原規規発第2101215号
令和3年1月21日

原子燃料工業株式会社
取締役社長　北川　健一　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2年11月6日付け東外輸第20025号（令和2年12月2日付け東外輸第20026号及び令和3年1月11日付け東外輸第21001号をもって一部補正）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/37/AF-96 (Rev. 2)

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 fissile uranium dioxide fuel assemblies and fuel rod, 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/37/AF-96 (Rev. 2)

Jan. 21, 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/37/AF-96(Rev.2)

2. Name of Package : NT－Ⅳ

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 : [redacted]
   (3) Outer Dimension of Packaging
      (ⅰ) Length : [redacted]
      (ⅱ) Width :
      (ⅲ) Height :
   (4) Total Weight of Package :
   (5) Illustration of Package : See the attached Figure-1

5. Specifications of Radioactive Contents : See the attached Table 2-1 and 2-2

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" : No restriction
      (ⅱ) Array of Package : No restriction
      (ⅲ) Criticality Safety Index (CSI) : 0

   (2) Description of Confinement System
   Confinement system consists of a mass of uranium dioxide and cladding tube and fuel plugs.

   (3) Assumptions of Leakage of Water into Package
   No water will leak into or out of fuel rod of fuel assembly during routine transport and accident condition.

   (4) Special Features in Criticality Assessment
   The subcriticality calculation is evaluated upon the assumption that the container is in immersion condition by water under the normal conditions and accident conditions in transport except inside of the fuel rods.

8. For Type B(M) Packages, a statement regarding prescriptions of Type B(U) Package that do not apply to this Package
   This is not applicable to this NT-IV package.

9. Assumed Ambient Conditions
   (i) Ambient Temperature Range : [redacted]
   (ii) Insolation Data : Table 12 of IAEA Regulation (No.SSR-6)

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

11. Issue Date and Expiry date
    (i) Issue date : July 6, 2020
    (ii) Expiry date : July 5, 2025

Table 1 Material of Packaging

Component	Material
Outer Container	Carbon Steel ( )
Inner Container	Carbon Steel ( )
Buffer agent	Honeycomb Paper, Polyethylene Foaming Object
Packing and Protective plate	Neoprene Rubber
Skid	Wood
Bolt and Nut	Stainless Steel ( ), Steel Alloy( )

Table 2-1 Descriptions of Nuclear Fuel Materials and so on

Fuel Type		Fuel Assembly			
		8×8	New Type 8×8	High burnup 8×8	9×9 (Type B)
(Per Packaging)					
Description		Fuel Assembly (Uranium Oxide)			
Physical State		Solid (UO_2 Pellet or Gadolinia-UO_2 Pellet)			
Number of Fuel Assembly		2 or less			
Weight of U		kg-U or less			
Total Activity		Bq or less			
Initial Enrichment		5% or less			
Burnup Rate		Not applicable			
Total Heat Generation Rate					
Cooling Time					
(Per Fuel)					
Weight	Weight of Fuel Assembly	kg or less	kg or less	kg or less	kg or less
	Weight of U	kg or less	kg or less	kg or less	kg or less
Specification of Impurities in Enriched Uranium		$^{232}U \leqq$ μg/gU $^{234}U \leqq$ μg/g^{235}U $^{236}U \leqq$ μg/gU $^{99}Tc \leqq$ μg/gU If the ^{236}U measurement result is less than 125μg/gU, then measurement of ^{232}U and ^{99}Tc is not required.			

Table 2-2 Descriptions of Nuclear Fuel Materials and so on

Fuel Type		Fuel Rod Package	
		[redacted]	[redacted]
(Per Packaging)			
Description		Fuel Rod Package (Uranium Oxide)	
Physical State		Solid (UO_2 Pellet or Gadolinia-UO_2 Pellet)	
Number of Fuel Rod Package		2 or less	
Weight of U		[redacted] kg-U or less	
Total Activity		[redacted] Bq or less	
Initial Enrichment		5% or less	
Burnup Rate		Not applicable	
Total Heat Generation Rate			
Cooling Time			
(Per Fuel Rod Package)			
Number of Fuel Rod		[redacted]*	[redacted]*
Weight	Weight of Fuel Rod	[redacted] kg or less	[redacted] kg or less
	Weight of U	[redacted] kg or less	[redacted] kg or less
Specification of Impurities in Enriched Uranium		$^{232}U \leqq$ [redacted] μg/gU $^{234}U \leqq$ [redacted] μg/g^{235}U $^{236}U \leqq$ [redacted] μg/gU $^{99}Tc \leqq$ [redacted] μg/gU If the ^{236}U measurement result is less than 125μg/gU, then measurement of ^{232}U and ^{99}Tc is not required.	

