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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD PANEL  
WASHINGTON, D.C. 20555

DOCKETED

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August 15, 1989

NOTE TO: Emile Julian, Acting Chief  
Docketing and Service Branch  
Office of the Secretary

FROM: Charles Bechhoefer, ASLBP

re: Combustion Engineering, Inc.  
(Hematite Fuel Fabrication Facility  
License No. SNM-33) - Docket No. 70-36-MLA

In accordance with our telephone conversation of August 14, 1989, please place the attached document in the docket of this proceeding and serve all parties and petitioners (assuming that parties and petitioners have not already been served).

*Charles Bechhoefer*  
Charles Bechhoefer  
Presiding Officer  
ADMINISTRATIVE JUDGE

Attachment:  
Memo dated 8/8/88 from NMSS

RECEIVED  
ATOMIC SAFETY AND LICENSING BOARD  
WASHINGTON, D.C. 20555  
AUG 15 1989

R-25

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

AUG 6 1989

MEMORANDUM FOR: Charles Bechhoefer, Esq.  
Administrative Judge  
Atomic Safety and Licensing Board

FROM: Leland C. Rouse, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

SUBJECT: ISSUANCE OF AMENDMENT NO. 13 TO LICENSE NO. SNM-33,  
COMBUSTION ENGINEERING, INC. (ASLAP NO. 89-593-01-MLA)

As advised by the Office of General Counsel, we have enclosed for your information a copy of the licensing action issued on July 28, 1989, to Combustion Engineering, Inc., License No. SNM-33, Amendment No. 13, authorizing the startup and testing phase only of the new pellet production lines at the Hematite facility.

*Leland C. Rouse*  
Leland C. Rouse, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Enclosure: As stated

~~ASLAP NO. 89-593-01-MLA~~ JP



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

JUL 28 1989

Docket No. 70-36  
License No. SNM-33  
Amendment No. 13-

Combustion Engineering, Inc.  
ATTN: Mr. J. A. Rode, Plant Manager  
Hematite Fuel Manufacturing  
1000 Prospect Hill Road  
Windsor, CT 06095-0500

Gentlemen:

In accordance with the amendment application dated March 22, 1989, and pursuant to Title 10, Code of Federal Regulations, Part 70, Materials License No. SNM-33 is hereby amended to authorize the startup and testing of the new pellet production lines with depleted uranium and storage of licensed material in Building 256-2. Accordingly, Condition 9 is revised to include the date of March 22, 1989.

All other conditions of the license shall remain the same.

Revised License No. SNM-33 incorporating Amendment No. 13 and our Safety Evaluation Report are enclosed.

This amendment is issued following preparation of an Environmental Assessment related to the proposed action. Based on this assessment, a Finding of No Significant Impact has been prepared and approved pursuant to 10 CFR Part 51. Copies of this Finding, which was published in the Federal Register on May 24, 1989, and the supporting Environmental Assessment were forwarded to you on May 18, 1989.

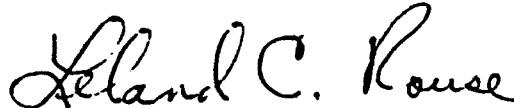
JUL 28 1989

Mr. J. A. Rode

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Please note that this amendment only authorizes the startup and testing phase with depleted uranium. Your amendment application dated May 1, 1989, requesting authorization for full scale production with enriched uranium has not been approved and is under consideration by NRC staff.

FOR THE NUCLEAR REGULATORY COMMISSION



Leland C. Rouse, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Enclosures:

1. Revised License No. SNM-33
2. Safety Evaluation Report

cc w/ encls:

Mr. A. E. Scherer, Director  
Nuclear Licensing

Mr. C. B. Brinkman, Manager  
Washington Nuclear Operations

Dr. P. L. McGill, Vice President  
Nuclear Fuel

Mr. H. E. Eskridge, Supervisor  
Licensing, Safety and Accountability

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1.	Combustion Engineering, Inc.	3. License number <b>SNM-33 Amendment No. 13</b>
2.	P. O. Box 107 Hematite, Missouri 63047	4. Expiration date <b>December 31, 1989</b>
		5. Docket or Reference No. <b>70-36</b>

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Uranium enriched to maximum 5.0 weight percent in the U-235 isotope	A. Any, excluding metal powder	A. 8,000 kilograms contained U-235
B. Uranium, any U-235 enrichment	B. Any	B. 350 grams
C. Source material (Uranium and Thorium)	C. Any, excluding metal powder	C. 50,000 kilograms
D. Cobalt-60	D. Sealed sources	D. 40 millicuries, total

9. Authorized use: For use in accordance with the statements, representations, and conditions contained in Part I of the licensee's renewal application dated February 26, 1982, and supplements dated July 21, 1982; February 21, 1983; May 31, 1984; April 29, June 6, and October 11, 1988; and February 10, and March 22, 1989; and letters dated February 29, 1984, January 20, 1986, and March 30, 1987.
10. Authorized place of use: The licensee's existing facilities in Hematite, Missouri, as described in the referenced license renewal application.
11. Quarterly inspections by the Supervisor, NLS&A, or his representative shall be preplanned and shall be documented. Such documentation shall be maintained for 2 years.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

