



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

Report No.: 70-1113/83-01

Licensee: General Electric Company
 Wilmington, NC 28401

Docket No.: 70-1113

License No.: SNM-1097

Facility Name: Wilmington Manufacturing Department

Inspection at Wilmington, North Carolina

Inspector: *K. P. Barr* 1/18/83
 C. M. Hoisey / Date Signed

Approved by: *K. P. Barr* 1/18/83
 K. P. Barr, Section Chief / Date Signed
 Engineering Program Branch
 Division of Engineering and Operational Programs

SUMMARY

Inspection on January 3-7, 1983

Areas Inspected

This routine, unannounced inspection involved 34 inspector-hours on site in the areas of external exposure control, radiological surveys, respiratory protection training, posting, labeling and control of radiological areas, review of radiological aspects of an unplanned airborne radioactivity release and followup on previous enforcement and inspector followup items.

Results

In the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *W. J. Hendry, Manager, Regulatory Compliance
- *M. E. McLain, Manager, Nuclear Safety Engineering
- *D. W. Brown, Manager, Powder Production Unit
- *C. M. Vaughan, Manager, Licensing and Nuclear Materials Management
- *W. B. Smalley, Manager, Environmental Protection
- *R. L. Torres, Radiation Protection Supervisor
- R. G. Lewis, Radiation Protection Shift Supervisor
- D. T. Barbour, Radiation Protection Shift Supervisor
- R. H. Foleck, Senior Licensing Engineering Specialist
- S. P. Murray, Nuclear Safety Engineer
- E. L. Jeffords, Nuclear Safety Engineer

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 7, 1983, with those persons indicated in paragraph 1 above. The inspector identified one apparent violation (use of a UF6 cylinder overpack which did not meet required Department of Transportation Specifications). The Manager, Regulatory Compliance acknowledged the inspector's comments.

On January 11, 1983, the licensee was informed that use of the UF6 cylinder overpacks which failed to meet DOT requirements would be considered a violation of 10 CFR 71.5. However, since the violation was identified by the licensee, is a severity level IV or V violation, was corrected in a reasonable time and was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation, a Notice of Violation will not be issued in accordance with Appendix C of 10 CFR 2.

3. Licensee Action on Previous Enforcement Matters

(Closed) Violation (82-10-01) Personnel Contamination Survey Practices. The inspector reviewed the licensee's corrective actions. The licensee has established new personnel contamination survey procedures, developed a video tape program covering the new procedures and has presented the tape to approximately 40% of the plant workers. In addition, the licensee is randomly selecting plant workers who have already passed through the frisking station and is resurveying them as a check of the worker frisking practices. The inspector had no further questions.

(Closed) Violation (82-16-03) Exceeding Contamination Limits for Release of Material to Unrestricted Area. The licensee has reviewed and revised as appropriate the internal procedures and technical information used by radiation protection personnel to release material for unrestricted use. Radiation Protection Personnel have received briefings on the new procedures and criteria for release. New survey equipment has been received. The inspector had no further questions.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Action on Previous Inspector Followup Items

