

Attleboro, Mass.
H. H. Weiss

DATE OF DOCUMENT:

12-20-61

DATE RECEIVED

12-26-61

NO.

655

LTR.

MEMO:

REPORT:

OTHER:

X

TO:

Russbauer

ORIG.:

CC:

OTHER:

X

ACTION NECESSARY

CONCURRENCE

DATE ANSWERED:

NO ACTION NECESSARY

COMMENT

BY:

CLASSIF.:

POST OFFICE

FILE CODE:

70-139

REG. NO.:

DESCRIPTION: (Must Be Unclassified)

Mr. req. an amendment to Lic SM-185 to allow shipment of enriched uranium acid solutions to a refinery.

REFERRED TO

DATE

RECEIVED BY

Russbauer

12-26

file cv. w/file

cv. for Compliance and ABC PER

McLaney 12/26

ENCLOSURES: (3 cvs.)

Sketch -- Proposed Spacing and Bracing Arrang't. to Refinery

REMARKS:

H. H. Distributions: 1 - H. Steele

U. S. ATOMIC ENERGY COMMISSION

U. S. GOVERNMENT PRINTING OFFICE: 1961 - 618959

MAIL CONTROL FORM FORM 8

D. E. MAKEPEACE DIVISION

PINE & DUNHAM STREETS

ATTLEBORO, MASS.

ATTLEBORO 1-0090

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MYrtle 5-9358

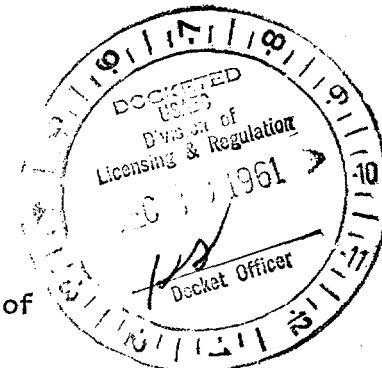
December 20, 1961

United States Atomic Energy Commission
Division of Licensing and Regulation
Germantown, Maryland

Attention: Mr. Donald Nussbaumer

Reference: Docket 70-139; SNM-185

Subject: Request for License Amendment to Allow Shipment of
Enriched Uranium Acid Solutions to a Refinery



Gentlemen:

We have presently in our possession approximately 2000 gallons of acid solutions containing an estimated quantity of 7 kg. of U-235 content. These solutions are stored in 50 gallon polyethylene lined drums, each drum limited to a maximum concentration of 2 grams U-235 per liter.

It is the purpose of this letter to propose shipping procedures for the transport of this material to a refinery, and to request amendment to our Special Nuclear Materials License 185, which would authorize us to do so at the earliest opportunity. Nuclear Safety data has been obtained from TID-7019, Guide to Shipment of U-235 Enriched Uranium Materials.

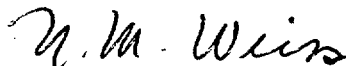
We propose to ship a maximum of 20 barrels of solution at one time for recovery. Shipment will be made via exclusive use vehicle. The barrels will be spaced to maintain a 2 foot edge - edge separation in accordance with conditions specified in TID-7019, Table X, Page 20, for a two dimensional infinite square array. The spacing between individual units will be maintained by a wooden framework fastened to the truck bed and sides. A sketch showing the construction and spacing of a typical shipment is attached for reference.

In order to obtain additional verification as to the nuclear safety of the proposed configuration, solid angle calculations have been made in accordance with TID-7019, Appendix 4, B.I., Page 74, and Appendix 5, Page 75. The interaction solid angle between a central unit and an adjacent unit is 0.569 steradians. The total fractional solid angle is less than .05 which is safe for a k of greater than 0.80. The k for each container is well under 0.80, since the H/X ratio has been calculated as approximately 13,000.

We trust that the above information will serve to facilitate your appraisal of our request, since it is urgent that we ship this material as soon as possible. Should further information be required, do not hesitate to call by collect telephone.

Very truly yours,

ENGELHARD INDUSTRIES, INC.
D. E. Makepeace Division



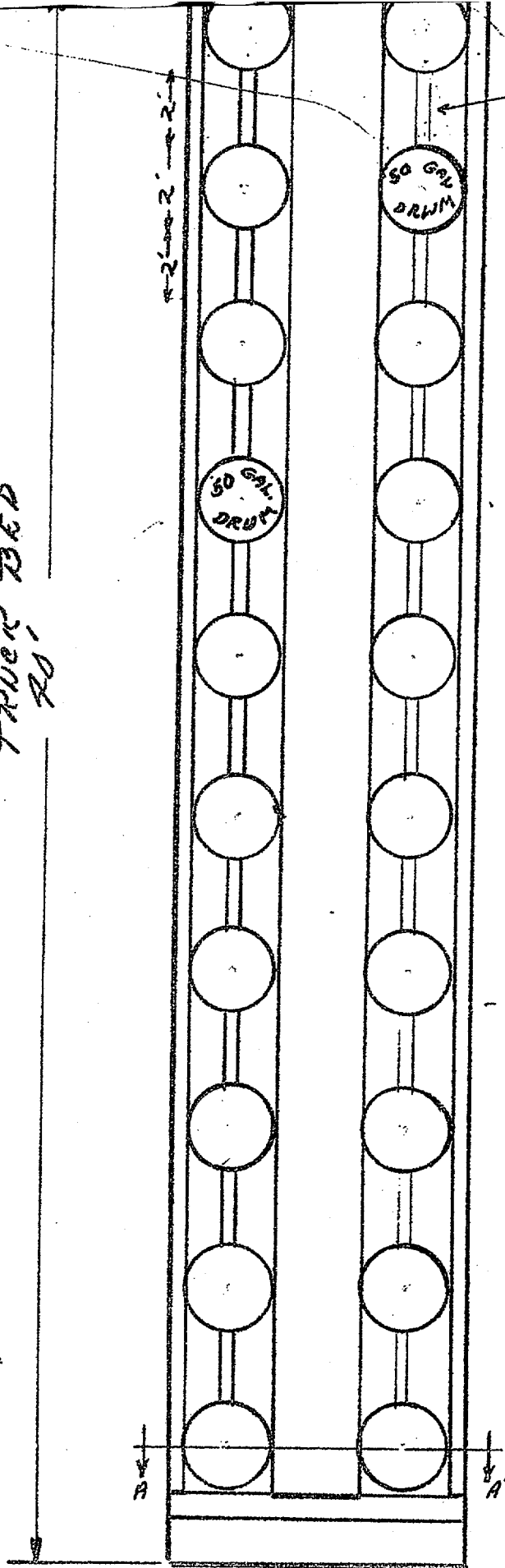
N. M. Weiss
Health & Safety Manager

NMW:pmr

ENGLEHARD INDUSTRIES
D. E. MAKEPEACE DIVISION
PLAINVILLE, MASS.

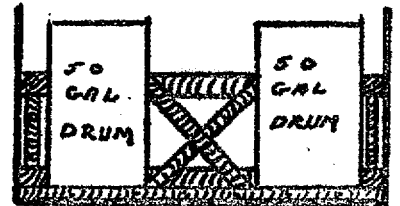
PROPOSED SPACING AND BRACING ARRANGEMENT FOR SHIPMENT
OF ENRICHED URANIUM ACID SOLUTIONS TO REFINERY

TRUCK BED
RD.



BRACING

BRACING STRUCTURE
OF 2"x4" & 2"x6"
LUMBER



SECTION A A'