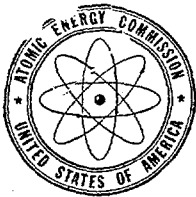


Div. of Inspection



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

IN REPLY REFER TO:

LEL:CFM
Pocket No. 70-139

JAN 22 1960

Engelhard Industries, Inc.
D. E. Makopento Division
Pine & Dunham Streets
Attleboro, Massachusetts

Attention: Mr. J. H. Durant
Business Manager

Gentlemen:

Enclosed is Special Nuclear Material License No.

SNM-185, as amended.

DISTRIBUTION

- L. D. Mackay, FIN - ORGO, w/encl.
- Div. of INS, w/encl. & ltr. dtd 9/25, 11/6 & 12/28/59 & 1/6/60
- D. F. Mussar, NMM, w/encl.
- H. Steels, LEL, w/encl.
- S. R. Gustavson, LEL, w/encl.

Very truly yours,

J. G. Delaney
Chief, Nuclear Materials Section
Licensing Branch
Division of Licensing and Regulation

Enclosures
SNM-185, as amended

INT'D INSPECTOR DIVISION

FEB 1 1960

RECEIVED

Hees

*Delivered to the office
by the EESB.*

Clar

3-4-60

August 4, 1960.

U.S. Atomic Energy Commission
Division of Licensing and Regulation
Health Safety Branch
Germantown, Maryland

Re: Engelhard Industries, Inc. SNM 185
Report of Radiation Exposure

Gentlemen:

We are enclosing herewith four copies of our report of radiation exposure to two of our employees involved in melting of special nuclear material containing alloys.

The members of the AEC New York Operations Office have visited our plant and interviewed the personnel involved, and we understand, will be sending their own report of the matter through channels.

We will appreciate receiving your acknowledgement and any comments you would have to make concerning this report and its contents. Thank you very much.

NYOO COMPLIANCE DIVISION

AUG 10 1960

RECEIVED

Very truly yours,

D. E. MAKEPEACE DIVISION

John H. Durant

John H. Durant
Business Manager

JHD/rp
enclosures.

P.S. - We have recently received a communication from the Commonwealth of Massachusetts, pertaining to their investigation of overexposure incident and are enclosing it as Exhibit D in our report.

happened to "C" where is this? And what



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

IN REPLY REFER TO:

LRL, CFM

Doclet No. 70-139

MAR 2 1960

**Engelhard Industries, Inc.
D. E. Hokepoco Division
Pine & Dunham Streets
Attleboro, Massachusetts**

**Attention: Mr. John H. Durant
Business Manager**

Gentlemen:

Enclosed is Special Nuclear Material License No.

SNM-105, as amended.

DISTRIBUTION

**L. D. MacKay, ORCO - FIN, w/encl.
Div. of INS, w/encl.
D. F. Musser, MM, w/encl.
H. Steele, LRL, w/encl.
S. R. Gustavson, LRL, w/encl.**

Very truly yours,

**J. C. Delany
Chief, Nuclear Materials Section
Licensing Branch
Division of Licensing and Regulation**

Enclosure:

SNM-105, as amended

NYCO INSPECTION DIVISION

MAR 3 1960

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UNITED STATES
ATOMIC ENERGY COMMISSION

SPECIAL NUCLEAR MATERIAL LICENSE

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 70, "Special Nuclear Material Regulations," a license is hereby issued authorizing the licensee to receive and possess the special nuclear material designated below; to use such special nuclear material for the purpose(s) and at the place(s) designated below; and to transfer such material to persons authorized to receive it in accordance with the regulations in said Part. This license shall be deemed to contain the conditions specified in Section 70.32(a) of said regulations, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee		3. License No.
1. Name	Engelhard Industries, Inc.	SM-185, as amended
2. Address	D. E. Hesperose Division Pine & Dasher Streets Attleboro, Massachusetts	4. Expiration Date
		September 30, 1962
		5. Docket No.
		70-130
6. Special Nuclear Material	7. Maximum quantity of special nuclear material which licensee may possess at any one time under this license	
Uranium enriched in the U-235 isotope.	Six hundred thirty (630) lbs of U-235 contained in uranium enriched in the U-235 isotope.	
8. Authorized use For the fabrication of reactor fuel elements and related activities using the procedures described in the licensee's application of 7/30/57, as amended 2/7 & 12/9/58, 1/13 & 30, 3/3, 4/9 & (2) of 5/17 & 28, 6/3, 7/31, 8/3, 9/23 & 25, 10/8, 21 & 30, 11/2, 5 & 6 and 12/28/59 and (item'd below)		
9. Quantity of special nuclear material allocated to licensee pursuant to Section 70.31(b) of said part		
None		

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.