- a. (Closed) IFI (82-10-03) Respiratory Protection Training. The inspector reviewed the video tape prepared by the licensee to ensure that all the required information is presented to each individual who is qualified to wear respiratory protection equipment. The tape has been shown to some plant employees as a part of annual retraining and will be shown to others as their retraining comes due. It will also be shown to all new hires as a part of their initial training. The inspector had no further questions.
- b. (Open) IFI (82-16-02) Evaluation of Stack Sampling. The licensee was unable to provide documentation that a velocity traverse had been performed in the chemical area and FMOX building exhaust stacks. However, the Manager, Environmental Protection stated that a velocity traverse would be performed and the sample probe located to draw a representative sample of the air exhausted from the chemical area when the installation of new stacks is completed. The old chemical area stack has deteriorated and will be replaced within 90 days. Velocity traverses will also be performed in the FMOX stacks within this same timeframe. This item will remain open pending completion of the traverse and a review of the data by the inspector.
- c. (Closed) IFI (82-20-01) Revised Semiannual Effluent Monitoring Report. The inspector reviewed the revised effluent monitoring report submitted to the NRC on October 1, 1982, and had no further questions.
- d. (Closed) IFI (82-20-02) Investigation of V103 Tank Overflow. The inspector reviewed the licensee investigation report for the tank overflow event and the corrective action taken or being taken and had no further questions.
- e. (Open) IFI (82-20-03) Review of Instrument Calibration Program. The TASC-12 laboratory instruments were recalibrated by the vendor in September, 1982 and supporting documentation was retained by the licensee. An audit was performed by the licensee's Regulatory Compliance Staff on November 24, 1982, to ensure compliance with Procedures and Practices 70-23, Rev 5, Instrumentation and Controls Calibration and Maintenance. In addition, the licensee has contracted

an outside consulting company to review the entire instrument calibration and control program. This item will remain open pending completion of the consultant's review and development of corrective actions by the licensee.

6. Followup on IE Bulletins, Circulars and Notices

Notice 82-24, Water Leaking From Uranium Hexafluoride Overpacks. This notice discussed problems encountered by Department of Energy (DOE) facilities as a result of water in the overpacks used for shipping UF6 cylinders. It also discussed the fact that some fuel fabrication plants are returning overpacks that are in poor condition to DOE facilities for reuse.

The licensee receives UF6 from DOE facilities in licensee-owned Department of Transportation (DOT) Specification 21PF-1 overpacks with 30 inch cylinders (49 CFR 173.396(b) lists the acceptable packages for shipping fissile materials). The use of the 21PF-1 overpack is authorized by 49 CFR 173.396(b)(6). Detailed specifications for this overpack are contained in 49 CFR 178.121, Specification 21PF fire and shock resistant, phenolic foam insulated, metal overpack. 49 CFR 178.121 specifies that the drawings in CAPE-1662, including the bills of material, are a part of the specifications.

The licensee's 21PF-1 overpacks are currently constructed of 304 or 304L stainless steel. They have been in use approximately 30 months. In response to a general notice from DOE that UF6 would not be shipped from their facilities in overpacks that were deteriorated or did not meet the DOT specifications, the licensee began a review of their overpacks. This review led to the discovery that the CAPE-1662 drawings, referenced in 49 CFR 178.121, specified that all metals be carbon steel ASTM A-7 or A-36, unless noted. The licensee also noted that the drawing required the gasketed matting surface between the upper and lower half of the package to be a "step-down" matting surface rather than a "step-up" matting surface as is presently used on the licensee's overpacks. A review of licensee records indicate that extensive communications between the licensee and DOE and the licensee and the NRC had taken place prior to the time the licensee fabricated the new overpacks. There was general agreement that the changes improved the overpacks and did not alter the conclusions reached in the safety analysis of the overpack. However, no formal request to modify the specification for the overpack to incorporate the changes made by the licensee was submitted to the DOT, nor was a request made to the NRC for issuance of a certificate of compliance for the modified overpack prior to the modifications.

The licensee hand carried a request for the issuance of a certificate of compliance for the modified overpack to the NRC on November 19, 1982. The NRC issued Certificate of Compliance 4909 the same day. In reviewing the licensee's shipping records for the 21PF-1 overpacks over the past year, the inspector noted that on several occasions, the licensee returned cylinders to DOE facilities which contained quantities of fissile material which

required the use of the overpack. For example, five cylinders containing from 121 to 16 grams of U-235 (in approximately 4500 to 900 grams of UF₆) were returned to a DOE facility in September 29, 1982 using the 21PF-1 overpacks.

The inspector stated that use of an 21PF-1 overpack to transport fissile material outside the confines of the licensee's facility which did not conform to the specifications in 49 CFR 178.121 was a violation of 10 CFR 71.5. However, since the violation was identified by the licensee, is a severity level IV or V violation, was promptly corrected and was not a violation that could reasonably be expected to have been prevented by the licensee's corrective actions for a previous violation, no enforcement action will be taken in accordance with Appendix C to 10 CFR 2.

