U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

**COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE FISSILE
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/0542/AF-96, REVISION 2**

**REVALIDATION OF JAPANESE COMPETENT AUTHORITY
CERTIFICATE J/134/AF-96**

This certifies that the radioactive material package design described is hereby approved for use within the United States for import and export shipments only. Shipments must be made in accordance with the applicable regulations of the International Atomic Energy Agency[1] and the United States of America[2].

1. Package Identification - NFI-V.

2. Package Description and Authorized Radioactive Contents - as described in Japan Certificate of Competent Authority J/134/AF-96 (attached)

3. Criticality - The minimum criticality safety index is 0.0. The maximum number of packages per conveyance is determined in accordance with Table X 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 Hazardous Materials Technology, (PHH-23), Pipeline and Hazardous 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.

---

[1] "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency(IAEA), Vienna, Austria.

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

d. This certificate provides no relief from the limitations for transportation of plutonium by air in the United States as cited in the regulations of the U.S. Nuclear Regulatory Commission 10 CFR 71.88.

e. Records of Quality Assurance activities required by Paragraph 310 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 and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

5. Special Conditions -

a. Package design and authorized contents are restricted to those detailed in Japanese Certificate of Approval No. J/134/AF-96 which was signed on February 14, 2006 (attached).

b. Each fuel assembly is enclosed within a polyethylene sheath which may not extend beyond the ends of the fuel assembly. The ends of the sheath may not be folded or taped in any manner that would prevent the flow of liquids into or out of the sheathed fuel assembly.

c. The package is not authorized for air transport.

d. For shipments entering, exiting or transiting the United States, all international approvals and revalidations, including Approval of Packaging and Confirmation of Packaging certificates issued by the government of Japan, shall be issued prior to commencement of transport.

6. Marking and Labeling - The package shall bear the marking USA/0542/AF-96 in addition to other required markings and labeling.

7. Expiration Date - This certificate expires on January 16, 2009.

CERTIFICATE USA/0542/AF-96, REVISION 2

This certificate is issued in accordance with paragraph 814 of the IAEA Regulations and Section 173.472 and 173.473 of Title 49 of the Code of Federal Regulations, in response to the May 15, 2006 petition by Areva, Lynchburg, VA and in consideration of other information on file in this Office.

Certified By:

Sep 29 2006

Robert A. McGuire
Associate Administrator for Hazardous Materials Safety

(DATE)

Revision 2 - Issued to endorse Japanese Certificate of Approval No. J/134/AF-96 dated February 14, 2006..

IDENTIFICATION MARK
J/134/AF-96

COMPETENT AUTHORITY
OF
JAPAN

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

ISSUED BY

MINISTRY OF ECONOMY, TRADE AND INDUSTRY
1-3-1, KASUMIGASEKI, CHIYODA-KU
TOKYO, JAPAN

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

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, specified in the 1996 Edition (As Amended 2003) of the Regulations for the Safe Transport of Radioactive Material (International Atomic Energy Agency, Safety Standards Series No.TS-R-1) and the Japanese rules based on the Law for Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.

This certificate doesn't 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/134/AF-96

Feb. 14 2006
Date

Masanori Amano
Director
Nuclear Fuel Transport and Storage
Regulation Division
Nuclear and Industrial Safety Agency
Ministry of Economy, Trade and Industry
Competent Authority of Japan
for Package Design Approval

1. DESIGN APPROVAL NUMBER : J/134/AF-96

2. NAME OF PACKAGE : NFI-V

3. CATEGORY OF THE PACKAGE : Type A Fissile package

4. SPECIFICATION OF PACKAGING
   (1) Nuclear Fuel Package Over View : See the attached Figure 1
   (2) Total Weight of Nuclear Fuel Package : 3800 kg or less
   (3) Outer Dimension of Packaging
      (i) Length : Approximately 5180 mm
      (ii) Width : Approximately 1120 mm
      (iii) Height : Approximately 1140 mm
   (4) Material of Packaging : See the attached Table 1
   (5) Description of Nuclear Fuel Materials and so on
      : See the attached Table 2

5. RESTRICTIONS ON TRANSPORT
   (i) Restriction Number : Infinite
   (ii) Array : No Restriction
   (iii) Criticality Safety Index : 0

6. SPECIAL FEATURES IN THE 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.

7. DESCRIPTION OF NON APPLICABLE DESIGN STANDARD OF TYPE BU FISSILE PACKAGE ABOUT TYPE BM FISSILE PACKAGE

Not applicable

8. INSTRUCTIONS ON USE AND MAINTENANCE OF PACKAGING

Execute a maintenance and the periodic inspection of the packaging used for the transportation of this package by the method indicated in safety analysis report of this package. And execute handling of the nuclear fuel package by the method indicated in safety analysis report of this package.

