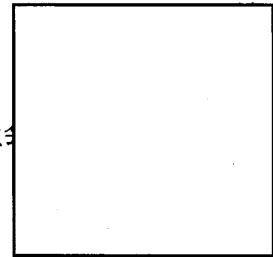


原規規発第 2102264 号

令和 3 年 2 月 26 日

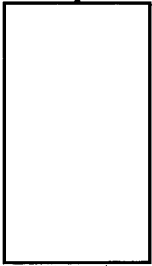
国立大学法人東京大学
学長 五神 真 殿

原子力規制委員



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 3 年 2 月 5 日付け東大安環第 165 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/2031/B(M)F-96

**COMPETENT AUTHORITY
OF
JAPAN**

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

ISSUED BY

**NUCLEAR REGULATION AUTHORITY
1-9-9, ROPPOGI 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 The University of Tokyo, that the package design described herein complies with the design requirements for a package containing , specified in the 2012 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

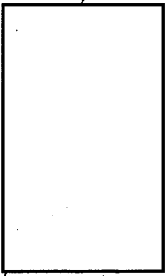
IDENTIFICATION MARK: J/2031/B(M)F-96

Feb. 26. 2021
Date

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/2031/B(M)F-96
2. Name of Package :
3. Type of Package : Type B(M) containing Fissile Material
4. Specification of Package
 - (1) Materials of Packaging
 - (i) Drum :
 - (ii) Primary containment vessel (PCV) :
 - (iii) Secondary containment vessel (SCV) :
 - (iv) Shielding body :
 - (v) Insulation :
 - (2) Total Weight of Packaging : kg or less
 - (3) Outer Dimensions of Packaging
 - (i) Outer Diameter : Approximately cm
 - (ii) Height : Approximately cm
 - (4) Total Weight of Package: kg or less
 - (5) Illustration of Package: See the attached Figure (3-Dimensional Section View)
5. Specification of Radioactive Contents: See the attached Table
6. Description of Containment System

Containment system for PCV and SCV consists of containment vessel body and containment vessel lid.

Fluorocarbon O-ring is used for the contact surface of containment vessel lid and containment vessel body. The leak-test port of containment vessel lid is closed by the leak-test port plug

7. For Package containing Fissile Materials,

(1) Restrictions on Package

- (i) Restriction Number "N" : 25
- (ii) Array of Package : No restriction
- (iii) Criticality Safety Index (CSI) : 2.0

(2) Description of Confinement System

Confinement system consists of a mass of plutonium metal, PCV, SCV, Shielding body, Insulation and Drum of the packaging.

(3) Assumptions of Leakage of Water into Package

In Criticality Safety Analysis, it is assumed that no water leak into Primary Containment Vessel due to the double containment system composed of Primary and Secondary Containment Vessels. Quality control regarding the watertightness of containment should be performed.

(4) Special Features in Criticality Assessment

Quality control of PCV should be performed so as to prevent any leakage of water thereinto.

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

Maximum internal pressure up to kPaG is not considered.

9. Assumed Ambient Conditions


- (i) Ambient Temperature Range : $-40^{\circ}\text{C} \sim 38^{\circ}\text{C}$
- (ii) Insulation Data : Table 12 of IAEA Regulation

10. Handling, Inspection and Maintenance

(1) Handling Instruction

- (i) Package should be handled carefully in accordance with the procedures established properly taking all possible safety measures.
- (ii) Package should be handled using appropriate lifting accessory.
- (iii) Basically, packaging should not be stored outdoors.

(2) Inspection and Maintenance of Packaging



The following inspections should be performed not less than once a year (once for every times in a case where the packaging is used not less than times a year) and defect of packaging should be repaired, if any, in order to maintain the integrity of packaging.

- (i) Visual Appearance Inspection
- (ii) Subcriticality Inspection

(3) Action prior to Shipment.

The following inspections should be performed prior to shipment.

- (i) Visual Appearance Inspection
- (ii) Leakage Rate Measurement Inspection
- (iii) Radiation Dose Rate Inspection
- (iv) Subcriticality Inspection
- (v) Weight Measurement Inspection
- (vi) Contents Specification Check Inspection
- (vii) Surface Contamination Measurement Inspection

(4) Precautions for Loading of Package for Shipment

Package should be securely loaded to the Cargo Restraint Transporter (CRT). CRT should be tied-down to the container so as not move, roll down or fall down from the loading position during transport.

