

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 70-1100/80-05  
30-03754/80-02  
Docket No. 70-1100  
30-03754  
License No. SNM-1067 Priority 1 Category UR  
06-00217-06

Licensee: Combustion Engineering, Inc.

P.O. Box 501

Windsor, Connecticut 06095

Facility Name: Nuclear Manufacturing Facility

Inspection at: Windsor, Connecticut

Inspection conducted: July 9-11, 1980

Inspectors: J. Clemons  
P. Clemons, Radiation Specialist

7/24/80  
date signed

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date signed

Approved by: J. A. Serabian  
J. J. Knapp, Chief, Radiation Support  
Section, FF&MS Branch

8-28-80  
date signed

Inspection Summary:

Inspection on July 9-11, 1980 (Combined Report Nos. 70-1100/80-05; 30-03754/80-02)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of the Radiation Protection Program including: outstanding items, source inventory and leak test, radiological control committee, monthly and annual audits, organization, training, dosimetry, stack samples, breathing zone samples, bioassay, ventilation, liquid waste, termination reports, and "contaminated storage area". Shortly after arrival, areas where work was being conducted were examined to review radiation control procedures and practices. The inspection involved 20 inspector-hours onsite by one regional based inspector.

Results: Of the 15 areas inspected no items of noncompliance were identified in 14 areas. One apparent item of noncompliance was identified in one area (Infraction - radiological control committee not formed and functioning - Paragraph 3).

## DETAILS

### 1. Persons Contacted

Mr. G. Johnstone, Health and Safety Supervisor  
Mr. J. Limbert, Laboratory Radiation Engineer  
\*Mr. F. Pianski, General Manager, Fuel Fabrication  
\*Mr. P. Rosenthal, Manager, Health Physics

The inspector interviewed several other licensee employees during the course of the inspection.

\*Denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (1100/79-03-01): Did not obtain Radiation Work Permit (RWP) prior to decreasing ventilation. Operating procedure has been revised, as observed by the inspector, that permits the removal of only one side of the ventilation enclosure which should eliminate the possibility of decreasing the ventilation flow rate.

(Closed) Noncompliance (1100/79-03-02): Failed to survey for beta contamination. SNM-1067 has been amended eliminating the requirement to perform beta surveys.

(Closed) Noncompliance (1100/79-03-03): Failed to monitor upon exiting an unclad fuel handling area. The inspector was informed that appropriate personnel had received additional training in proper monitoring techniques and the inspector observed a sign located near the Ceramics Lab informing personnel of the monitoring requirement.

(Closed) Noncompliance (1100/79-07-01): Failed to do urine bioassay. The licensee has started a new "checklist procedure" that is intended to assure that all appropriate personnel are included in the bioassay program.

(Closed) Noncompliance (1100/79-07-02): Failed to do fixed alpha survey. Fixed alpha surveys are now being performed as observed by the inspector.

(Closed) Noncompliance (1100/79-07-03): Failed to train. The licensee has started a new "checklist procedure" that is intended to assure that all appropriate personnel are included in the training program.

(Closed) Noncompliance (1100/79-07-04): Failed to monitor thoroughly. SNM-1067 has been amended, and the amendment requires that personnel must monitor themselves thoroughly upon exiting a contaminated area.

(Closed) Noncompliance (1100/79-07-05): Failed to collect breathing zone sample every four hours. The inspector reviewed data which indicated that breathing zone samples are collected every four hours when required.

(Closed) Noncompliance (1100/79-07-06): Failed to submit termination report in a timely manner. The licensee has started a new procedure that is intended to assure that termination reports are submitted in a timely manner.

(Closed) Noncompliance (1100/79-07-07): Failed to post area. The area was posted during inspection 79-07 but the sign was covered. The area is properly posted at this time as observed by the inspector.

(Closed) Noncompliance (1100/79-07-08): Failed to label container. Containers are labeled properly as observed by the inspector.

(Closed) Noncompliance (1100/79-07-09): Form did not comply with Form NRC-5 requirements. Licensee has revised the form that is equivalent to Form NRC-5 and the revised form contains all of the required information as observed by the inspector.

(Closed) Noncompliance (1100/79-07-10): Failed to follow procedure. The licensee has revised procedures and the revision is intended to assure that all containers bearing SNM waste materials shall be identified as to the uranium content and the enrichment.

3. Radiological Control Committee - Materials License No. 06-00217-06

On July 9, 1980, the inspector asked a licensee representative for a copy of the Radiological Control Committee audit findings for 1979. The representative stated that he was not aware of the audit findings, but he would inquire of others.

Condition No. 16 of License No. 06-00217-06 states,

"Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in applications dated February 24, 1978 and October 30, 1978."

"A Radiological Control Committee has been organized to perform the following functions:

- a) Evaluate proposed changes in the handling of byproduct materials for personnel safety and protection of the environment.
- b) Perform an annual audit of all operations involving byproduct materials. The committee shall submit its findings and recommendations to the Vice-President for Development."

The inspector then asked the Manager, Health Physics, for the audit findings and he was informed that the Radiological Control Committee does not exist, therefore no audits were performed during 1979.

The inspector noted that failure to comply with the conditions of License No. 06-00217-06 represents noncompliance. (80-02-01)

The Manager, Health Physics, informed the inspector that the committee would be established as required and it would perform the functions as stated in the license application dated February 24, 1978.

