

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

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70-36

SNM-33, Amendment No. 56

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United Nuclear Corporation  
Commercial Products Division  
Route 21A  
Hematite, Missouri 63047

Attention: Mr. L. J. Swallow, Manager  
Nuclear and Industrial Safety

Gentlemen:

Reference: NIS:LJS-70-675

Pursuant to Title 10, Code of Federal Regulations, Part 70, Special Nuclear Material License No. SNM-33, dated April 21, 1965, is hereby amended to authorize the processing of scrap materials containing uranium enriched up to 5% in the U-235 isotope in the Green Room in accordance with your application dated February 27, 1970.

This amendment expires August 1, 1970.

All other conditions of this license shall remain the same.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed by  
Donald A. Nussbaumer

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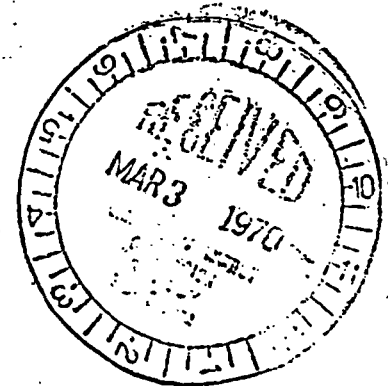
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February 27, 1970

In Reply Refer to NIS:LJS-70-675

Mr. Donald A. Nussbaumer, Chief  
Source & Special Nuclear Material Branch  
Division of Material Licensing  
4915 St. Elmo Place  
Bethesda, Maryland 30014



Subject: SNM-33, Docket 70-36, Request for Approval to Process Up To  
For Div of Compliance 5% Enrichment In The Green Room

Reference: (1) Application for Renewal dated 10/31/68, as revised  
2/20/70, NIS:LJS-70-667

Gentlemen:

Amendments number 49 and 50 to SNM-33, dated April 21, 1965, limit the maximum enrichment for Wet Recovery, Oxidation-Reduction and Blending and Packaging to 3.2%. These steps are described in detail in Subpart 823 of Reference (1). (NOTE: Activities described in Subpart 823 of Reference 1 are identical to those approved by amendment 49 and 50 to SNM-33, dated April 21, 1965.)

We respectfully request amendment of SNM-33 to permit:

1. Wet Recovery, Oxidation-Reduction and Blending and Packaging, as described in Subpart 823 of Reference 1. for  $U^{235}$  enrichments up to and including 5.0%.
2. Batch limits up to 50.0 kg U or the safe batch corresponding to actual enrichment in process whichever is smaller. Safe batch limits shall be determined from Figure 309-XVII dated 2/6/70, for powdered material and Figure 309-XIII, dated 2/6/70, for  $UO_2$  pellets (both from Reference 1).

Justification:

1. Enrichment Limit  
We have approximately 200 kg U in the range of 3.2% to 5.0% enrichment. Most of this is large bulk low uranium content material.

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Justification: (continued)

2. Enrichment Verification

Prior to start of the dissolution process the enrichment of each container of material shall be verified by analysis of a representative sample. The actual material involved can be grouped in three categories:

- a) Reject  $UO_2$  pellets (rejected for physical attributes such as dimensions, density, surface finish).
- b) Impure oxide powder, ADU and homogeneous solids (such as incinerator ash).
- c) Heterogeneous low uranium content solids such as filters, paper, rags.

Pellets are produced with an identifying mark on each pellet. This provides direct positive identification of enrichment. A visual inspection of these pellets shall be made to verify the identifying mark and confirm the enrichment.

The oxide powder ADU and incinerator ash is homogeneous. A representative sample of each container shall be taken for enrichment measurement.

Heterogeneous material shall be calcined as per Paragraph 823.2.5 and 823.3.5 of Reference 1. The resultant ash collected in each container shall be blended and each container sampled for enrichment measurement.

Other conditions approved by Amendment 49 and 50 remain unchanged.

We request this Amendment be issued for the period from date of approval until August 1, 1970.

Your prompt attention to this is respectfully requested. Our production schedules are such that the specific material for which this Amendment is required can be processed immediately.

Respectfully yours,



L. J. Swallow, Manager  
Nuclear & Industrial Safety

LJS/gm