East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration

COMPETENT AUTHORITY CERTIFICATION FOR A TYPE FISSILE RADIOACTIVE MATERIALS PACKAGE DESIGN CERTIFICATE USA/0855/AF, REVISION 0

REVALIDATION OF JAPANESE COMPETENT AUTHORITY CERTIFICATE J/2007/AF

The Competent Authority of the United States certifies that the radioactive material package design described in this certificate satisfies the regulatory requirements for a Type AF package as prescribed in the regulations of the International Atomic Energy Agency[1] and the United States of America[2] The package design is approved for use within the United States for import and export shipments made in accordance with applicable international and domestic transport regulations.

1. Package Identification - NT-XII.

2. Package Description and Authorized Radioactive Contents - as described in Japanese Certificate of Competent Authority J/2007/AF (attached).

3. Criticality - The minimum criticality safety index is 1.28. The maximum number of packages per conveyance is determined in accordance with Table 11 of the IAEA regulations cited in this certificate.

4. General Conditions -

   a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.

   b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Engineering and Research, (PHH-23), Pipeline and Hazardous

[1] "Regulations for the Safe Transport of Radioactive Material, 2018 Edition, No. SSR-6, Rev. 1" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2] Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.

c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

d. Records of Management System activities required by Paragraph 306 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.

5. Special Conditions -

a. Transportation by air is not authorized

b. A repair and re-inspection of the lifting attachment shall include a visual inspection to ensure that there are no abnormalities or harmful, scratches, cracks, etc., that may affect the safety function of the lifting attachment.

6. Marking and Labeling - The package shall bear the marking USA/0855/AF in addition to other required markings and labeling.

7. Expiration Date - This certificate expires on February 28, 2031. Previous editions which have not reached their expiration date may continue to be used.

CERTIFICATE USA/0855/AF, REVISION 0

This certificate is issued in accordance with paragraph(s) 816 of the IAEA Regulations and Section 173.472 and 173.473 of Title 49 of the Code of Federal Regulations, in response to the February 10, 2025 petition by Edlow International Company, Washington, DC, and in consideration of other information on file in this Office.

Certified By:

for William Quade
Acting Associate Administrator for
Hazardous Materials Safety

March 11, 2026
(DATE)

Revision 0 - Issued to revalidate Foreign Japanese Certificate J/2007/AF.

IDENTIFICATION MARK
J/2007/AF

COMPETENT AUTHORITY
OF
JAPAN

CERTIFICATE FOR APPROVAL OF PACKAGE DESIGN FOR THE TRANSPORT OF RADIOACTIVE MATERIALS

ISSUED BY

NUCLEAR REGULATION AUTHORITY
1-9-9, ROPPONGI MINATO-KU
TOKYO, JAPAN

CERTIFICATE FOR APPROVAL OF PACKAGE DESIGN
FOR THE TRANSPORT OF RADIOACTIVE MATERIALS

This is to certify, in response to the application by Nuclear Fuel Industries, Ltd., that the package design described herein complies with the design requirements for a package containing 9×9B Type fuel assembly, specified in the 2018 Edition of the Regulations for the Safe Transport of Radioactive Material (International Atomic Energy Agency, Safety Standards Series No.SSR-6) and the Japanese rules based on the Act on Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.
This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.

COMPETENT AUTHORITY
IDENTIFICATION MARK: J/2007/AF

May / 13 / 2024
Date

K. Hasegawa
Hasegawa Kiyomitsu

Director, Division of Licensing for
Nuclear Fuel Facilities

Secretariat of Nuclear Regulation Authority
Competent Authority of JAPAN
for Package Design Approval

1. The Competent Authority Identification Mark : J/2007/AF

2. Name of Package : NT-XII

3. Type of Package : Type A, Fissile package

4. Specification of Package

(1) Materials of Packaging : See the attached Table-1

(2) Total Weight of Packaging : 940kg or less

(3) Outer Dimensions of Packaging

(i)Length : Approximately 5270 mm

(ii)Width : Approximately 730 mm

(iii)Height : Approximately 800 mm

(4) Total Weight of Package : 1,500kg or less

(5) Illustration of Package : See the attached Figure-1 (Bird's-eye view)

5. Specification of Radioactive Contents : See the attached Table-2

6. Description of Containment System

There are no component parts as the containment device in this packaging, and the containment boundary consist of cladding tube of fuel rod.

7. For package containing Fissile Materials

(1) Restrictions on Package

(i)Restriction Number "N" : 39

(ii)Array of Package : No restriction

(iii)Criticality Safety Index (CSI) : 1.28

(2) Description of Confinement System

To prevent criticality of stored items, the robust structure is designed to limit local damage and keep the stored items in place, even under accident conditions.

(3) Assumptions of Leakage of Water into Package

The criticality analysis of this package is carried out on the assumption that all of this package includes the fuel receptacle is immersed in water under normal conditions and under accident conditions.

(4) Special Features in Criticality Assessment

Not applicable.

8. For Type B(M) Packages, a statement regarding prescriptions of Type B(U) Package that do not apply to this Package.

Not applicable.

9. Assumed Ambient Conditions

(i)Ambient Temperature Range :−40℃～38℃

(ii)Insolation Data : Table12 of IAEA Regulation

10. Handling, Inspection and Maintenance

Execute handling, the periodic inspection and maintenance of the packaging by the method indicated in the safety analysis report of this package.