SNM-33 Amendment No. 13

Docket or Reference number

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12. A written report shall be made by the NLS&A Supervisor to the Plant Manager every 6 months reviewing employee radiation exposure (internal and external) and effluent release data to determine:
  - a. if there are any upward trends developing in personnel exposure for identifiable categories of workers, types of operations, or in effluent releases;
  - b. if exposures and releases can be lowered in accordance with the ALARA commitment; and
  - c. if equipment for effluent and exposure control is being properly used, maintained, and inspected.
13. The licensee shall leak test sealed sources in accordance with the enclosed "License Condition For Leak Testing Sealed Byproduct Material Sources."
14. Release of equipment and material from the plant site or to clean areas onsite shall be in accordance with the enclosed "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated August 1987.
15. Pursuant to 10 CFR 20.302, the licensee is authorized to treat waste and scrap materials containing uranium enriched in U-235 and/or source material by incineration.
16. Within 60 days of the date of this license renewal, the licensee shall submit to the NRC a description of a proposed monitoring program to determine the quantity and environmental effects of radioactivity on spent limestone rock used as onsite fill material and to determine the environmental effects of outdoor storage of the alpha-contaminated material.
17. The licensee shall survey spent limestone rock discharge from each HF scrubber for beta contamination. Rock with beta contamination which exceeds five times the background of fresh rock shall not be used for landfill.
18. Within 60 days of the date of this license renewal, the licensee shall submit to NMSS a plan, including schedule, for the disposal of alpha-contaminated spent limestone rock.
19. The licensee shall decontaminate the two evaporation ponds such that the average residual contamination in each pond does not exceed the appropriate limit of either 250 picocuries of insoluble uranium or 100 picocuries of soluble uranium per dry gram of soil. The Tc-99 concentrations in a composite sample for each pond shall be determined.

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20. a. If the radioactivity in plant gaseous effluents exceeds 150  $\mu\text{Ci}$  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 the release rates. If the parameters important to a dose assessment change, a report shall be submitted within 30 days which describes the changes in parameters and includes an estimate of the resultant change in dose commitment.
- b. In the event that the calculated dose to any member of the public in any consecutive 12-month period is about to exceed the limits specified in 40 CFR 190.10, the licensee shall take immediate steps to reduce emissions so as to comply with 40 CFR 190.10. As provided in 40 CFR 190.11, the licensee may petition the Nuclear Regulatory Commission for a variance from the requirements of 40 CFR 190.10. If a petition for a variance is anticipated the licensee shall submit the request at least 90 days prior to exceeding the limits specified in 40 CFR 190.10.
21. The licensee shall maintain and execute the response measures of his Radiological Contingency Plan submitted to the Commission by letter dated December 28, 1987. The licensee shall also maintain implementing procedures for his Radiological Contingency Plan as necessary to implement the Plan. The licensee shall make no change in his Radiological Contingency Plan that would decrease the response effectiveness of the Plan without prior Commission approval as evidenced by a license amendment. The licensee may make changes to his Radiological Contingency Plan without prior Commission approval if the changes do not decrease the response effectiveness of the Plan. The licensee shall furnish the Chief, Fuel Cycle Safety Branch, Division of Industrial and Medical Nuclear Safety, NMSS, U. S. Nuclear Regulatory Commission, Washington, DC 20555, a report containing a description of each change within 6 months after the change is made.
22. At the end of the plant life, the licensee shall decontaminate the facilities and site in accordance with the general decommissioning plan submitted in the enclosure to the letter dated January 12, 1979, so that these facilities and grounds can be released to unrestricted use. The financial commitment to assure that funds will be available for decommissioning in the letter dated March 8, 1979, is hereby incorporated as a condition of the license.
23. The licensee shall continue the soil sampling program for the spent limestone fill areas, as described in the letter dated February 29, 1984, until discontinuance is authorized by the Commission.

<sup>1</sup> The report or petition should be submitted to the Director, Office of Nuclear Material Safety and Safeguards, with a copy to the Regional Administrator, Region III.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

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24. The monitoring program for the spent limestone shall include:
  - a. Continuous air sampling at the center of, and approximately 1 meter above, the uncovered spent limestone piles for a minimum 2-year period. The weekly samples may be composited and analyzed for uranium activity on a quarterly basis. The lower limit of detection shall be  $10^{-16}$   $\mu\text{Ci/ml}$ , or
  - b. Measurement of the uranium activity on the surface of the spent limestone. Prior to conducting such a program, the licensee shall submit the sampling and analytical program to the NRC for approval.
25. Processing of  $\text{UF}_6$  in 10-ton cylinders is not authorized.
26. The 10-ton  $\text{UF}_6$  cylinders shall be equipped with valve protectors.
27. The concrete pad for storage of  $\text{UF}_6$  cylinders and the surrounding area shall be sloped or graded so that any spilled combustible fluids would not be confined to the storage area.
28. No combustibles shall be stored on the concrete pad.
29. A  $\text{CO}_2$  fire extinguisher shall be readily available near the storage pad.
30. In addition to the controls in Section I of the enclosure to the letter dated March 30, 1987,  $\text{UF}_6$  cylinders which are in transport and containing  $\text{UF}_6$  heels shall be either sealed, in sealed overpacks, or in sealed vehicles.
31. Notwithstanding the statement in Section 4.2.3 of the application, the k-effective of a unit or an array of units shall not exceed 0.95 unless specifically authorized by the license.
32. Nuclear criticality safety evaluations performed by the licensee in accordance with Section 2.7, Part I of the application, shall be based on assumptions of optimum moderation and reflection of individual safe units and of arrays.
33. Nuclear criticality safety evaluations involving k-effective calculations performed by a Nuclear Criticality Specialist shall be independently reviewed and approved by an individual having, as a minimum, the qualifications of a Nuclear Criticality Specialist.



