

Region III
070-00036

JUN 8 1984

FCUP:GHB
70-36
SNM-33, Amendment No. 2

Combustion Engineering, Inc.
ATTN: Mr. H. E. Eskridge, Supervisor
Nuclear Licensing, Safety
and Accountability
P. O. Box 107
Hematite, Missouri 63047

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Docket File 70-36
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VLTharpe
GBidinger (2)
LCobb, IE
→ Region III
PDR
SHO
DWeiss, LFMB
GBennington, SGMT
WBrown, SGFF
EYShum

R

Gentlemen:

In accordance with your application dated February 29, 1984, and pursuant to Title 10, Code of Federal Regulations, Part 70, Materials License No. SNM-33 is hereby amended to add Conditions 23 and 24 which shall read as follows:

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:
- 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} μ 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 NR for approval.

All other conditions of this license shall remain the same.

These conditions were discussed, and agreed to, by your Mr. Eskridge and George Bidinger of my staff on May 30, 1984.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Original Signed By:
H. T. Crow
for
R. G. Page, Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS

H-33

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*See previous concurrence sheet.

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SURNAME	GBidinger/dp	VLTharpe	WTCrow	RGPage			
DATE	6/7/84	6/8/84	6/8/84	6/8/84			

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Combustion Engineering, Inc.
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 Nuclear Licensing, Safety and
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 P. O. Box 107
 Hematite, Missouri 63047

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In accordance with your application dated February 29, 1984, and pursuant to Title 10, Code of Federal Regulations, Part 70, Conditions 23 and 24 of Materials License No. SNM-33 are hereby added to read as follows:

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.
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All other conditions of this license shall remain the same.

These conditions were discussed, and agreed to, by your Mr. Eskridge and George Bidinger of my staff on May 30, 1984.

FOR THE NUCLEAR REGULATORY COMMISSION

R. G. Page, Chief
 Uranium Fuel Licensing Branch
 Division of Fuel Cycle and
 Material Safety, NMSS

OFFICE	FCUP. <i>PHB</i>	FCUF. <i>VL</i>	FCUP	FCUF			
SURNAME	GBidinger/dp.	VLTharpe	WICrow	RGPage			
DATE	6/7/84	6/8/84	6/ /84	6/ /84			

JUN 8 1984

FCUP:GHB

DOCKET NO.: 70-36
LICENSEE: Combustion Engineering, Inc. (CE)
FACILITY: Hematite, Missouri
SUBJECT: SAFETY EVALUATION REPORT, APPLICATION DATED
FEBRUARY 29, 1984 RE: ENVIRONMENTAL MONITORING
PROGRAM FOR SPENT LIMESTONE

Background

CE uses crushed limestone rock chips in scrubbers to remove HF from process offgases. The limestone chips are partially converted to calcium fluoride and are referred to as "spent limestone" upon removal from the scrubbers.

Prior to September 1979, all spent limestone with alpha activity below 100 dpm/100 cm² was quarantined in a pile in the SE corner of the fenced plant area. Since 1979, the same procedure has been followed except that, with NRC approval, spent limestone with no detectable activity (<100 dpm/100 cm²) has been used as onsite landfill in the unrestricted area. Since 1979, quarantined spent limestone has been piled in the SE corner of Building 255. All spent limestone with greater than 1000 dpm/100 cm² has been sent to licensed burial.

The purpose of this amendment is to establish an environmental monitoring program to determine the environmental effects of the onsite landfill and to develop information leading to disposal of all spent limestone.

Discussion

In response to License Conditions 16 and 18, CE has proposed an environmental monitoring program which is designed to (1) determine the source term for the spent limestone in the two landfill areas and in the two quarantine piles, (2) to measure possible soil contamination by the landfill material, and (3) to measure possible air contamination by the quarantine piles. This Safety Evaluation Report addresses environmental monitoring and disposal as two related but separate issues.

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Source Term

CE has proposed a sampling and analysis program for the landfill and quarantined spent limestone. For sampling, CE will impose 5 ft. by 5 ft. grids on all accumulations except for the post-1979 quarantine piles where a 2 ft. by 2 ft. grid will be used. A surface sample from each grid will be crushed, blended, and counted for gross alpha and gross beta. The beta analysis will be capable of detecting Tc-99 beta. A depth profile at one foot intervals will be taken in the center on each pile. Surface dust from the post-1979 quarantine pile will also be analyzed for gross alpha.

