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APR 16 1980

Docket No. 70-36

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Combustion Engineering, Inc.
ATTN: Mr. H. V. Lichtenberger
Vice President - Manufacturing
Nuclear Power Systems
Windsor, CT 06095

Gentlemen:

This refers to the inspection conducted by Mr. C. C. Peck of this office on February 26-28, 1980, of activities at Hematite, MO authorized by NRC Special Nuclear Material License No. SNM-33 and to the discussion of our findings with Mr. J. A. Rode and other members of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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Combustion Engineering, Inc.

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

A. B. Davis, Chief
Fuel Facility and
Materials Safety Branch

Enclosure: IE Inspection
Report No. 70-036/80-01

cc w/encl:
Mr. J. A. Rode, Plant Manager
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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 70-036/80-01

Docket No. 70-036

License No. SNM-33

Licensee: Combustion Engineering, Inc.
Nuclear Power Systems
Windsor, CT 06095

Facility Name: Hematite

Inspection At: Hematite, MO

Inspection Conducted: February 26-28, 1980

Inspector: C. C. Peck *C C Peck*

4/14/80

Approved By: *W. L. Fisher*
W. L. Fisher, Chief
Fuel Facility Projects and
Radiation Support Section

4/14/80

Inspection Summary

Inspection on February 26-28, 1980 (Report No. 70-036/80-01)

Areas Inspected: Routine, unannounced health and safety inspection, including: organization, facility changes and modifications, internal reviews and audits, operations review, internal and external exposure control, liquid effluents, airborne effluents, solid wastes, and follow-up of IE Bulletin 79-19. The inspection involved 18 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were found in the nine areas inspected.

DETAILS

1. Persons Contacted

*J. A. Rode, Plant Manager
*H. E. Eskridge, Nuclear Licensing, Safety and Accountability
Supervisor
*L. J. Swallow, Quality Assurance Manager
*L. F. Duel, Engineer
*R. C. Miller, Production and Materials Control Supervisor
*G. Abernathy, Health Physics Technician

*Denotes those present at exit interview

2. General

The inspection began at 11:30 a.m. on February 26, 1980. The inspector toured the principle plant operating areas during the first day of the inspection and revisited areas of interest during subsequent days. Normal work activities were in progress and no unsafe practices or conditions were observed.

3. Previous Inspection Findings

(Closed) Unresolved item (70-036/78-09): Concerning the whole body counting data for one individual. Counts of the individual on two occasions in 1978 showed more than the 130 microgram uranium-235 limit at which the licensee takes action to prevent exposure to airborne activity. Subsequent counts on two occasions in April and September of 1979 were 105 and 95 micrograms, respectively. The continuous use of a lapel sampler by the individual is no longer required.

4. Organization

E. C. Lovell, Health Physics Technician, became a production foreman. Mr. Lovell was replaced by G. Abernathy. There have been no other changes in the health and safety organization.

5. Facility Changes

Facility change notices were reviewed for the period since the last inspection in July 1979 (Report 70-036/79-06). There have been no changes that affect criticality safety. One change that has been completed provides an additional boil down tank for disposing of slightly contaminated and potentially contaminated mop water accumulated during cleanup of areas where there is a low potential for contamination. The water previously went to the sanitary system. The change is intended to reduce the small amount of radioactivity exiting the site via sinks to the aeration sewage plant.

The facility has released no waste solutions to the onsite evaporation ponds since September 1978. In late 1979 removal of sludge from the lagoons was begun. The work was discontinued during the winter. The sludge was stored in 136 drums, each of which has been sampled for analysis. The licensee is considering the methods of disposing of the drum accumulation and completing the pond cleanout program.

The licensee representatives described plans for disposing of used limestone, uncontaminated with radioactivity, on the plant property. Suitable locations for disposition were pointed out to the inspector.

License amendment No. 4 to SNM-33 was issued October 26, 1979, to permit operation of an incinerator for volume reduction of combustible wastes. Trial incinerations of noncontaminated waste have been made, and the burning of contaminated waste has been conducted twice. Samples of the effluent in the stack through which the incinerator system exhaust passes were high when contaminated waste was burned. Engineering efforts to correct the problem are in progress.

No items of noncompliance were identified.

