



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D.C.

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IN REPLY REFER TO:

DML:CEM

70-36

SNM-33, Amendment No. 71-4

70-371

SNM-368, Amendment No. 71-5

70-820

SNM-777, Amendment No. 71-4

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United Nuclear Corporation  
Post Office Box 1883  
365 Winchester Avenue  
New Haven, Connecticut 06508

Attention: Mr. D. F. Cronin  
Director of Licensing

Gentlemen:

Enclosed are Amendment Nos. 71-4, 71-5 and 71-4 to Special Nuclear Material License Nos. SNM-33, SNM-368 and SNM-777, respectively, to authorize the delivery of special nuclear material to a carrier for transport in the UNC-1634 Package.

These amendments constitute a superseding license to deliver special nuclear material in the form of fuel elements to a carrier for transport. The limited exemption (insofar as it applies to the license to deliver fuel elements to a carrier) granted by Section 71.12, 10 CFR 71, by filing an application within the 3 month period after the effective date of the regulation, expires upon issuance of this superseding license. This does not, however, affect the limited exemption for packages previously approved for other forms of special nuclear material. As discussed with your Mr. Cronin, the UNC-1886 package is not included in the superseding license. Our letter of March 2, 1967, requested additional information concerning this package. This information was received on June 28, 1967, and is under review.

In regard to the UNC-1634 package, please note that we were able to approve slightly greater fuel loading and number of packages for shipment than was requested in your application. This was possible since it is not necessary to assume, as you did, the presense of moderator

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within the active fuel volume as a normal condition of transport. Also note that the contents of the package have been expressed as general specifications for fuel elements rather than specific specifications for the BAWTR fuel elements. In our analysis, we have used a 2-inch loss of spacing based on the shifting of the inner container and the deformation to the outer container rather than the 1.5-inch loss of spacing used in your evaluation.

Please note that these amendments do 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. As requested in your June 12, 1967, letter, we are forwarding copies of these amendments to DOT.

Very truly yours,

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

Enclosures:  
As stated above

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, 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-33</u> |
| 2. Address: P. O. Box 1883<br>365 Winchester Avenue<br>New Haven, Connecticut 06508 | Amendment No. <u>71-4</u>    |
|   | 4. Docket No. <u>70-36</u>   |

CONDITIONS

5. (a) Packaging

(1) Model number

UNC-1634

(2) Description

Inner container is 14-inch I.D., 16-gage steel tube, 56 to 65-inches long, with a bolted flange top closure. Inner container is centered and supported in a 22.5-inch I.D. by 58 to 71-inches long steel drum of minimum 16-gage thickness. Void spaces within inner and outer containers filled with vermiculite. The inner container is filled with molded rubberized hair, high density polyethylene, wood, plastic or rubber to form four (4) centrally located 3-inch square cavities.

(3) Drawings

Container constructed in accordance with United Nuclear Corporation drawings D-20223, Rev. 2, D-20247, Rev. 2, and D-20250, Rev. 4.

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LICENSE NO.: SNM-33

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DOCKET NO.: 70-36

(b) Contents

- (1) Type and form  
of material

Uranium of any U-235 enrichment,  
as plate type fuel elements, having  
a maximum H/U-235 ratio less than 2  
within the active fuel volume.

- (2) Maximum quantity of  
material per package

Four (4) plate type fuel elements,  
Each element to contain no more  
than 0.61 kg U-235 with a gross  
active fuel cross sectional area  
not exceeding 7.1 square inches,  
and a minimum active fuel length  
of 23-inches.

(c) Fissile Class II and III

- (1) Minimum number of radiation  
units to be shown on label  
for Class II

5.7 radiation units

- (2) Maximum number of packages  
per shipment for Class III

14 packages

REFERENCES

Licensee's application dated November 19, 1966, for an amendment to Special Nuclear Material License Nos. SNM-33, SNM-368, and SNM-777 to deliver special nuclear material to a carrier for transport in the UNC-1634 package.

Supplement dated June 12, 1967.