Soil Sampling

Quarterly soil samples will be collected at the downhill edge of the spent limestone fill areas and analyzed for gross alpha and gross beta. A soil depth profile will be performed if results exceed 5 times background. CE plans to terminate the soil sampling plan after data for 2 years has been accumulated. The NRC staff cannot agree to this termination until the data has been examined and environmental effects are known. Consequently, the NRC staff recommends the following condition:

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.

Movement of Spent Limestone to Fill Areas

CE plans to move the quarantined material to the fill areas on the CE property during the dry season (late summer or early fall). This is permissible provided that the fill areas are controlled as restricted areas or as permitted by 10 CFR 20.207.

CE contends that movement of this spent limestone to the fill areas is disposal in accordance with the NRC Branch Technical Position on Disposal or Onsite Storage of Thorium or Uranium From Past Operations. Because the radioactivity on the spent limestone is not homogeneously distributed, it is not obvious to the NRC staff that the Branch Technical Position is applicable. Movement of the spent limestone contaminated with radioactivity to the landfill areas is considered to be storage. Disposal of the spent limestone other than at a licensed burial site is not authorized at this time.

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Disposal of Spent Limestone

Prior to NRC authorization to dispose of the material at other than a licensed burial site, it will be necessary for CE to show that the airborne pathway dose does not exceed Option 1 or Option 2 limits or bases for the limits. If Option 1 limits can be satisfied, the NRC staff would approve Option 2 method of disposal. This restriction on the disposal option is necessary because of the heterogenous nature of spent limestone. If Option 2 limits or bases for limits are satisfied, the staff would authorize Option 2 disposal provided such disposal is noted in the land deed records.

CE can demonstrate conformance with Option 1 or Option 2 by an air sampling program or as an option, a spent limestone surface (dust) sampling program. The monitoring program shall meet the following condition:

- a. Continuous air sampling at the center of, and approximately 1 meter above, the uncovered spent limestone piles shall be conducted 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^{-10} $\mu\text{Ci/ml}$, or
- b. The uranium activity on the surface of the spent limestone shall be measured. Prior to conducting such a program, the licensee shall submit the sampling and analytical program to the NRC for approval.

Conclusion/Recommendation

It is the NRC staff's finding that the environmental monitoring program, as described in the February 29, 1984 letter, and as further conditioned above, will provide necessary information to make a decision on ultimate disposition of the spent limestone. Approval of the application is recommended.

Original Signed By:
E. Y. Shum

Edward Y. Shum
Uranium Process Licensing Section
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS

Original signed by
George H. Bidinger

George H. Bidinger
Uranium Process Licensing Section
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS

- Original Signed By:
W. T. Crow

Approved by: W. T. Crow, Section Leader

OFFICE	FCUP	FCUP	FCUF	FCUP			
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JUN 8 1984

DOCKET NO: 70-36

APPLICANT: Combustion Engineering, Inc. (CE)

FACILITY: Uranium Fuel Fabrication Plant
Hematite, MissouriSUBJECT: CATEGORICAL EXCLUSION UNDER THE PROVISION
OF 10 CFR 51.22(c)(11)

Description of the Proposed Action:

By letter dated February 29, 1984, the licensee proposed a monitoring program to NRC for approval as required in license conditions 16 and 18. The objective of the proposed monitoring program is to obtain information for the evaluation of the potential environmental impact associated with the existing on-site storage of slightly contaminated spent limestone at the Hematite site. The NRC staff, after evaluating the licensee's proposed program, and with further recommendations for improvement, has concluded that the proposed monitoring program will provide the necessary information to make a decision on the ultimate disposition of the spent limestone. Therefore, this action is of procedural in nature and in accordance with 10 CFR 51.22(c)(11), an environmental impact appraisal or an environmental impact statement is not warranted for this action.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Original Signed By:
W. T. Crow

for R. G. Page, Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS

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SURNAME	EYShum/dp	GHBidinger	VLTharpe	WTCrow <i>WTC</i>	RGPPage <i>WTC</i>		
DATE	5/23/84	5/27/84	5/29/84	6/4/84	6/8/84		