6. Internal Reviews and Audits

Recent semiannual audits by company representatives from the Windsor plant conducted in May and November 1979, were examined by the inspector.

Weekly inspections by the Nuclear Licensing, Safety, and Accountability Supervisor and monthly audits by the Quality Assurance Manager continue. These audit records were reviewed.

No items of noncompliance were identified.

7. Radiation Protection

a. External Exposure Control

Film badge records were not examined by the inspector. The licensee stated that there had been no significant exposures.

b. Internal Exposure Control

Air sample records for the period July 1979 through February 1980 were inspected. Samples taken in operating areas are analyzed daily. The data showed only infrequent instances of concentrations exceeding the MPC of $1E-10$ μ Ci/ml. The air sample and lapel sample data showed no exposures exceeding 40 MPC-hours.

Monthly urinalysis records for the July-February period showed no samples exceeding the 50 µg/liter resample limit. The maximum concentration noted for any individual was 28 ug uranium/liter. Most sample concentrations were less than 15 ug/l.

In vivo counts for uranium are made twice a year. Efforts are made to schedule each production and maintenance worker at least once during the year. The most recent series of counts in September 1979 showed one worker with about 140 micrograms of uranium, slightly above the licensee's action point of 130 micrograms. His activities have been restricted. Another worker, whose counts were above the action point twice in 1978, was below the action point for the second time in 1979 and his restriction was removed.

No items of noncompliance were identified.

8. Waste Management

a. Liquid Effluents

A review of effluent data disclosed that the quantities of uranium released to unrestricted areas continue to be below the limits of 10 CFR Part 20. For the period July through December 1979 the quantity of uranium measured at the discharge of the site pond was 3.9 E-03 curies, about 25 grams. The average concentration was 4.5 E-08 microcuries per milliliter. The concentration limit of 10 CFR Part 20, based on uranium-234, is 3E-05 microcuries per milliliter.

b. Gaseous Effluents

For the period July through December 1979, the measured quantity of uranium released from plant stacks was reported to be 1.3E-05 curies, about 0.1 gram. The average concentration of the effluent was calculated to be 1.1 E-13 microcuries/milliliter. This concentration is less than the 10 CFR Part 20 limit of 2E-11 for soluble uranium-234 without application of any dilution factors.

c. Solid Waste

The licensee prepared and made a shipment of low level waste to a burial site during the inspection. The shipment consisted of specification 7A wooden boxes and 55-gallon steel drums containing solid material contaminated with small quantities of enriched uranium. The inspector determined that packaging, marking, and labeling of the packages, and shipping paper information were as required by applicable DOT regulations.

No items of noncompliance were identified.

9. IE Bulletin 79-19

The inspector examined actions taken by the licensee in response to IE Bulletin 79-19, "Packaging of Low-level Radioactive Waste for Transport and Burial." The findings are itemized below:

- . The licensee maintains current copies of DOT and NRC regulations.
- . Licenses of the three active burial sites are maintained.
- . The Production and Materials Control Supervisor is designated in writing as the individual responsible for the safe transfer, packaging, and transport of low-level radioactive material.
- . A management approved operating procedure, OS-1001, pertains to the packaging and transfer of radioactive material. In response to Bulletin 79-19, the procedure was revised to include emphasis on proper package closure and on the importance of ensuring that free liquid is absent from waste packages.
- . Training has been provided for those employees involved in the generation, packaging, and transport of radioactive waste. Safety meetings in December 1979 included instructions in packaging, regulations, Bulletin 79-19, burial site license requirements, burial costs, and the consequences of noncompliance. Retraining will be accomplished through future safety meetings.
- . An audit of waste transfer, packaging, and transport activities was conducted in September 1979 by a representative of the company's Windsor staff. The inspector examined the audit documentation. Bulletin 79-19 was used as the basis of the audit. The inspector determined that the Hematite facility took appropriate actions in response to the audit findings.
- . The licensee responded to Bulletin 79-19 as requested by NRC.

10. Exit Interview

Licensee representatives designated in Paragraph 1 met with the inspector at the close of the inspection.

The inspector informed the group that no items of noncompliance had been found. Plans for disposing of the evaporation ponds and of uncontaminated limestone were discussed.