items is discussed in the enclosed report.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, activities involving safeguards and security measures are exempt from public disclosure; therefore, the enclosures to this letter with the exception of the report cover page, which is an inspection summary, will not be placed in the Public Document Room.

The responses directed by this letter and the enclosures are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

General Electric Company

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MAR 9 1983

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

J. Philip Stohr, Director
Division of Emergency Preparedness
and Materials Safety Programs

Enclosures:

- 1. Apperdis A, Notice of Violation
(Exempt from Disclosure)
- Inspection Report No. 70-1113/83-05
(Exempt from Disclosure)
- Inspection Summary
(Not Exempt)

w/enc:

M. Vaughan, Manager
Licensing and Nuclear Materials
Management Unit

cc w/encs:

Document Management Branch
Chief of Safeguards Branch, DSRSI
Chief, Division of Safeguards
Licensing Branch, BRSIS

cc w/enc:

License Fee Management Branch

cc w/ Inspection Summary:
State of North Carolina

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CPBryell
02/7/83

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EJG
03/9/83

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JPStohr
03/9/83