*: If the number of fuel rods is less than the number of Fuel Rod per Package, [redacted]

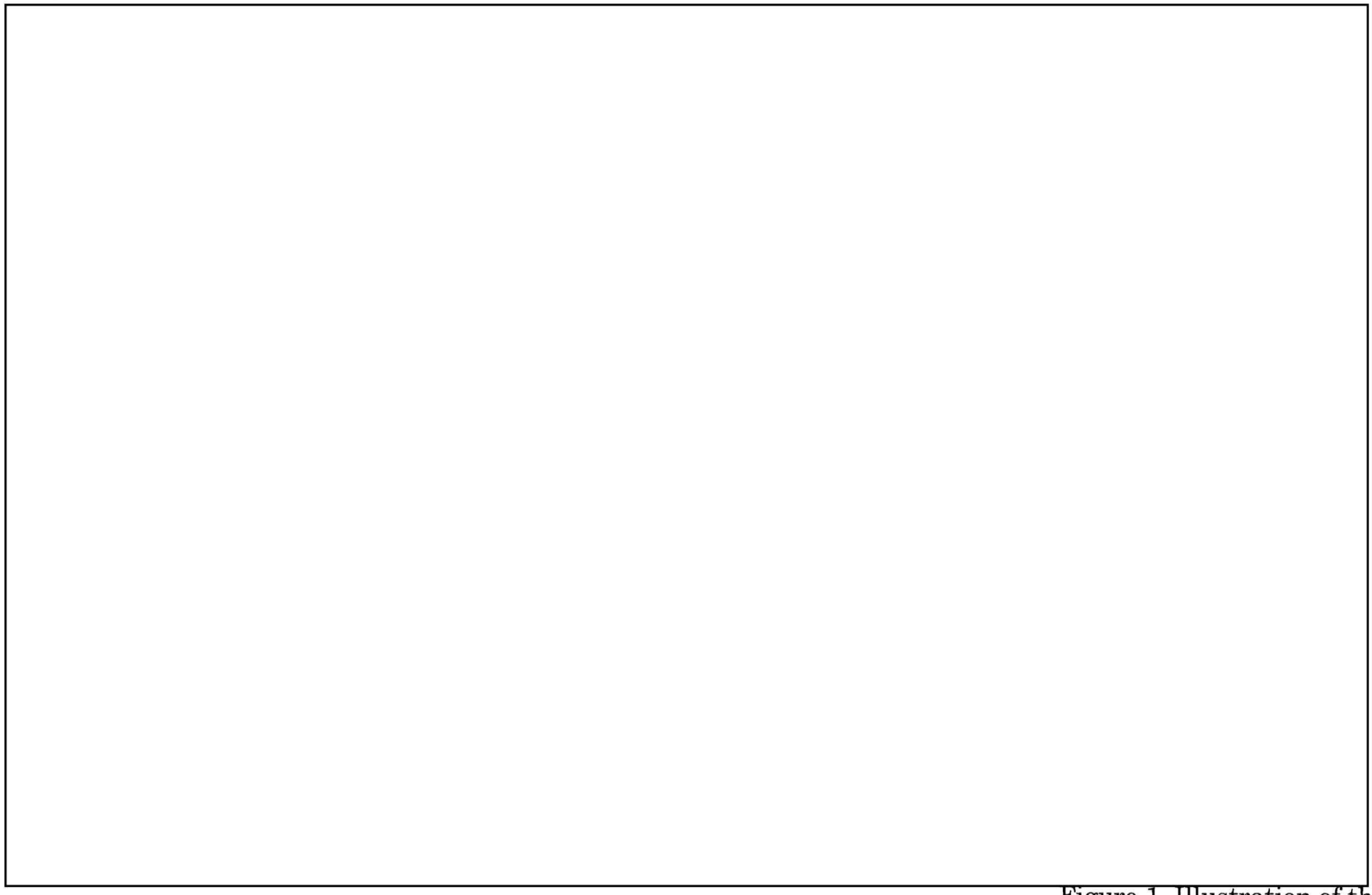

Figure 1. Illustration of the Package