



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

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

**COMPETENT AUTHORITY CERTIFICATION FOR A
TYPE FISSILE
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/0839/AF, REVISION 1**

**REVALIDATION OF JAPANESE COMPETENT AUTHORITY
CERTIFICATE J/2037/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 Agency¹ and the United States of America². 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 - MX-6P.
2. Package Description and Authorized Radioactive Contents - as described in Japanese Certificate of Competent Authority J/2037/AF, dated July 15, 2025 (attached).
3. Criticality - The minimum criticality safety index is 0. There is no restriction on the number of packages per conveyance.
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 Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.

¹ "Regulations for the Safe Transport of Radioactive Material, 2018 Edition, No. SSR-6, Revision 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.

CERTIFICATE USA/0839/AF, REVISION 1

- 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 regulations¹ 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. Marking and Labeling - The package shall bear the marking USA/0839/AF in addition to other required markings and labeling.
6. Expiration Date - This certificate expires on March 10, 2028. Previous editions which have not reached their expiration date may continue to be used.

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 August 5, 2025 petition by TN Americas LLC, Columbia, MD, and in consideration of other information on file in this Office.

Certified By:



William Quade
Acting Associate Administrator for
Hazardous Materials Safety

September 23,
2025

(DATE)

Revision 1 - Issued to revalidate Japanese Certificate of Approval
No. J/2037/AF dated July 15, 2025.



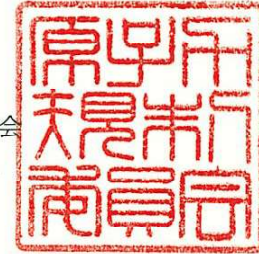
原規規発第 2507151 号

令和 7 年 7 月 15 日

三菱原子燃料株式会社

代表取締役社長 大和矢 秀成 殿

原子力規制委員会

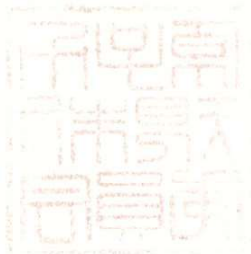


核燃料輸送物設計承認英文証明書について

核燃料物質等の工場又は事業所の外における運搬に係る核燃料輸送物設計承認及び容器承認等に関する申請手続ガイド（令和 2 年 2 月 26 日付け原規規発第 2002264 号）2.4.に基づき、令和 7 年 7 月 8 日付け三原燃第 25-0179 号をもって申請のあった標記の件について、添付のとおり証明します。

IDENTIFICATION MARK

J/2037/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 Mitsubishi Nuclear Fuel Co., Ltd., that the package design described herein complies with the design requirements for a package containing Fresh Fuel Assembly for PWR, 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/2037/AF

July / 15 / 2025
Date

N. Kumagai
Kumagai Naoki

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/2037/AF
2. Name of Package : MX-6P
3. Type of Package : Type A Package containing Fissile Material
4. Specification of Package
 - (1) Materials of Packaging
 - (i) Body : Stainless steel, Copper, Alloy steel, Resin
 - (ii) Lid parts : Titanium alloy, Alloy steel, Resin
 - (iii) Basket : Aluminum alloy, Borated stainless steel, Stainless steel
 - (iv) Shock absorbing cover : Wood, Stainless steel, Alloy steel
 - (2) Total Weight of Packaging : 14.7 tons or less
 - (3) Outer Dimensions of Packaging
 - (i) Outer diameter : Approximately 2.1 m
 - (ii) Length : Approximately 6.0 m
(including top and rear shock absorbing covers)
 - (4) Total Weight of Package : 19.5 tons or less
 - (5) Illustration of Package : See the attached Figure
5. Specification of Radioactive Contents : See the attached Table-1
6. Description of Containment System

The containment system of the package consists of the body and the lid. EPDM O-rings, referred to as the lid gaskets and the quick connection cover gaskets, shall be installed on the contact surface of the lid against the body and on the contact surface of the quick connection cover against the lid.
7. For Package containing Fissile Materials,
 - (1) Restrictions on Package
 - (i) Restriction Number "N" : No restriction
 - (ii) Array of Package : No restriction
 - (iii) Criticality Safety Index (CSI) : 0
 - (2) Description of Confinement System

The confinement system of the package consists of the fuel rods, the fuel assemblies, the basket and the inner shell of the body.
 - (3) Assumptions of Leakage of Water into Package

In the criticality safety analysis for the package, water is assumed to leak into the void spaces of the packages which are arrayed infinitely.

(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 : $-40^{\circ}\text{C} \sim 38^{\circ}\text{C}$
- (ii) Insolation Data : Table 12 of IAEA Regulation

10. Handling, Inspection and Maintenance

Packages must be handled, inspected and maintained in the manner described in the safety analysis report for the package.

11. Issue Date and Expiry Date

- (i) Issue Date : June 30, 2025
- (ii) Expiry Date : June 29, 2075

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.
(Ministerial ordinance issued by the Prime Minister's Office No. 57 of 1978)

^{*2} The Notification on Technical Details for Off-Site Transportation of Nuclear Fuel Materials, etc. (Notice issued by Science and Technology Agency No. 5 of 1990)

