

**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	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

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

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	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.

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9370	0	71-9370	USA/9370/B(U)-96	3 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
⁶⁰ Co	7,702
¹³⁷ Cs	40,675
¹⁹² Ir	33,333
⁹⁰ Sr	30,606
²²⁶ Ra (no Be) ⁴	1,101
²²⁶ Ra Be ⁴	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.

6. Plutonium sources are not permitted for transport.

7. Americium sources are not permitted for transport.

8. The total fissile material is limited to 15 grams or less.

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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

/RA/

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

Date: November 26, 2017