



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

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Report No.: 70-1113/92-17

Licensee: General Electric Company
Wilmington, Nc 28401

Docket No.: 70-1113

License No.: SNM-1097

Facility Name: Nuclear Fuel and Components Manufacturing

Inspection Conducted: November 9-13, 1992

Inspector: G. L. Troup
G. L. Troup, Fuel Facility Project Inspector

11/19/92
Date Signed

Approved by: E. J. McAlpine
E. J. McAlpine, Chief
Radiation Safety Projects Section
Nuclear Materials Safety and Safeguards Branch
Division of Radiation Safety and Safeguards

11/20/92
Date Signed

SUMMARY

Scope:

This routine inspection was conducted in the areas of management controls, facility operations, facility changes, and followup on previously identified items. During the inspection, a meeting was held with Commissioner Curtiss to discuss current issues and tour the facility.

Results:

Within the scope of the inspection, no violations or deviations were identified. One area identified which needed improvement was the conduct of preoperational functional tests (Paragraph 2.d).

REPORT DETAILS

1. Persons Contacted

- *S. Babb, Manager, URLS Operations
- *G. Bowman, Sr. Program Manager, Compliance Improvement
- *D. Brown, Manager, Reclaim and Support
- *M. Chilton, Manager, Fuel Chemical Technical Resources
- *R. Keenan, Program Manager, Compliance Auditing
- *D. McCaughey, Engineer, Criticality Safety Engineering
- *R. McIver, Manager, Plant Engineering and Site Maintenance
- *D. McLemore, Manager, Fuel Chemical Manufacturing
- *W. Ogden, Manager, Manufacturing Engineering
- *W. Peters, Manager, Criticality Safety Engineering
- T. Reason, Sr. Engineer, Fuel Chemical Technical Resources
- G. Smith, Sr. Engineer, Fuel Chemical Technical Resources
- C. Tarrer, Engineer, Fuel Chemical Technical Resources
- *J. Taylor, Principal Engineer, Criticality Safety Engineering
- *C. Vaughan, Manager, Regulatory Compliance
- *P. Winslow, Manager, Licensing and Nuclear Materials Management

Other licensee employees contacted included Area Coordinators, operators, technicians, and engineers.

*Attended exit interview

2. Engineered NDA Systems and Safe Tanks (88015, 88020)

- a. Item 6 of the licensee's Performance Improvement Program (PIP) addressed the installation of new tanks and automatic measurement instrumentation (in-line uranium monitors) in the Nitrate Waste (NW) and Radwaste (RW) systems in the Uranium Recycle Unit (URU). This project was known as the "V-104 Project." During the inspection period, the licensee was completing the actions to bring the new system for NW into service. The RW system was to be placed in service after the NW system was operational. Written approval to operate NW was given on November 11, 1992.
- b. The basic document for the "V-104 Project" was Facility Change Request (FCR) 92.138, "Radwaste and Nitrate Waste Expansion." The inspector reviewed the Nuclear Criticality Safety Analysis for the expansion, the radiological assessment and audit, the Nuclear Safety Engineering preoperational audit and the documentation of training (which included operators and Area Coordinators, shift technical resources, and instrument and maintenance technicians). The Process Requirement and Operator Documents (PROD) for the Primary Nitrate System, PROD 104.03, was revised and approved for the new NW equipment, and the computer graphics and controls were installed.

- c. An equipment failure in the system could result in the discharge of particulates into the tanks. To assure that samples analyzed by the in-line monitors or manual samples are representative of the tank contents and that settling does not occur, a sample representative test was conducted on each tank using material which could be discharged into the tank after an equipment failure. Temporary Operating Instruction (TOI) TOI-A-2396 "New Quarantine Tanks - Sample Representativeness Test" was conducted on each tank. The minimum mixing time which was determined for each tank was included in the process parameters.
- d. Testing of Active Engineered Controls (AECs), interlocks, and control software was performed by Functional Test Instructions (FTIs) 104.03 FI-F5 for NW and 106.05 FI-F5 for RW. All of the FTIs were signed and accepted by Nuclear Safety Engineering. In reviewing the completed FTIs and comparing the tests with the Piping and Instrumentation Diagrams (P&IDs), the inspector noted an apparent discrepancy between the two. The FTI (104.03 FI) in the prerequisites section, required that two manual valves be closed; this was initialed as having been done. However, neither of the valves were shown on the P&ID (CP-402). The inspector questioned how the valves could be closed if they were not there. Discussions revealed that two valves in the process stream had been closed to isolate the system. In discussions with the cognizant manager, the inspector stated that provisions exist for noting discrepancies and changes in FTIs and should have been used, rather than signing off the incorrect valves. The manager acknowledged this and stated that the FTIs would be corrected and personnel instructed to properly document changes or corrections. From a review of the P&IDs, and the FTIs, and discussions with the operators, the inspector determined that this situation did not affect the acceptability of the tests or compromise the safety of the system.
- e. When the inspector was attempting to resolve the question of the valves, licensee personnel utilized several sets of P&IDs which were stored in the URU Control Room to identify the valves. The inspector observed that these sets were out of date and did not include the latest revisions of the P&IDs. This was discussed with the Area Manager, who agreed that only current P&IDs should be in the Control Room. On November 12, 1992, the Area Manager designated an individual as custodian of the Control Room drawings with the assignment of maintaining the drawings current, but other individuals were instructed to assist in maintaining the drawings current.

