



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 B(U)  
RADIOACTIVE MATERIALS PACKAGE DESIGN  
CERTIFICATE USA/9370/B(U)-96, REVISION 0**

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 B(U) package as prescribed in the regulations of the International Atomic Energy Agency<sup>1</sup> and the United States of America<sup>2</sup>.

1. Package Identification - 380-B.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9370, Revision 0 (attached).
3. 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.
  - 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.

---

<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

<sup>2</sup> Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

**CERTIFICATE USA/9370/B(U)-96, REVISION 0**

- d. Records of Management System activities required by Paragraph 306 of the IAEA regulations<sup>1</sup> 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.
4. Marking and Labeling - The package shall bear the marking USA/9370/B(U)-96 in addition to other required markings and labeling.
5. Expiration Date - This certificate expires on November 30, 2022.

This certificate is issued in accordance with paragraph(s) 810 of the IAEA Regulations and Section 173.471 of Title 49 of the Code of Federal Regulations, in response to the January 18, 2018 petition by National Nuclear Security Administration, Department of Energy, Albuquerque, NM, and in consideration of other information on file in this Office.

Certified By:



William Schoonover  
Associate Administrator for Hazardous  
Materials Safety

February 02, 2018  
(DATE)

Revision 0 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance 9370, Revision 0.

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9370	0	71-9370	USA/9370/B(U)-96	1	OF 4

2. PREAMBLE

- a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

- |  |  |
|--|--|
| a. ISSUED TO ( <i>Name and Address</i> )<br>National Nuclear Security Administration<br>P.O. Box 5400<br>Albuquerque, NM 87185 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION<br>National Nuclear Security Administration application<br>dated June 9, 2017, as supplemented. |
|--|--|

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

- (1) Model No.: 380-B
- (2) Description

The 380-B package is 118.2 inches (in.) tall, 100 inches in diameter (over the upper and lower impact limiter), and weighs a maximum of 67,000 pounds (lbs.). The empty packaging weight is 55,000 lbs. Unless otherwise noted, the Model No. 380-B package components are constructed of American Standards for Testing Materials (ASTM) A240 Type 304 stainless steel. The package is primarily of welded construction.

The main components of the package include:

- (i) *A package assembly* - The package assembly consists of a shielded cask (package) body and a closure lid bolted to the package body in the transport configuration. The material of construction for all package body structural components is austenitic stainless steel. Without the impact limiters, the package assembly is a cylinder 68 1/8 inches long and 57 1/2 inches in diameter.
- (ii) *Containment boundary* - The containment boundary of the 380-B package consists of the lower end structure, the inner shell, the upper end structure (including lead pour hole plug and welds), the containment O-ring seal (the inner elastomer seal in the closure lid), the closure lid main structure, the vent port in the closure lid including elastomer sealing washer and brass port plug, and the vent port drill access hole plug and weld.

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9370	0	71-9370	USA/9370/B(U)-96	2 OF	4

5.(a) Packaging (Continued)

(2) Description

- (iii) *A personnel barrier* - A personnel barrier limits access to the cask body (i.e., the area between the impact limiters). The personnel barrier consists of two equal assemblies of expanded stainless steel sheets and 0.105-in. (12 gauge) stainless steel perimeter strips. The personnel barrier is removable and it is secured with either padlocks, pins or both.
- (iv) *An inner cover* - The inner cover serves as an exclusion zone. The inner cover is a ½-inch thick stainless steel plate with a 2-in. wide by 1 ½-in. thick reinforcing ring. The reinforcing ring is welded to the plate's bottom outer perimeter. The inner cover includes ½ - 13UNC stainless steel screws used with rotating retainers to anchor it to the inner shell of the cask assembly.
- (v) *Two impact limiters* - The impact limiters are 100-in. diameter and 43-in. long with a 16.8-in. conical section towards the outer end. Each impact limiter also includes:
  - (a) 1/4-in. thick Type 304 stainless steel outer shell and inner cylindrical shell
  - (b) 1/2-in. thick inner flat plate
  - (c) Polyurethane foam
  - (d) top end and inner surface with three, reinforced, 5/8 – 11UNC threads for lifting of the impact limiter only

Twelve bolts made from ASTM A564, Type 630, Condition H1100 precipitation hardened stainless steel with 1-1/4 – 7UNC threads and a 1.1-in. diameter shank are used to attach the impact limiters to the package body.

The shielding material is lead.

(3) Drawings

The packaging is constructed in accordance with AREVA Federal Services LLC drawings:

- 1916-02-01-SAR, "LANS 380-B Package Assembly SAR Drawing," sheets 1-2, Revision 0.
- 1916-02-02-SAR, "LANS 380-B Cask Assembly SAR Drawing," sheets 1-6, Revision 2.
- 1916-02-03-SAR, "LANS 380-B Impact Limiter Assembly SAR Drawing," sheets 1-4, Revision 1.

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER 9370	b. REVISION NUMBER 0	c. DOCKET NUMBER 71-9370	d. PACKAGE IDENTIFICATION NUMBER USA/9370/B(U)-96	PAGE 3	PAGES OF 4
----------------------------------	-------------------------	-----------------------------	--	-----------	---------------

5.(b) Contents

- (1) Type and form of material

Radioactive sealed sources of isotopes described in Condition No. 5.(b)(2).

- (2) Maximum quantity of material per package

Table 1. Maximum Activity of Payload Source Nuclides

Nuclide	Maximum Activity Ci
<sup>60</sup> Co	7,702
<sup>137</sup> Cs	40,675
<sup>192</sup> Ir	33,333
<sup>90</sup> Sr	30,606
<sup>226</sup> Ra (no Be) <sup>4</sup>	1,101
<sup>226</sup> Ra Be <sup>4</sup>	4.67

Notes:

- Physical form of all nuclides is solid material in a sealed capsule.
- The maximum activity listed is the maximum for a single nuclide in the 380-B. For combinations of different nuclides, lower activity limits apply as discussed in section 7.1.4 of Chapter 7, "Package Operations."
- Impurities may include oxygen, carbon, sulfur, bromine (hydrous), and chlorine (hydrous and anhydrous).

- (3) Maximum weight of contents

Table 2. Maximum Weight of Contents

Component	Maximum Weight (lbs.)
Device(s)	10,000
Dunnage	2,000

- (4) The maximum decay heat shall not exceed 205 watts per package.

- Plutonium sources are not permitted for transport.
- Americium sources are not permitted for transport.
- The total fissile material is limited to 15 grams or less.

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9370	0	71-9370	USA/9370/B(U)-96	4	OF 4

9. In addition to the requirements of Subpart G of 10 CFR Part 71:
- (a) The package shall be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application; and
  - (b) The package must meet the Acceptance Tests and Maintenance Program of Chapter 8 of the application.
10. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.
11. Expiration date: November 30, 2022.

REFERENCES

National Nuclear Security Administration application dated April 6, 2016.

Supplements dated: October 13, 2016; June 9, 2017, and September 11, 2017.

FOR THE U.S. NUCLEAR REGULATORY  
COMMISSION



Meraj Rahimi, Acting Chief  
Spent Fuel Licensing Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Date: November 26, 2017



U.S. Department of  
Transportation

**Pipeline and  
Hazardous Materials  
Safety Administration**

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

**CERTIFICATE NUMBER:** USA/9370/B(U)-96

**ORIGINAL REGISTRANT(S) :**

National Nuclear Security Administration, Department of Energy  
NNSA Office of Packaging and Transportation (NA-531)  
P.O. Box 5400  
Albuquerque, NM, 87185-5400  
USA