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- 34. For uranium enriched to more than 4.1 w/o U-235, the licensee shall limit the agglomeration/granulation process, each agglomerated powder storage location, and the pellet pressing operating to safe mass units as specified in Table 4.2.4, Part I of the application.
- 35. Deleted.



FOR THE NUCLEAR REGULATORY COMMISSION

*Leland C. Rouse*

Date: \_\_\_\_\_

By: Leland C. Rouse  
Division of Industrial and Medical  
Nuclear Safety, NMSS  
Washington, DC 20555



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

JUL 28 1989

DOCKET NO: 70-36

LICENSEE: Combustion Engineering, Inc. (CE)  
Hematite, Missouri

SUBJECT: SAFETY EVALUATION REPORT, AMENDMENT APPLICATION DATED MARCH 22, 1989, RE: STARTUP AND TEST OF NEW PELLET PRODUCTION LINES AND USE OF ADDITIONAL WAREHOUSE SPACE

Background

On September 30, 1988, CE informed the NRC of the intent to construct additional manufacturing space at the Hematite facility. This new manufacturing space is a large extension that joins together two existing facilities, the pellet plant (Building 255) and the recycle area (Building 240). A major portion of the new manufacturing space will be dedicated to the use of two new pellet production lines. The remainder of the building is to be used for additional utilities, offices, and material storage. In addition to the construction of this manufacturing space, the September 30, 1988, letter included a discussion of the expansion of the shipping, receiving, and storage areas. By letter dated October 31, 1988, NRC expressed no objection to CE initiating construction of the additional space provided that soil survey results were submitted for NRC review prior to constructing any flooring. CE submitted those results on December 20, 1988, and on January 24, 1989, Oak Ridge Associated Universities conducted an independent confirmatory survey. Accordingly, on February 24, 1989, CE was informed that there was no objection to the construction of the flooring for the pelletizing and warehouse areas. CE has since completed this construction and is presently installing the pellet production lines. In the subject application, CE requests authorization to startup and test the new pellet production lines with depleted uranium and to use the additional warehouse space for storage of licensed material.

Discussion

The new pellet production lines are housed in Building 254 and consist of blending, pressing, sintering, grinding, and packaging operations. At this time, the licensee requests authorization to startup and test these lines with depleted uranium. This testing phase will allow CE the opportunity to make any necessary adjustments and resolve any mechanical problems with the new process. By using depleted uranium, no controls are necessary for nuclear criticality safety. Similar activities have been conducted in existing facilities, and the radiation safety controls from the license have been extended to Building 254 and are adequate.

Building 256-2, an extension of the current warehouse Building 256-1, will be utilized to store licensed material. The activities that will be authorized have been conducted in existing facilities. Therefore, radiation safety and nuclear criticality safety controls from the license will be extended to Building 256-2 and are adequate.

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NRC staff prepared an Environmental Assessment for the proposed activities at CE. Based on that assessment, a Finding of No Significant Impact was made pursuant to 10 CFR Part 51. The Finding was published in the Federal Register on May 24, 1989.

Conclusion/Recommendation

This licensing action authorizes the startup and testing phase only with depleted uranium. CE's application dated May 1, 1989, which requested authorization for full production with enriched uranium, has not been approved by the Commission.

The staff concludes that the proposed activities will have no adverse effect on the public health and safety or the environment. Approval of the amendment application is recommended.

The Region III Principal Inspector has no objection to this proposed action.

*2176/for* *David A. McCaughey*  
David A. McCaughey  
Uranium Fuel Section  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Approved by:

*George H. Bidinger*  
George H. Bidinger, Section Leader

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

COMBUSTION ENGINEERING, INC.

Docket No. (s) 70-36-MLA

(Hematite Fuel Fabrication Facility  
License No. SNM-33)

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing NOTE BECHHOEFER TO JULIAN 8/15 have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

Administrative Judge  
Charles Bechhoefer  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Administrative Judge  
Jerry R. Kline  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Office of the General Counsel  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

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Washington, DC 20036


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Arlene Sandler  
President  
Coalition for the Environment  
St. Louis Chapter  
6267 Delmar Boulevard  
St. Louis, MO 63130

Dated at Rockville, Md. this  
15 day of August 1989

  
Office of the Secretary of the Commission