

JAN 31 1969

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70-820

SNM-777, Amendment No. ~~48~~ 49

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United Nuclear Corporation
Hematite, Missouri 63047

Attention: Mr. L. J. Swallow, Manager
Nuclear & Industrial Safety Department
Commercial Products Division

Gentlemen:

Pursuant to Title 10, Code of Federal Regulations, Part 70, Special Nuclear Material License No. SNM-777, dated November 25, 1964, is hereby amended to authorize the receipt and storage of fuel assemblies and rods as described in your application dated January 23, 1969.

All other conditions of this license shall remain the same.

Enclosed is Amendment No. 71-17 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 Amendment No. 71-6 to this license. On page 13a of your application, the loading per BWR assembly was listed as 4.6 kilograms U-235. Since you did not provide any additional safety analyses, this amendment limits this loading to the 2.3 kilograms U-235 which was justified in your original application. We have not amended Special Nuclear Material License No. SNM-33, since this license does not authorize the possession of the plutonium proposed as contents of this package.

As requested in your application dated January 9, 1969, 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

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of special nuclear material. Such transport is normally subject to regulation by the Department of Transportation (DOT). Questions regarding its requirements should be directed to DOT.


FOR THE ATOMIC ENERGY COMMISSION

Donald A. Nussbaumer, Chief
Source & Special Nuclear Materials
Branch
Division of Materials Licensing

Enclosure:
As stated

cc: Mr. William A. Brobst
Department of Transportation

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DATE ▶	1/31/69	1/31/69	1/31/69	1/31/69		

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UNITED STATES
ATOMIC ENERGY COMMISSION

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

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, 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 that 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>71-17</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. |
| (3) Drawings | Container constructed in accordance with Applied Design Company drawings 874A1 through 974A7, 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. |

(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: |
|-------------------------------|--|

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	PWR	BWR
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) PuO₂ or UO₂ 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:

	a. Rod	b. Element
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

- (2) Maximum quantity of material per package
- (i) For the contents described in 5(b)(1)(i):
- One (1) PWR fuel element (8.685 kg U-235) or two (2) BWR fuel elements (4.6 kg U-235).
- (ii) For the contents described in 5(b)(1)(ii):
- a. Ninety (90) fuel rods (5.94 kg Pu) or
- b. Two (2) fuel elements (3.612 kg U-235 and 1.188 kg Pu.)

(c) Fissile Class

II and III

- (1) Minimum transport index to be shown on label for Class II
- (i) For the contents described in 5(b)(1)(i) and 5(b)(1)(ii) b. and limited in 5(b)(2)(i) and 5(b)(2)(ii) b. :

1.3

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

7.1

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- (2) Maximum number of (i) For the contents described in 5(b)(1)(i) and packages per shipment for Class III 5(b)(1)(ii) b. and limited in 5(b)(2)(i) and 5(b)(2)(ii) b. :

80 packages

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

17 packages

6. This amendment supersedes, in its entirety, Amendment No. 71-6 to this license dated October 17, 1967.

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.

Supplement dated January 9, 1969.

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1/30/69 1-30-69

FOR THE ATOMIC ENERGY COMMISSION

COPY

Date of Amendment JAN 31 1969

Donald A. Nussbaumer
Division of Materials Licensing