#### 4. Internal Audits - SNM-1067

Section 8.3 of the licensee's application, which is incorporated by License Condition 9 of SNM-1067, requires that monthly audits for radiological considerations be performed by a qualified individual. The inspector questioned licensee representatives regarding the conduct of the monthly internal audits as required by Section 8.3. The inspector reviewed audit reports for the period January-July 1980 for the monthly radiological safety audits.

The Nuclear Safety Committee is also required to perform an annual audit of the radiological aspects of SNM-1067. The inspector reviewed the report of an audit conducted by the Nuclear Safety Committee on November 27, 1979.

No items of noncompliance were identified.

#### 5. Dosimetry

The inspector reviewed dosimetry records for the period January-December 1979 for approximately 150 individuals monitored at the Nuclear Fuel Manufacturing Facility and the Laboratories. The data indicated that all exposures were well within the 10 CFR 20.101 limits.

No items of noncompliance were identified.

6. Organization

The former Nuclear Licensing and Safety Supervisor resigned his position with the licensee in May 1980. His responsibilities have been assigned to the Health and Safety Supervisor for the radiological implications, and to a member of the Physics Department for the criticality implications.

No items of noncompliance were identified.

7. Source Leak Test

License Condition 15 of SNM-1067 requires "Each encapsulated plutonium source...shall be tested for leakage at intervals not to exceed six months." The licensee has five plutonium sources that must be tested.

The inspector reviewed leak test data for the period January-July 1980. The data indicated that all sources had been leak tested at the specified intervals.

License Condition 13(c) of Materials License No. 06-00217 requires sealed sources be also leak tested at intervals not to exceed six months.

The inspector reviewed this data for the same period as stated above, and the data also indicated that the sources had been tested at the required frequency.

No items of noncompliance were identified.

8. Air Samples

The inspector reviewed general air sample data for the period January-July 1980 to determine if the licensee was in compliance with regulatory requirements.

The inspector also reviewed breathing zone air sample data for approximately 15 employees for the same period.

No items of noncompliance were identified.

9. Stack Samples

Amendment No. 25 to SNM-1067 states "if the radioactivity in plant gaseous effluents exceeds 18 uCi gross alpha activity of total uranium per calendar quarter, the licensee shall within 30 days, prepare and submit to the Commission a report which identifies the cause for exceeding the limit and the corrective actions to be taken by the licensee to reduce release rates."



As the inspector reviewed stack sample data during the first two calendar quarters for 1980 he noted that during the second quarter (during the week of June 24, 1980) the licensee discharged 22 uCi gross alpha activity. A licensee representative showed the inspector a copy of a rough draft of a report that was being prepared for submission to the Commission. The report indicated that the cause of the problem was absolute filters that were too small for the filter housing thereby permitting the uranium to bypass the filters and be discharged to the environs. According to the General Manager, the corrective action will be to modify the filter housing so that only the proper sized filters will fit the system.

The 30 day report had not been submitted to the Commission by the time the inspection was completed, but the report was not due to be submitted until the week of July 24, 1980.

No items of noncompliance were identified.

10. Bioassay

Condition No. 17 of SNM-1067 requires the licensee to develop and maintain a bioassay program which meets the specifications of Regulatory Guide 8.11, "Application of Bioassay for Uranium". Regulatory Guide 8.11 has an annual sampling frequency for minimum programs.

The inspector reviewed urine bioassay data for about 15 employees for 1979 to determine that the employees were participating in the program as required. The employees are participating in the program, and the data did not indicate any problems with exposure control.

No items of noncompliance were identified.

11. Termination Reports

10 CFR 20.408 requires a licensee to submit to the Director of Management and Program Analysis a report of an individual's exposure to radiation and radioactive material, incurred during the period of employment in the licensee's facility when the individual terminates employment with the licensee. The inspector reviewed approximately 15 exposure reports for 1979 of employees that had terminated employment with the licensee. These reports had been submitted as required.

No items of noncompliance were identified.

12. Ventilation

Section 15.7 of Special Nuclear Material License No. SNM-1067 requires face velocities at hood openings to be at least 100 feet per minute. The licensee performs weekly ventilation surveys in the Pellet Shop, and monthly ventilation surveys in the laboratories, to determine that the face velocities were as required.

The inspector reviewed ventilation data for the Pellet Shop for the period January-June 1980 to confirm that the required flow rate was maintained. The data indicated that in every instance the face velocities were in excess of 100 feet per minute.

No items of noncompliance were identified.

13. Smears

Section 15.6.1 of the licensee's application requires that smear surveys be taken and analyzed for alpha activity to verify compliance with internal limits. The inspector reviewed smear survey records for the period January-June 1980 to assure that the licensee was in compliance with this license requirement.

No items of noncompliance were identified.

14. "Contaminated Storage Area"

On July 9, 1980 the inspector toured the "contaminated storage area", which had been identified during an aerial radiation survey, and that the licensee had reported to Region I on June 13, 1980. The purpose of the tour was to get an appreciation of the magnitude of the situation, and to collect confirmatory samples. The inspector collected eleven samples that were sent to Idaho Falls for analyses. The results of these analyses will be intercompared with licensee results.

15. Exit Interview

The inspector met with the licensee representative (denoted in Paragraph 1) at the conclusion of the inspection on July 11, 1980. The inspector summarized the purpose and scope of the inspection, and the findings as presented in this report.