7. External Exposure Control

The inspector discussed the dose monitoring program with licensee representatives. The inspector reviewed the monthly exposure computer printouts for the period of October and November, 1982 and the quarterly exposure printouts for the 3rd Quarter 1982 and verified that the radiation doses recorded for plant personnel were well within the NRC limits. The inspector also, reviewed the procedure used by the licensee to investigate and estimate exposures for lost or damaged TLDs and the capability of the licensee to retrieve previous exposures and prepare termination reports required by 10 CFR 20.408. No violations or deviations were identified.

8. Internal Exposure Control

By review of records, observations and discussions with licensee representatives, the inspector evaluated the licensee's respiratory protection program including engineering controls, MPC-hr controls, use and storage of respirators. The inspector had the licensee use a smoke tube to qualitatively check the fit of respirators being worn by several randomly selected plant workers. All workers tested had a satisfactory fit. The inspector reviewed Practice and Procedures 40-22, Respiratory Protection Program, which establishes the licensee's respiratory protection program. No violations or deviations were identified.

9. Radiological Surveys

The inspector selectively reviewed the records of radiation, contamination and airborne radioactivity surveys performed in December, 1982, discussed the survey results with licensee representatives and observed radiation protection technicians performing surveys. Surveys are performed at the frequency specified in Nuclear Safety Instruction No. 0-6.0, Contamination Measurement and Control. No violations or deviations were identified.

10. Radiation Work Permits

The inspector reviewed radiation work permits which had been prepared for maintenance activities during the period of August 1 through December 31,

1982, for appropriateness of the radiation protection requirements based upon work scope, location, and condition. During tours of the plant, the inspector observed the adherence of plant workers to the RWP requirements. During a review of procedures relating to RWPs (P/P 40-9, Rev. 5 and NSI No. 0-9.0, Rev. 6) the inspector noted that both documents had been revised to incorporate a requirement that special training and documentation of training be completed when "special safety instructions" are included on the radiation work permit. While reviewing the RWPs, the inspector noted that radiation protection personnel were using the "special safety instruction" block on the form for recording routine requirements which would not warrant special instructions and documentation. Some radiation protection personnel ignored the requirement for special training if requirements are entered in the "special safety instructions" block while others put "N/A" over the requirement for special training. Radiation protection technicians and supervisors were not sure what type of requirements the writer of the procedures intended to be included under special safety instructions. The inspector stated that the preparers of an RWP should be given specific guidance on completing the "special safety instructions" block on the RWP. The inspector also stated that the licensee should also have some method of indicating the effective date of a procedure change and of assuring that the change is implemented (83-01-01).

11. Leak Test of Sources

License Condition 9 requires the licensee to operate the plant in accordance with the statements, representations, and conditions of Appendix A as contained in the licensee's application. Appendix A specifies the frequency and method for performing leak tests of other sealed sources.

The inspector selectively reviewed the records for leak tests of sealed sources performed in 1982. The inspector observed a radiation protection technician performing a leak test of a Cs-137 source in a density gage. No violations or deviations were identified.

12. Posting, Labeling, and Control

The inspector reviewed and licensee's posting and control of radiation areas, airborne radioactivity areas, contamination areas, radioactive material areas, and the labeling of radioactive material during tours of the plant. No violations or deviations were identified.

13. Airborne Radioactivity Release

On December 17, 1982, a UF6 release occurred in the vaporization area as the result of a defective valve on a UF6 cylinder. Personnel evacuated the area immediately. Personnel who reentered the area to correct the problem wore appropriate respiratory protection equipment. The inspector reviewed air sample results, bioassay results for personnel who were in the area or who entered during the event, and stack sample results. No NRC limits were exceeded. No violations or deviations were identified.