



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

MAY 30 1985

Report No. 70-1151/85-06

Docket No. 70-1151

License No. SNM-1107

Licensee: Westinghouse Electric Corporation
Nuclear Fuel Division

Date of Inspection: May 13 - 17, 1985

Inspector: G. L. Troup

5/29/85
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

5/30/85
Date Signed

Inspection Summary

Areas Inspected: This routine, unannounced inspection involved 33 inspector-hours on site in the areas of nuclear criticality safety, operations review, maintenance and followup on previously identified items of noncompliance.

Results: No violations or deviations were identified.

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REPORT DETAILS

Report No. 70-1151/85-06

1. Key Persons Contacted

- *H. L. Duke, Director, Resource Utilization
- *W. L. Goodwin, Manager, Regulatory Affairs
- *J. Hubich, Manager, Chemical Manufacturing
- *G. T. Lowder, Manager, MAP Operations
- *E. K. Reitler, Jr., Manager, R&E Engineering
- J. W. Heath, Manager, Radiation Protection Operations
- J. R. Rosier, Jr., Manager, Chemical Maintenance
- H. T. King, Nuclear Criticality Safety Engineer
- W. L. Johnson, Manufacturing Engineer
- R. G. Shuler, Manufacturing Engineer
- L. C. Frye, Senior Manufacturing Engineer
- *M. L. Brazell, Manager, MAP Team
- J. Goodwin, Manager, MAP Team
- J. Hossenlopp, Supervisor, Waste Recovery and Disposal
- M. W. Goddard, Supervisor, Conversion Area
- R. Allen, Supervisor, Pellet Area

Other licensee employees contacted included six technicians, and three operators.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 17, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Inspection Findings

(Closed) Violation 85-02-01, Failure to Limit Weight of Cartridge Filters. The corrective actions described in the licensee's response of April 4, 1985 were reviewed. The inspector verified that the scale in question had been calibrated and the operating log showed that gross weight limit was being followed.

4. Management Organization and Controls (88005)

E. K. Reitler, Jr., was appointed as Manager, Radiological and Environmental Engineering, effective April 1, 1985. Mr. Reitler was formerly the Acting Coordinator for the Radiological and Environmental Engineering Group. The inspector reviewed his qualifications against the license requirements.

No violations or deviations were identified.

5. Manufacturing Automation Project (MAP)

- a. The inspector toured the new Manufacturing Automation Project area. This project uses the Integrated Dry Route (IDR) process for converting UF₆ to uranium oxide and an automated process train for producing pellets and fuel rods. The inspector was briefed on the installation, testing and operation of the system by license supervisory and technical personnel.
- b. The system has been operated with depleted uranium and low-enriched uranium through the conversion process. The pellet fabrication and rod loading portions are still undergoing testing and qualification.

6. Nuclear Criticality Safety (88015)

a. Facility Changes and Modification

The inspector examined five nuclear criticality safety review requests and the associated analyses. The inspector verified that approved evaluation methods were used and that the calculations and analyses were checked by a second individual. The inspector also verified that the analyses included a post-installation review and sign-off authorizing the use of the equipment.

No violations or deviations were identified.

b. Nuclear Safety Analyses

The inspector discussed the methods used to perform nuclear safety calculations with the cognizant individuals and verified that the methods used were in accordance with the license requirements. The inspector also discussed the methods used by the licensee's contractor in performing computer calculations as part of nuclear safety analyses.

No violations or deviations were identified.

c. Audits

The inspector reviewed the monthly criticality audit reports for the period January - May 1985 and verified that the audits were conducted at the required frequency and in accordance with a plan, as required by

the license. The audit report identified problems to be rectified, the responsible individual, and an action date. Correction of identified items and the close-out date were documented. The adequacy of corrective actions was also determined.

No violations or deviations were identified.

d. Criticality Monitoring System

The inspector reviewed the calibration records for the criticality monitoring systems in the existing fuel conversion and fabrication areas and the new MAP area and determined that the calibrations were performed in accordance with the license requirements. The inspector also reviewed the correction curve for the source used in the calibrations and discussed the calibration and testing of the alarm system with licensee representatives.

No violations or deviations were identified.

e. SNM Containers

The inspector discussed shipping containers used for SNM with the cognizant licensee representatives and determined that no new designs are in use. The inspector observed during tours of plant areas that the shipping containers are of approved designs as evidenced by the DOT specifications markings.