Authorized place of use: The licensee's fuel element processing plant located on Route No. 152, Plainville, Massachusetts.

8. (cont'd) 1/5 and 2/16/60.

For the U. S. ATOMIC ENERGY COMMISSION

Date of issuance **MAR 2 1960**

J. C. Delaney
Division of Licensing and Regulation

ENGELHARD INDUSTRIES, INC.

For Div of Inspection

2-29-68

D. E. MAKEPEACE DIVISION

PINE & DUNHAM STREETS
ATTLEBORO, MASS.
ATTLEBORO 1-0090

February 16, 1960

United States Atomic Energy Commission
Germantown, Maryland

Attention: Mr. Charles P. McCallum
Division of Licensing and Regulation

Reference: Docket 70-139-SNW-185

Request For Amendment To SNW-185
Feasibility Report SNW-5 Rev.A
To Allow The Decladding Of Zr Clad PRDC Scrap

Gentlemen:

In order to reclaim as much uranium as possible in PRDC fuel element fabrication, it has become necessary for D. E. Makepeace Division to declad zirconium-clad scrap material for remelting. The method which is to be used is that of Clark and Kibbey, ORNL 2460, "Hydrofluoric Acid Decladding Of Zirconium-Clad Power Reactor Fuel Elements."

Scrap zirconium-clad material will be immersed in a 4.5 M solution of hydrofluoric acid. Zirconium cladding is approximately .005" thick. A 5" ID "always safe" PVC cylinder 20" deep will contain the solution. This operation will be performed in our liquid waste disposal area in order to be well removed from other enriched uranium processing.

Immersion time will be 30 seconds per batch. A batch will consist of no more than 1500 grams of zirconium-clad U-10% Mo core alloy which is 25.6% enriched. This corresponds to 10 individual pins of .158" dia. x 30.5" long. This will give a maximum mass of 345 grams U-235 in the cylinder in the form of metallic scrap at any time.

United States Atomic Energy Commission
Germantown, Maryland
Mr. Charles P. McCallum

-continued-

The core alloy is attacked at the rate 0.11 mg./cm²/min. (Ref: ORNL 2460, Table 2, page 8.) with a 5M concentration of acid. Each batch of scrap, therefore, would result in the dissolving of .025 gm. U-235 if left in solution for one minute. A maximum of 20 batches will be declassified before changing solutions. This will result in an accumulation of 0.50 gm. U-235 in the solution. Spent solutions will be sampled, analysed for U content, and placed in 30 gallon polyethylene-lined barrels to await disposition. A maximum of 100 gms. of U-235 per barrel is usually adhered to under normal criticality control procedure. However, the total accumulation from 30 cylinders of solution each of 1 gallon capacity could result in a maximum of only 15 grams U-235 per barrel.

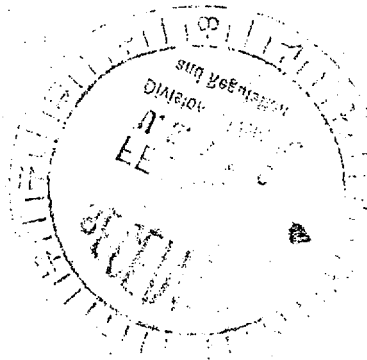
We would appreciate your approval of this process and incorporation as an amendment to our license.

Very truly yours,

D. E. MAKEPEACE DIVISION

(S) John H. Durant
John H. Durant
Business Manager

JHD/jet



RECEIVED

FEB 28 1950

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DOONE, INC.

70-139

X

ENGELHARD INDUSTRIES, INC.

D. E. MAKEPEACE DIVISION

FEASIBILITY REPORT DEM-6

FABRICATION OF 164 ENRICHED (10%)
FUEL PINS FOR THE SRE TEST PROGRAM

WRITTEN BY: N. WEISS

MARCH 2, 1959

ENGELHARD INDUSTRIES, INC.

D. E. MAKEPEACE DIVISION

FEASIBILITY REPORT DEM-6

Fabrication of 164 Enriched (10%) Fuel Pins for the
SRE Test Program.

Written by: N. Weiss

March 2, 1959

ENGELHARD INDUSTRIES, INC.

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Written by: N. Weiss

March 2, 1959

ENGELHARD INDUSTRIES, INC.

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Fabrication of 16½ Enriched (10%) Fuel Pins for the
SRE Test Program.

Written by: N. Weiss

March 2, 1959

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