11. Issue Date and Expiry Date

- (1) Issue Date : April 8, 2020
- (2) Expiry Date : April 7, 2025

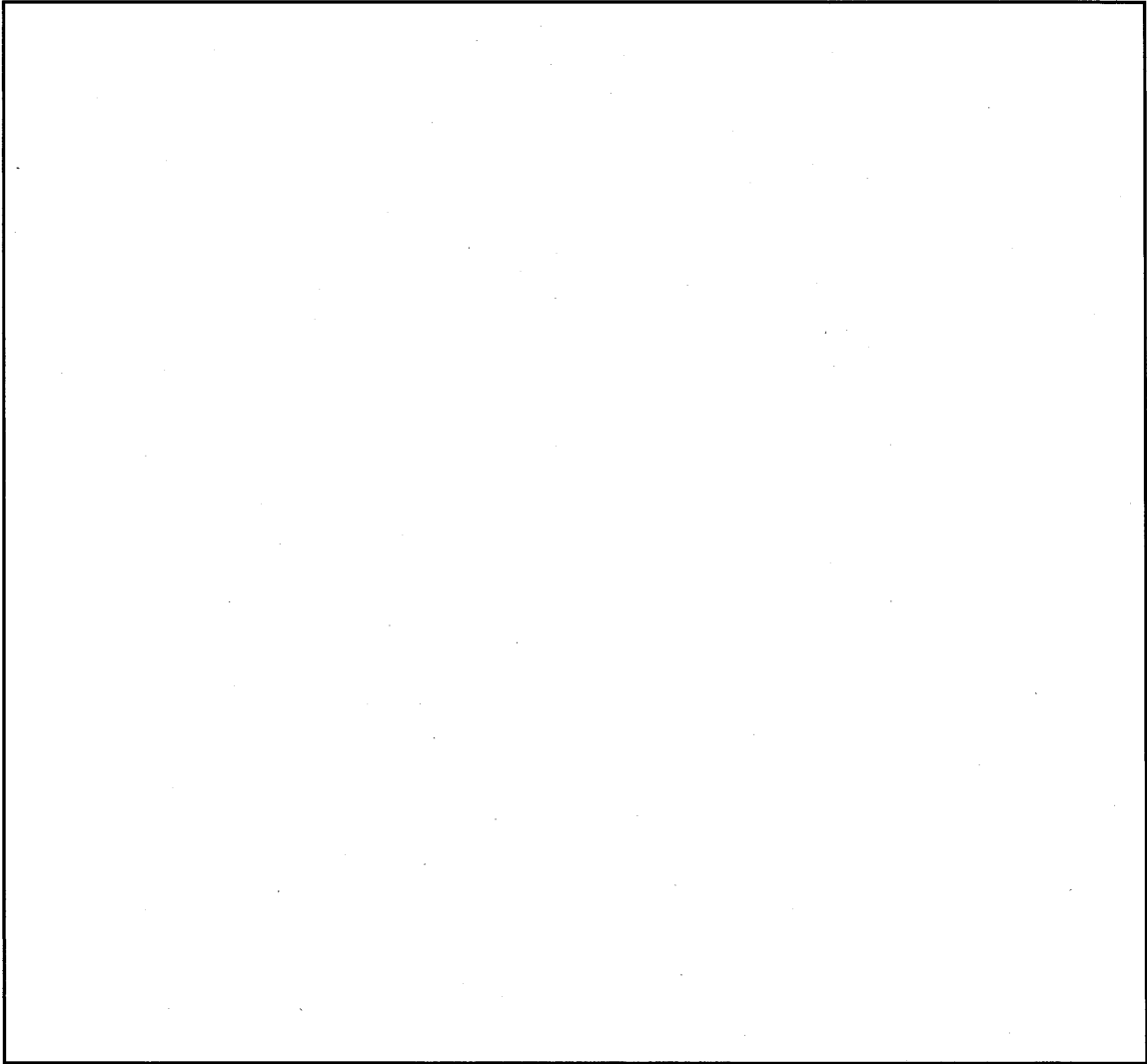
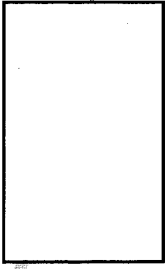



Figure  packaging 3-Dimensional Section View

Table Specification of Content

Material of Nuclear Fuel		
Physical State		
Form		
Total Weight of Content(kg)		
Total Weight of Nuclear material(g)		
Weight of Plutonium Radioisotopes (g)	²³⁸ Pu	
	²³⁹ Pu	
	²⁴⁰ Pu*2	
	²⁴¹ Pu	
	²⁴² Pu	
Total Weight of ²⁴¹ Am and ²⁴¹ Pu (g)		
Weight of Uranium Radioisotopes (g)	²³⁵ U	
Concentration of fissile Plutonium isotope (wt %)		
Uranium Enrichment (wt %)		
Activity(Bq)	Total	
	²³⁸ Pu	
	²³⁹ Pu	
	²⁴⁰ Pu	
	²⁴¹ Pu	
	²⁴² Pu	
	²⁴¹ Am+ ²⁴¹ Pu	
	²³⁵ U	
Heat Generation Rate (W)		
Actinide, Fission Products, Decay Products and Activation Products (ppm)		
Burn up		
Cooling Time		

- *1: Block is cut out from disc-shaped fuel for loading
- *2: The weight of ²⁴⁰Pu must be more than that of ²⁴¹Pu.
- *3: Total activity is calculated by g of nuclear material composition with maximum activity.
- *4: Used in extremely low power reactor.
- *5: Equivalent to unirradiated material