FOR THE ATOMIC ENERGY COMMISSION

Date of Amendment \_\_\_\_\_

Donald A. Nussbaumer  
Division of Materials Licensing

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ATOMIC ENERGY COMMISSION

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LICENSE AMENDMENT  
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DELIVERY OF SPECIAL NUCLEAR MATERIAL  
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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-368</u> |
| 2. Address: P. O. Box 1883<br>365 Winchester Avenue<br>New Haven, Connecticut 06508 | Amendment No. <u>71-5</u>     |
|   | 4. Docket No. <u>70-371</u>   |

CONDITIONS

5. (a) Packaging

(1) Model number

UNC-1634

(2) Description

Inner container is 14-inch I.D., 16-gage steel tube, 56 to 65-inches long, with a bolted flange top closure. Inner container is centered and supported in a 22.5-inch I.D. by 58 to 71-inches long steel drum of minimum 16-gage thickness. Void spaces within inner and outer containers filled with vermiculite. The inner container is filled with molded rubberized hair, high density polyethylene, wood, plastic or rubber to form four (4) centrally located 3-inch square cavities.

(3) Drawings

Container constructed in accordance with United Nuclear Corporation drawings D-20223, Rev. 2, D-20247, Rev. 2, and D-20250, Rev. 4.

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LICENSE NO.: SNM-368

DOCKET NO.: 70-371

(b) Contents

- |  |   |
|--|---|
| (1) Type and form of material                | Uranium of any U-235 enrichment, as plate type fuel elements, having a maximum H/U-235 ratio less than 2 within the active fuel volume.   |
| (2) Maximum quantity of material per package | Four (4) plate type fuel elements, Each element to contain no more than 0.61 kg U-235 with a gross active fuel cross sectional area not exceeding 7.1 square inches, and a minimum active fuel length of 23-inches. |

(c) Fissile Class II and III

- |   |                     |
|---|---------------------|
| (1) Minimum number of radiation units to be shown on label for Class II | 5.7 radiation units |
| (2) Maximum number of packages per shipment for Class III               | 14 packages         |

REFERENCES

Licensee's application dated November 19, 1966, for an amendment to Special Nuclear Material License Nos. SNM-33, SNM-368, and SNM-777 to deliver special nuclear material to a carrier for transport in the UNC-1634 package.

Supplement dated June 12, 1967.

FOR THE ATOMIC ENERGY COMMISSION

Date of Amendment \_\_\_\_\_

\_\_\_\_\_  
Donald A. Nussbaumer

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ATOMIC ENERGY COMMISSION

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LICENSE AMENDMENT  
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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: P. O. Box 1883<br>365 Winchester Avenue<br>New Haven, Connecticut 06508 | Amendment No. <u>71-4</u>     |
|   | 4. Docket No. <u>70-820</u>   |

CONDITIONS

5. (a) Packaging

(1) Model number

UNC-1634

(2) Description

Inner container is 14-inch I.D., 16-gage steel tube, 56 to 65-inches long, with a bolted flange top closure. Inner container is centered and supported in a 22.5-inch I.D. by 58 to 71-inches long steel drum of minimum 16-gage thickness. Void spaces within inner and outer containers filled with vermiculite. The inner container is filled with molded rubberized hair, high density polyethylene, wood, plastic or rubber to form four (4) centrally located 3-inch square cavities.

(3) Drawings

Container constructed in accordance with United Nuclear Corporation drawings D-20223, Rev. 2, D-20247, Rev. 2, and D-20250, Rev. 4.

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LICENSE NO.: SNM-777

DOCKET NO.: 70-820

(b) Contents

- (1) Type and form  
of material

Uranium of any U-235 enrichment,  
as plate type fuel elements, having  
a maximum H/U-235 ratio less than 2  
within the active fuel volume.

- (2) Maximum quantity of  
material per package

Four (4) plate type fuel elements,  
Each element to contain no more  
than 0.61 kg U-235 with a gross  
active fuel cross sectional area  
not exceeding 7.1 square inches,  
and a minimum active fuel length  
of 23-inches.

(c) Fissile Class II and III

- (1) Minimum number of radiation  
units to be shown on label  
for Class II

5.7 radiation units

- (2) Maximum number of packages  
per shipment for Class III

14 packages

REFERENCES

Licensee's application dated November 19, 1966, for an amendment to Special Nuclear Material License Nos. SNM-33, SNM-368, and SNM-777 to deliver special nuclear material to a carrier for transport in the UNC-1634 package.

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