The MAP process uses a new container for storage and transport of SNM within the moderation control area. The inspector reviewed the nuclear safety analysis performed on these containers in 1978 and the safety demonstration in the license application. As these containers are only used in the plant, they are not subject to Department of Transportation approval.

No violations or deviations were identified.

f. Procedures

The inspector reviewed procedures RA-300, "Safeguards, Nuclear Criticality Safety and Radiation Safety Reviews - Equipment", Rev. 4, and RA-301, "Nuclear Criticality Control Criteria", Rev. 3. No changes to these procedures had been made since the last inspection.

No violations or deviations were identified.

7. Operations Review (88020)

a. Safety Systems

The inspector verified that the following safety systems or devices were provided and had been tested or calibrated in accordance with the license requirements.

- (1) Remote closing devices for UF6 cylinder valves when the cylinders are in the vaporizers
- (2) UF6 detection system on the steam condensate lines
- (3) Pressure relief valves on steam lines to the UF6 vaporizers
- (4) Liquid level detectors on steam type UF6 vaporizers
- (5) Leak testing of UF6 cylinder-to-conversion connections

No violations or deviations were identified.

b. Tours

During the inspection, tours were made of the various work areas to observe operations. Items reviewed or verified included:

- (1) Special nuclear material was stored in arrays on carts, and in designated storage locations in accordance with posted instructions.
- (2) Scales used for control of special nuclear material had been calibrated and had stickers affixed indicating the next calibration due date.
- (3) Housekeeping in all areas was acceptable.
- (4) Material control logs were checked for material entering and exiting the solid waste incinerator.
- (5) Differential pressure readings in filters and enclosures were within the authorized limits.

No violations or deviations were identified.

c. Secondary Criticality Controls

- (1) Boron glass Raschig rings are used in certain liquid tanks as a secondary criticality control method. The license requires that the rings and tanks be checked annually for settling, minimum volume and B2O3 content. The inspector reviewed the records for

the settling and minimum volume determinations made in 1983 and 1984. No violations or deviations were identified.

- (2) The inspector noted that Raschig rings were collected in November 1983 but the analyses were not completed for B203 content until April 1984. Additional rings were collected in December 1984 but the chemical analyses had not been completed at the time of inspection. The inspector questioned the delay in performing the analyses for approximately five months. Licensee management representatives acknowledged that there should not be such a delay, and stated that action would be taken to assure that the boron content determination is accomplished in the same time period as the other determinations. Chemical analysis results for the April 1984 tests were within the license limits. The inspector had no further questions at the time.

d. Potential Unsafe Geometry Systems

This topic was discussed in RII inspection report 70-1151/85-02, paragraph 6.c. The inspector discussed the status of system surveys and the procurement of remote monitoring instrumentation. Licensee representatives stated that the instrumentation was being procured but had not arrived. In the interim, internal surveys of systems considered to be of "low probability" for accumulation of uranium are targeted for the first week of June. The "high probability" systems have already been surveyed and are included in routine monthly surveys. No violations or deviations were identified.

8. Maintenance (88025)

a. Controls over Work

The inspector reviewed the methods employed by the licensee to control maintenance work and testing which require that equipment be removed from service. The licensee uses a work request which incorporates the following features:

- (1) written approval of the operations supervisor to start work
- (2) sign-off by the operations supervisor when work is complete and equipment is returned to service
- (3) provisions for specifying health physics coverage and respiratory protection requirements
- (4) provisions for specifying welding or burning permits
- (5) provisions for specifying testing and calibration as part of the work.

The inspector reviewed several completed work request forms and verified that the operations supervisor had authorized the work to commence and the return to service of the equipment.

No violations or deviations were identified.

b. Special Provisions

A licensee management representative informed the inspector that the work request system would not be applicable to the MAP system. The periodic maintenance, periodic testing, functional testing and calibration programs and schedules for MAP will be computerized. The Team Manager will be able to evaluate the work requirements from the computer base, make work assignments, control system and equipment status, and return equipment to service through the computer system. Detailed work procedures are being prepared for the various operations (preventive maintenance, calibrations, etc.). The Team Manager will control the scheduling, accomplishment, testing, and return of equipment through the computer data bases rather than by a written work request. Major repairs or replacement will be controlled by work packages, but the status of the systems will be controlled by the system status and logs in the computer. This system is not fully functional yet.