

Donald A. Nussbaumer, Chief
Source & Special Nuclear Materials Branch, DML

April 8, 1964

Charles D. Luke, Chief
Criticality Branch, DML

SHIPPING CONTAINER FOR SCRAP

I suggest the following reply to L. J. Swallow's wire of March 23. I have taken into consideration Mr. Christian Beck's comments of March 26, 1964.

"The shipping container shown on page 67 of TID-7019 does not meet the requirements of the Division of Materials Licensing for shipping uranium scrap of unspecified homogeneity and composition, which may contain up to 2 kilograms of U-235 in fully enriched uranium. The use of wood bracing, the employment of stovepipe to insure maintenance of geometry and the specification of a 7" diameter, which may not be a safe diameter, all preclude the acceptance of this container for shipments of this type.

"At the present time, we would consider the acceptability of the container on page 67 of TID-7019 for shipping specified uranium scrap upon your submission of evidence that the shipment would be safe by the usual margin considering (a) no containment of the scrap in the stovepipe; (b) rearrangement of the scrap in most reactive configuration; (c) leakage of water to the extent of providing the most effective degree of moderation; (d) the maximum number of packages per shipment, based upon the dimensions of the 55-gallon outer container resulting from the 30' drop test, and any special loading pattern; (e) shoring or other means to insure maintenance of any specified loading pattern; and (f) control of the shipment to insure against commingling of your shipment with other shipments of special nuclear material."

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Donald A. Nussbaumer, Chief, Source and
Special Nuclear Materials Branch, LR

March 26, 1964

Christian Beck, Staff Engineer - Structural
Fuels Processing Branch, LR

UNITED NUCLEAR CORPORATION--APPROVEMENT OF SHIPPING CONTAINER,
MARCH 23, 1964, DOCKET NO. 70-36

I have reviewed the shipping container, referred to in subject
TWX, for structural integrity in complying with Part 71 (proposed)
requirements, and have the following comments:

- a. The design referred to is very similar to one that was recently tested at Oak Ridge, and which showed excessive damage in a 30 ft. drop test. The 2 x 4 inch bracing splintered badly and the bird was free to move inside the drum. Even in the case of a 4 ft. drop, part of the wood bracing splintered. In these tests the total weight of the bird, i.e., the weight of the contents and the pipe container, was 175 lbs. This may be at least the weight of the bird in subject container, so it is very doubtful if subject container will meet our requirements.
- b. As a general comment, it may be commented that wood spacers are not too effective in the required impact resistance, particularly in view of its vulnerability to excessive splintering.
- c. It is suggested that, if the applicant wants to pursue the proposed design, more detail data be submitted, to include test results and/or an analytical assessment of its strength. The data should, of course, also include the maximum weight of the contents.

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TWX INCOMING

GOOD AFTERNOON

THIS IS MALLINCKRODT STL

MARCH 23 1964

1964 MAR 23 PM 3 17

U.S. ATOMIC ENERGY COMM.
TWX UNIT

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DIV LICENSING AND REGULATION

WASHINGTON D C

DOCKET, NO. 70-36

MR. DONALD NUSSEBAUMER

EXTRA

DOES THE SHIPPING CONTAINER SHOWN ON PAGE 67 OF TID-7019 "GUIDE TO SHIPMENT OF U-235 ENRICHED URANIUM MATERIALS" MEET THE REQUIREMENTS OF DIV OF LICENSING AND REGULATION FOR AN SNM LICENSE FOR SHIPMENT OF 93 PCT ENRICHED SOLID SCRAP.

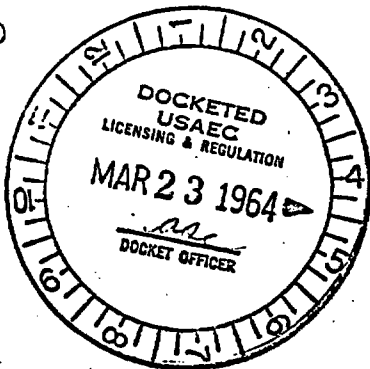
L J SWALLOW

UNITED NUCLEAR CORP

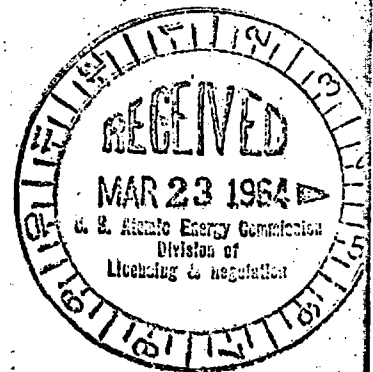
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