



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

10 pgs

JAN 5 1993

Docket No. 70-36  
License No. SNM-33  
Amendment No. 22

Combustion Engineering, Inc.  
ATTN: Mr. J. A. Rode, Plant Manager  
Hematite Nuclear Fuel Manufacturing  
P.O. Box 107  
Hematite, MO 63047

Gentlemen:

In accordance with your application dated October 30, 1992, and supplement dated November 24, 1992, and pursuant to Part 70 of Title 10 of the Code of Federal Regulations, Materials License No. SNM-33 is hereby amended to authorize the testing of the new fuel rod and bundle assembly processes with pellets and rods containing uranium source material. The operation will be conducted in an existing facility and the new building 230. This authorization shall expire 1 year from the date of this amendment. Accordingly, Condition 9 is amended to include the dates of October 30, and November 24, 1992.

All other conditions of the license shall remain the same.

This amendment only authorizes the use of uranium source material for testing the new rod and bundle assembly processes. This operation shall be conducted in accordance with approved written procedures.

Your amendment application dated August 5, 1992, requesting authorization for the storage of special nuclear material in the Kardex system and full production with enriched uranium has not been approved and is under consideration by the U.S. Nuclear Regulatory Commission staff.

630641

9301060225 930105  
PDR ADOCK 07000036  
C PDR

F-13  
NF15 1/1

JAN 5 1993

Combustion Engineering

2

Enclosed are copies of the revised Materials License No. SNM-33, the Safety Evaluation Report, and the Categorical Exclusion.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

John W. N. Hickey, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Enclosures:

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

cc w/encls:

Mr. A. E. Scherer, Vice President  
Regulatory Affairs

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

Dr. R. S. Siudek, President  
ABB CE Nuclear Fuel

Mr. J. F. Conant, Manager  
Nuclear Materials Licensing

Mr. H. E. Eskridge, Manager  
Nuclear Licensing, Safety and  
Accountability

Mr. S. B. Junkrans, Vice President  
Manufacturing Operations

Distribution w/encls.

~~Docket No. 70-36~~ ~~EPDR~~ ~~NRC File Center~~ NMSS R/F IMUF R/F  
IMSB R/F VLTharpe Region III SHO GFrance, RIII  
EKeegan MTokar SG(2) JGreeves SSoong  
MMessier, LFDCB

OFC	IMUF <i>SSoong</i>	E	IMUF <i>VLTharpe</i>		IMUF <i>MTokar</i>		IMUF <i>JHickey</i>	
NAME	<i>SSoong:mh</i>		VLTharpe		<i>MTokar</i>		JHickey	
DATE	<i>11/30/92</i>		11/30/92		<i>11/17/92</i>		<i>1/5/93</i>	

C = COVER

E = COVER & ENCLOSURE

N = NO COPY

OFFICIAL RECORD

## 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, 39, 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	SNM-33 Amendment No. 22
2. P. O. Box 107 Hematite, Missouri 63047	4. Expiration date	December 31, 1989
	5. Docket or Reference No.	70-36
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
E. Americium-241	E. Solid sources	E. 200 microcuries
F. Cesium-137	F. Sealed sources	F. 500 millicuries
G. Californium-252	G. Sealed sources	G. 4 milligrams
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; February 10, March 22, May 1, August 18, October 23, October 26, and November 8, 1989 (2); January 3, January 12, March 16, and September 4, 1990; August 12, 1991; and October 9, October 30, November 6, and November 24, 1992; and letters dated February 29, 1984, January 20, 1986, and March 30, 1987.		

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

SNM-33 Amendment No. 22

Docket or Reference number

70-36

JAN 5 1993

10. Authorized place of use: This licensee's existing facilities in Hematite, Missouri, as described in the referenced license renewal application.
11. Deleted.
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.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

SNM-33 Amendment No. 22

Docket or Reference number

70-36

JAN 5 1993

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.
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.<sup>1</sup>
- 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 letters dated December 28, 1987, and August 23, 1990. 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.

<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**

License number

SNM-33 Amendment No. 22

Docket or Reference number

70-36

JAN 5 1993

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.
24. The monitoring program for the spent limestone shall include:
- 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
  - 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.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

