

DML:CEM  
70-820  
SNM-777, Amendment No. 71-21

AUG 13 1970

United Nuclear Corporation  
Attn: Mr. David G. Darr  
Nuclear & Industrial Safety Department  
Commercial Products Division  
Hematite, Missouri 63047

Gentlemen:

Enclosed is Amendment No. 71-21 to Special Nuclear Material License No. SNM-777 authorizing the delivery of special nuclear material to a carrier for transport in the UNC-2800 package. This amendment supersedes in its entirety Amendment No. 71-19 to this license.

As requested in your application, we have forwarded a copy of this amendment to Mr. William A. Brobst of the Department of Transportation. This amendment does not authorize the transport of special nuclear material. Such transport is normally subject to regulation by the Department of Transportation (DOT). Questions regarding their requirements should be directed to DOT.

Sincerely,

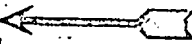
Original Signed by  
Donald A. Nussbaumer

Donald A. Nussbaumer, Chief  
Fuel Fabrication and  
Transportation Branch  
Division of Materials Licensing

Enclosure:  
As stated

cc: Mr. William A. Brobst  
Department of Transportation

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UNITED STATES  
ATOMIC ENERGY COMMISSION

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LICENSE AMENDMENT  
for  
DELIVERY OF SPECIAL NUCLEAR MATERIAL  
to a  
CARRIER FOR TRANSPORT

Pursuant to the Atomic Energy Act of 1954 and Title 10, Chapter 1, Code of Federal Regulations, Part 70 and Part 71, the following amendment to the special nuclear material license identified below is hereby issued, authorizing the licensee to deliver special nuclear material to a carrier for transport, and is subject to the conditions specified in the license and to the conditions specified below.

LICENSEE	
1. Name: United Nuclear Corporation	3. License No. <u>SNM-777</u>
2. Address: 365 Winchester Avenue New Haven, Connecticut 06508	Amendment No. <u>71-21</u>
	4. Docket No. <u>70-820</u>

CONDITIONS

5. (a) Packaging

(1) Model number

UNC-2800

(2) Description

Fuel element support is a 9" high x 10" wide x 192" long, 7-gage steel shaped strongback with adjustable end clamps and cross support brackets. The fuel element support is shock mounted to an outer container by shear mounts. The outer container is a 12-gage steel cylinder 36" ID x 207" long with flange closure, skids, stacking brackets and roll rings.

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(3) Drawings

Container constructed in accordance with Applied Design Company Drawings 874A1 through 874A7, 874A99 through 874A114, and 874A116 through 874A136. Shipping arrangement for fuel rod assemblies as shown in United Nuclear Corporation Drawing R.E.C. 18253, Rev. 0. Loading arrangements for BWR fuel elements as shown in UNC Drawing D-304329, Rev. 1.

(b) Contents

(1) Type and form of material

(i) Uranium dioxide as Zircaloy-2 clad unirradiated PWR and BWR fuel elements of the following specifications:

	a. <u>PWR</u>	b. <u>BWR</u>
Pellet diameter	0.3145"	0.482"
Fuel length	91.0"	108"
Rods/element	238	36
Cross sectional area	7.615" x 7.615"	4.38" x 4.38"
U-235 enrichment	3.5 w/o	2.34 w/o
U-235/element	8.685 kg	2.3 kg

(ii) PuO<sub>2</sub> or UO<sub>2</sub> or mixtures of these materials as sintered ceramic pellets fully clad in 0.035" thick Zircaloy-2 as fuel rods or fuel elements of the following specifications:

	<u>Rod</u>	<u>Element</u>
Pellet diameter	0.482"	0.482"
Fuel length	108"	108"
Rods/element	---	36
Cross sectional area	---	4.38" x 4.38"
U-235 enrichment	Nat.	2.34 w/o
U-235/element	---	1.806 kg
Pu/rod-element	0.066 kg	0.594 kg
Minimum Pu-240	20.6 w/o	20.6 w/o

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5. (b)(2) Maximum quantity  
of material per  
package

(i) For the contents described in  
5(b)(1)(i):

a. One (1) PWR fuel element (8.685  
kg U-235) or

b. Four (4) BWR fuel elements  
(9.2 kg U-235).

(ii) For the contents described in  
5(b)(1)(ii):

Ninety (90) fuel rods (5.94 kg PU)  
or

Two (2) fuel elements (3.612 kg  
U-235 and 1.188 kg Pu).

(c) Fissile Class

I, II and III

(1) Fissile Class I

For the contents described in 5(b)(1)  
(i)b. and limited in 5(b)(2)(i)b.

(2) Minimum transport  
index to be shown  
on label for Class II

(i) For the contents described in  
5(b)(1)(i)a. and limited in  
5(b)(2)(i)a:

1.3

(ii) For the contents described in  
5(b)(1)(ii) and limited in 5(b)  
(2)(ii):

7.1

(3) Maximum number of  
packages per ship-  
ment for Class III

(i) For the contents described in  
5(b)(1)(i)a. and limited in  
5(b)(2)(i)a:

80 packages

(ii) For the contents described in  
5(b)(1)(ii) and limited in 5(b)  
(2)(ii):

17 packages

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6. This amendment supersedes, in its entirety, Amendment No. 71-19 to this license dated October 3, 1969.
7. The package authorized by this amendment is hereby approved for use under the general license provisions of paragraph 71.7(b) of 10 CFR Part 71.

#### REFERENCES

Licensee's application dated September 15, 1967, requesting approval to deliver special nuclear material to a carrier for transport in the UNC-2800 package.

Supplements dated January 9, September 18, and October 1, 1969; and June 20 and July 22, 1970.

FOR THE ATOMIC ENERGY COMMISSION

Date of Amendment AUG 13 1970

Original Signed by  
Donald A. Nussbaumer

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Donald A. Nussbaumer  
Division of Materials Licensing

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