11. Issue Date and Expiry Date

(i)Issue Date : March 7, 2023

(ii)Expiry Date : March 6, 2103

However, if this certificate no longer meets the technical standards (limited to those related to the design of package) due to a revision of the regulations*1,2, this certificate will be expired.

*1 The NRA Ordinance on off-Site Transportation of Nuclear Fuel Materials, etc.
Issuance: Order of the Prime Minister's Office No. 57 of December 28, 1978

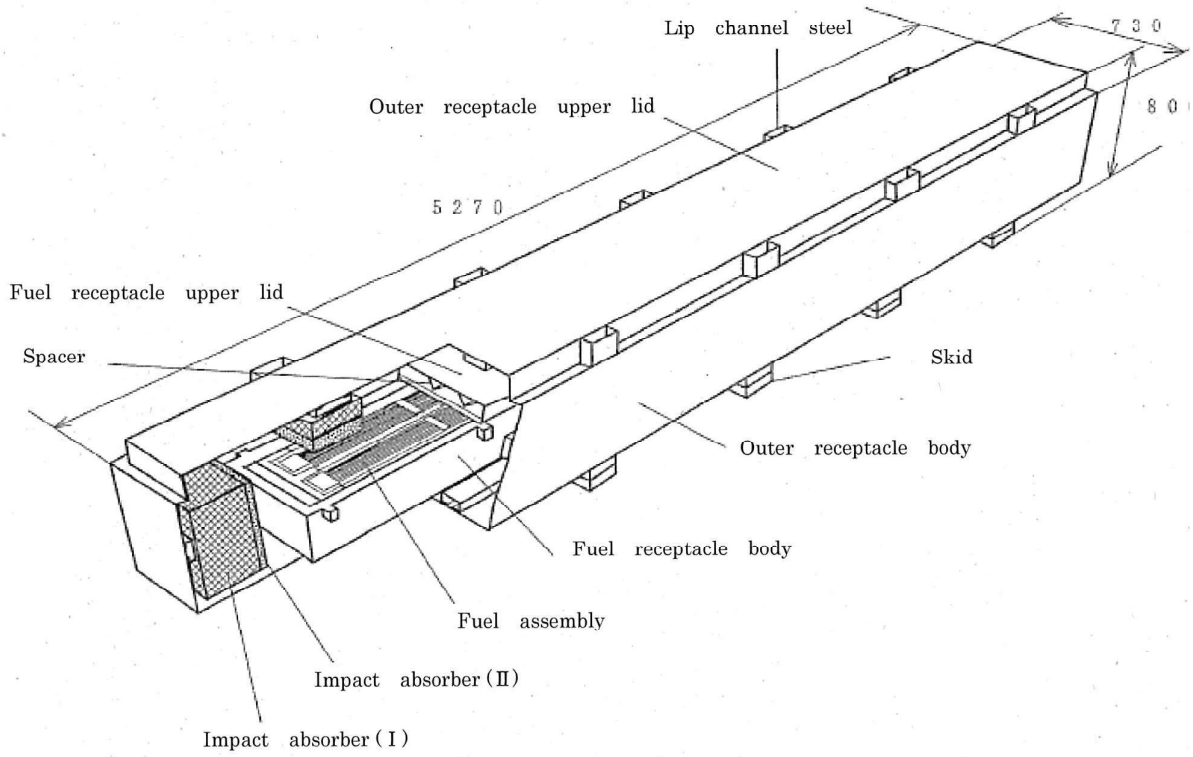
*2 The Notification on Technical Details for Off-Site Transportation of Nuclear Fuel Materials, etc.
Issuance: The Public Notice of the Science and Technology Agency No. 5, an extra of November 28, 1990

Table 1. Material of Packaging

Component	Material
Outer receptacle	Stainless Steel
Fuel receptacle	Stainless Steel
Impact absorber	Aluminum honeycomb
Packing, Protective plate	Neoprene rubber
Skid	Timber
Bolt, Nut	Stainless Steel and alloy
Heat insulating material	Ceramic Fiber

Table 2. Description of Nuclear Fuel Materials and so on

Contents	9×9B Type fuel assembly	
Category	Flesh fuel assembly (Uranium dioxide)	
Physical State	Solid (Uranium dioxide pellet and Uranium dioxide pellet including gadolinia)	
Weight	350kg-U or less (less than two flesh fuel assemblies)	
Activity	Total	57GBq or less
	^{232}U	2.02×10^{-1} GBq or less
	^{234}U	4.06×10 GBq or less
	^{235}U	2.81 GBq or less
	^{236}U	2.11×10^{-1} GBq or less
	^{238}U	1.23×10 GBq or less
	^{99}Tc	2.20×10^{-3} GBq or less
Enrichment	5.0wt% or less	
Burn up Rate	Not Applicable	
Total Heat Generation Rate		
Cooling Time		
Impurity Specification of Enriched Uranium	^{232}U	$\leqq 0.0001$ μg/gU
	^{234}U	$\leqq 10\times10^{3}$ μg/g^{235}U
	^{236}U	$\leqq 250$ μg/gU
	^{99}Tc	$\leqq 0.01$ μg/gU
	If the ^{236}U measurement result is less than 125 μg/gU, measurements of ^{232}U and ^{99}Tc are not required.	



(Unit: mm)

Figure 1. General View of Type NT-XII Package

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

U.S. Department of
Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

CERTIFICATE NUMBER: USA/0855/AF-96

ORIGINAL REGISTRANT(S):

Edlow International Company
1666 Connecticut Ave, N.W.
Suite 201
Washington, DC, 20009
USA