No violations or deviations were identified.

3. Organization Changes (88005)

The licensee announced two organization changes as part of the effort to improve performance and upgrade programs.

- a. Effective November 2, 1992, a Compliance Auditing group was established under the Manager, Regulatory Compliance. This group will concentrate on verification of procedural conformance. Members of the group were drawn from Radiation Safety Engineering, Radiation Protection, and Training and Development.
- b. The Manager, Reclaim and Support, Fuel Chemical Manufacturing was given a temporary assignment in charge of procedure improvement and development of new training programs for operators. During this assignment, his duties as Area Manager for URU were assigned to the Program Manager, URLS Operation and as Area Manager for Shop Support were assigned to the Program Manager, Environmental Programs. The Program Manager, Compliance Improvement was assigned to also work on the procedures and training project.

4. Followup on Previous Items (92702)

- a. (Closed) Inspector Followup Item (IFI) 91-06-15, Restoration of UNH Product System

The UNH product tanks were taken out of service until the integrity of the tanks and foundations could be determined following an acid spill in the tank room in October 1991. The Stop Work Order issued by the Manager, Regulatory Compliance on November 6, 1991, was removed in January 14, 1992, after the structural concerns were resolved. However, the tanks were not released for use until several FCRs were completed.

FCR 92-431, Reestablish Use of Slab Tanks, was approved for installation on October 8, 1992. The FCR requirements were completed and approval for operation of the system was given in writing on October 19, 1992, by the Manager, Criticality Safety Engineering and the Area Manager.

In addition to reviewing the FCR package (including the ProVox logic review and audit), the inspector observed the panels in both the URU and Conversion control rooms and verified that the graphics displays had been changed to include the UNH tanks. The inspector also verified that PROD 103.04, UNH Product Entry, Accountability, and Storage, had been revised to incorporate the tanks and was in the control rooms. The inspector also discussed the status of the tanks with operators in both control rooms and determined that they were cognizant of the status of the tanks.

This completes the actions to restore the system. IFI 91-06-15 is closed.

- b. (Closed) IFI 91-06-04, Implement Training/Retraining Program for Operators and Other Personnel.

Since the restart of the Solvent Extraction process (Inspection Report 70-1113/91-05), the licensee has conducted training for process and nuclear safety engineers and well as specific training for operations personnel as changes have made to systems or new systems were added.

As part of the PIP, the licensee included additional short-term training for operators. A longer term item was to develop a new training program for current operators and for new operator trainees. This was discussed at the status meeting held on October 14, 1992, which was documented in Inspection Report 70-1113/92-16.

Subsequent to that meeting, the Manager, Fuel Chemical Manufacturing assigned a senior manager to lead the program to upgrade the procedure system and develop the training program (Paragraph 3).

The NRC will continue to follow the development and implementation of the training programs. However, this IFI is closed for record purposes.

5. Commissioner's Visit (94702)

On November 10, 1992, NRC Commissioner James R. Curtiss visited the facility for a meeting with facility management and to tour the facility. A meeting summary is contained in Attachment 1 to the report.

6. Exit Interview (30703)

The inspection scope and results were summarized on November 13, 1992, with those persons indicated in Paragraph 1. The inspector described these areas inspected and discussed in detail the inspection findings and the inspector's observations.

Although proprietary documents and processes were reviewed during the inspection, proprietary information is not contained in this report.

ATTACHMENT
MEETING SUMMARY

On November 10, 1992, Commissioner James R. Curtiss and other NRC representatives met with the licensee to discuss current issues and to tour the facility.

Attendees:

Nuclear Regulatory Commission

J. Curtiss, Commissioner
D. Trimble, Technical Assistant, Office of the Commissioner
J. Stohr, Director, Division of Radiation Safety and Safeguards,
Region II
G. Troup, Fuel Facility Project Inspector, Region II

General Electric Nuclear Energy

P. Marriott, Manager, Regulatory and Analysis Services

General Electric Nuclear Fuel & Components Manufacturing

@M. Bucci, Manufacturing Engineer, Control Rods and Stainless Steel
Products Operation
F. Jackson, Manager, Human Resources and Community Relations
@P. Kalish, Acting Manager, Channels, End Plugs and Spacers Operation
D. McLemore, Manager, Fuel Chemical Manufacturing
W. Ogden, Manager, Manufacturing Engineering (Acting Plant Manager)
@J. Schardt, Manager, Tubing Products Operation
P. Sick, Manager, Quality Assurance
@B. Tolan, Manager, Material Services Parts Operation
C. Vaughan, Manager, Regulatory Compliance

@Participated in facility tours

The formal meeting discussion started with an overview of the various operations at the Wilmington facility. Specific topics which were then presented were:

- * Status of corrective actions from the May 29, 1991 incident and resulting investigation reports.
- * Improvements in the Nuclear Criticality Safety Program, including specialized training programs.
- * Fuel Rod Weld Quality improvements.

Following the discussions on these topics, tours were conducted of the plant facilities. Areas toured were:

- Service Components Operation (SCO)
- Fuel Components Operation (FCO)
- Fuel Manufacturing Operation (FMO) including the Uranium Recovery Unit