9. THE ISSUE DATE AND EXPIRY DATE OF CERTIFICATE

(1) Issue date	:	January 17, 2006
(2) Expiry date	:	January 16, 2009

Table 1. Material of Packaging

Construction	Material
Stacking Bracket	: Stainless Steel (SUS 304)
Upper Case, Lower Case	: Stainless Steel (SUS 304)
Heat Insulating Material	: Ceramic Fiber
Arched Cramp	: Stainless Steel (SUS 304)
Shock Mount	: Synthetic Rubber
U Support	: Stainless Steel (SUS 304)
Upper Gate	: Stainless Steel (SUS 304)
Gasket	: Synthetic Rubber
Skid	: Synthetic Rubber
Bolt and Nut	: Stainless Steel (SUS304, SUS310S) and Chromium Molybdenum Steel

Table 2. Description of Nuclear Fuel Materials and so on

Fuel Type		Fuel Assembly				Fuel rod Bundle (10×10)
		14×14	15×15	17×17		
				Type 64	Type 57	
(Per Packaging)						
Description		Fuel Assembly for PWR or Fuel Rod Bundle				
Physical State		Solid (UO_2 Pellet or Gadolinia - UO_2 Pellet)				
Weight	Fuels	2 or less				2 or less
	Weight of Fuels	1390kg or less				
	Weight of UO2	1090kg or less				
Total Activity		154GBq or less				
Initial Enrichment		5% or less				
Burn up Rate		0				
Total Heat Generation Rate		0				
Cooling Time		0				
(Per Fuel)						
Weight	Weight of Fuel	About 595 kg	About 680 kg	About 670 kg	About 695 kg	About 400 kg
	Weight of UO_2	About 465 kg	About 530 kg	About 515 kg	About 545 kg	About 260 kg
Specification of Impurities in Enriched Uranium		^{232}U□$2\times10^{-9}g/g^{235}U$ ^{234}U□$1\times10^{-2}g/g^{235}U$ ^{236}U□$5\times10^{-3}g/g^{235}U$ ^{99}Tc□$2\times10^{-7}g/g^{235}U$				

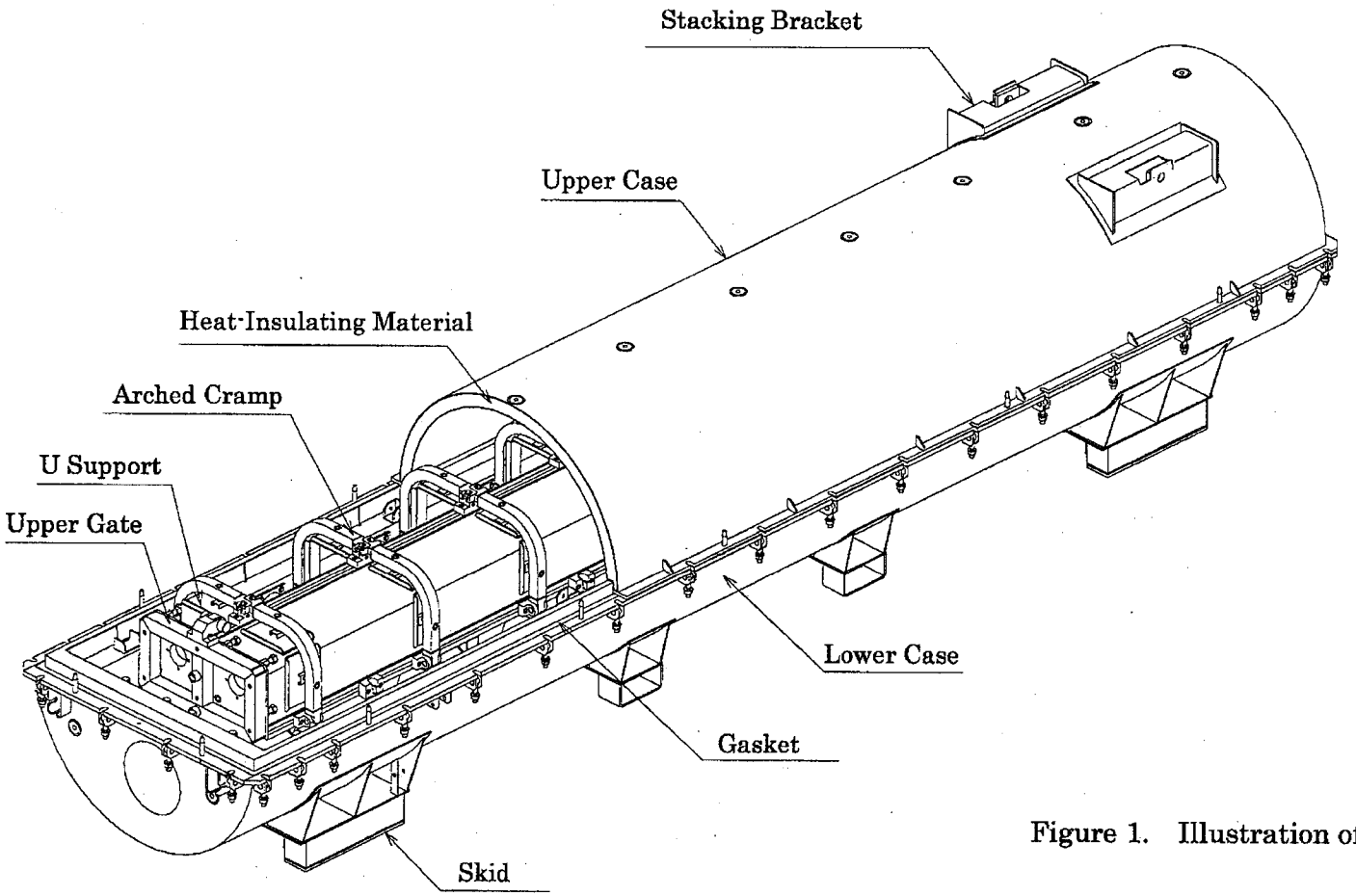

Figure 1. Illustration of the Package