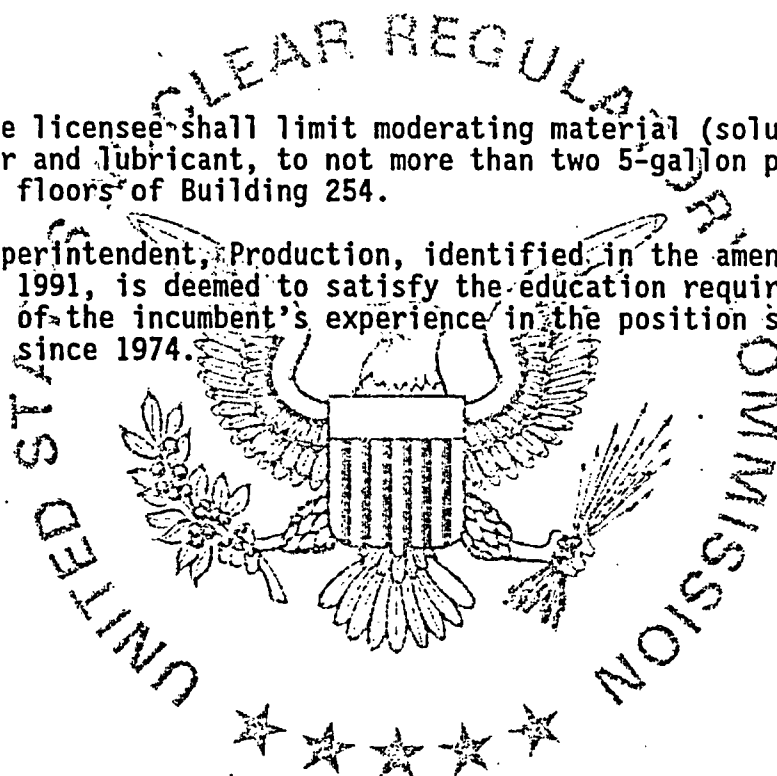
SNM-33 Amendment No. 22

Docket or Reference number

70-36

JAN 5 1993

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 operation to safe mass units as specified in Table 4.2.4, Part I of the application.
35. Deleted.
36. Deleted.
37. Deleted.
38. Deleted.
39. At all times, the licensee shall limit moderating material (solutions and powders), except poreformer and lubricant, to not more than two 5-gallon pails on each of the second and third floors of Building 254.
40. The incumbent Superintendent, Production, identified in the amendment application dated August 12, 1991, is deemed to satisfy the education requirements for the position because of the incumbent's experience in the position since 1981 and his plant experience since 1974.



FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

Date: JAN 5 1993

By: John W. Hickey  
Division of Industrial and  
Medical Nuclear Safety, NMSS  
Washington, DC 20555

35 11/30/92  
met 11/30/92  
C. H. Hickey  
1/5/93



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

JAN 5 1993

DOCKET NO: 70-36

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

SUBJECT: SAFETY EVALUATION REPORT, AMENDMENT APPLICATION DATED  
OCTOBER 30, 1992, AND SUPPLEMENT DATED NOVEMBER 24, 1992, RE  
STARTUP AND TEST OF NEW FUEL ROD AND BUNDLE ASSEMBLY PROCESSES

BACKGROUND

By application dated October 30, 1992, and supplement dated November 24, 1992, CE requested authorization to test the new fuel rod and bundle assembly processes with pellets and rods containing uranium source material. The operation will be performed in the existing Building 256 and the new Building 230. This request is one of several startup activities to be completed before full fuel production with enriched uranium commences in May 1993. CE requests that authorization be granted for 1 year. This evaluation does not include the full fuel production with enriched uranium; it will be addressed in a separate licensing action.

DISCUSSION

The requested test operation will allow CE to make necessary adjustments to the new and highly automated fuel pellet and rod handling equipment prior to actual production using enriched uranium. By using source material for testing, no controls are necessary for nuclear criticality safety.

RADIATION SAFETY

The existing radiation protection program, as described in the license, will be applicable and extended to cover the proposed test activity. Since uranium source material can result in surface contamination from beta and alpha radiation, additional measures will be taken to ensure that the contamination is properly detected and controlled during the test period. CE indicates that for each work station that involves the handling of unclad depleted or natural uranium, the area will be surveyed for beta and alpha contamination on a daily basis. The daily frequency may be reduced to weekly after 30 operational days of testing. The cleanup action will be initiated when the contamination levels exceed the preset action levels.

9301060240 930105  
PDR ADOCK 07000036  
C PDR



JAN 5 1993

Combustion Engineering, Inc.

2

CONCLUSION/RECOMMENDATION

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

The Region III staff has no objection to this licensing action.

Original Signed By:

Chuck Robinson  
Uranium Fuel Section  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Original Signed By:

Sean Soong  
Uranium Fuel Section  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

Approved by: Original Signed By: *Michael Tokar*  
Michael Tokar, Section Leader

[G:\cehser.ss]

OFC	IMUF:		IMUF:		IMUF:		IMUF:	
NAME	SSoong: <i>SS</i>		CRobinson: <i>CR</i>		VTharpe:		MTokar:	
DATE	11/30/92		11/30/92		11/30/92		12/24/92	

C = COVER

E = COVER & ENCLOSURE

N = NO COPY

JAN 5 1993

DOCKET NO: 70-36

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

SUBJECT: CATEGORICAL EXCLUSION FOR AMENDMENT REQUEST DATED  
OCTOBER 30, 1992, AND SUPPLEMENT DATED  
NOVEMBER 24, 1992, RESTART UP TESTING OF SELECTED  
EQUIPMENT

By amendment request dated October 30, 1992, and supplement November 24, 1992, CE requested an amendment to SNM-33 to use uranium source material in Building 230 for startup testing of the new fuel rod and bundle assembly equipment. An Environmental Assessment and a Finding of No Significant Impact have been issued for the new fuel rod and assembly operations. This assessment was based on operations using enriched uranium. Using source material (natural uranium) to test the new equipment will not adversely impact the public health and safety or the environment. Accordingly, pursuant to 10 CFR 51.22(c)(11), neither an Environmental Assessment nor an Environmental Impact Statement is warranted for the proposed action.

FOR THE NUCLEAR REGULATORY COMMISSION  
~~Original Signed By:~~

John W. N. Hickey, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety, NMSS

OFC	IMUF: <i>[Signature]</i>	IMUF:	IMUF: <i>[Signature]</i>	IMUF: <i>[Signature]</i>	IMSB: <i>[Signature]</i>
NAME	EKeegan:	SSoong: <i>[Signature]</i>	VTharpe: <i>[Signature]</i>	MYokar: <i>[Signature]</i>	JHickey:
DATE	12/16/92	12/16/92	12/17/92	12/24/92:	12/15/93:

OFFICIAL RECORD COPY  
[G:\cestart.ce]

9301060242 930105  
PDR ADOCK 07000036  
C PDR