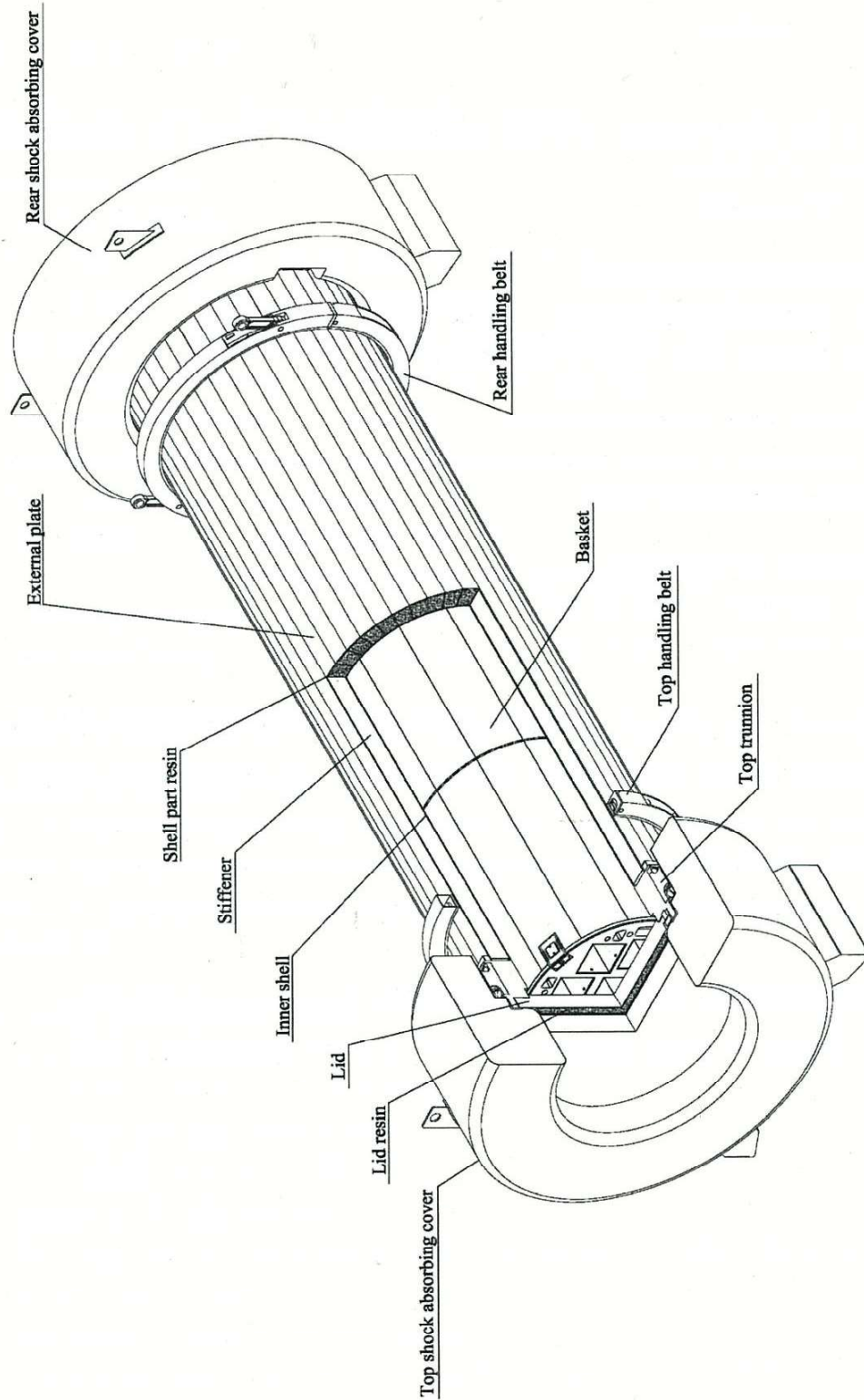


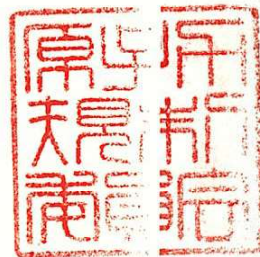
Figure MX-6P Packaging

Table-1 Specifications of Radioactive Content

Type of Fuel Assembly			14 x 14 (12 Feet)		
Description			Fresh Fuel Assembly for PWR ¹⁾		
Physical State			Solid (UO ₂ Pellet or Gadolinia - UO ₂ Pellet)		
Per Packaging	Weight of Content (kg)		4800 or less		
	Number of Assemblies		8 or less		
	Weight of Fuel Assemblies (kg)		4720 or less		
	Activity	Total Activity (GBq)		7.05 x 10 ² or less (Total Major Nuclides: 5.90 x 10 ² or less)	
		Major Nuclides ²⁾ (GBq)	²³² U	3.25 x 10 ⁻¹	
			²³⁴ U	5.22 x 10 ²	
			²³⁵ U	1.64 x 10 ¹	
			²³⁶ U	2.46 x 10 ⁰	
			²³⁸ U	4.85 x 10 ¹	
⁹⁹ Tc	2.58 x 10 ⁻²				
Heat Generation Rate		N/A (Fresh Fuel Assembly)			
Enrichment (wt%)			5.0 or less		
Per Fuel Assembly	Weight	Fuel Assembly (kg)	590 or less		
		Uranium Oxide (kg)	470 or less		
		Uranium (kg)	410 or less		
	Burn up Rate		N/A (Fresh Fuel Assembly)		
	Cooling Time		N/A (Fresh Fuel Assembly)		
Impurity Specification of Enriched Uranium		²³² U	≤ 0.0001 µg/gU (Not applicable in case of ²³⁶ U < 125µg/gU)		
		²³⁴ U	≤ 1.10 x 10 ⁴ µg/g ²³⁵ U		
		²³⁶ U	≤ 250 µg/gU		
		⁹⁹ Tc	≤ 0.01 µg/gU (Not applicable in case of ²³⁶ U < 125µg/gU)		

Note 1) Fresh fuel assemblies stored in spent fuel pool are included.

Note 2) For enrichment of 5.0 wt%





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CERTIFICATE NUMBER: USA/0839/AF-96

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