U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

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

**COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE B(U)
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/9258/B(U)-96, REVISION 3**

This certifies that the radioactive material package design described has been certified by the Competent Authority of the United States as meeting the regulatory requirements for a Type B(U) packaging for radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and the United States of America[2].

1. Package Identification - MDS Nordion Model No. F-294 Transport Package.

2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9258, Revision 3 (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 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.

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[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.

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d. 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 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/9258/B(U)-96 in addition to other required markings and labeling.

5. Expiration Date - This certificate expires on December 31, 2013.

This certificate is issued in accordance with paragraph 808 of the IAEA Regulations and Section 173.471 of Title 49 of the Code of Federal Regulations, in response to the November 14, 2008 petition by MDS Nordion, Ottawa, Ontario, and in consideration of other information on file in this Office.

Certified By:

Dec 17 2008

Robert A. Richard (DATE)
Deputy Associate Administrator for Hazardous Materials Safety

Revision 3 - Issued to endorse U. S. Nuclear Regulatory Commission Certificate of Compliance No. 9258, Revision 3.

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9258	3	71-9258	USA/9258/B(U)-96	1	OF	3

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 *(Name and Address)*

MDS Nordion
447 March Road
Ottawa, Ontario, K2K 1X8
Canada

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

MDS Nordion consolidated application dated August 1, 2003, 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.: F-294

(2) Description

A steel encased, lead shielded shipping cask for special form sources. The package consists of a cylindrical cask body with cooling fins, a closure plug, a cylindrical external fireshield, a top crush shield, a permanent skid, and a removable shipping skid. The special form sources are positioned by a source carrier within the cask cavity. There are two alternative source carriers. The F-313 source carrier holds forty special form sources in a single ring configuration. The F-457 source carrier holds eighty special form sources in a double ring configuration.

The cask body is constructed of a ½-inch thick inner stainless steel shell, and a ½-inch thick outer stainless steel shell. The annulus between the inner and outer shells is filled with lead, approximately 11 ¼ inches thick. The cask is closed by a 2 ½ inch thick stainless steel closure lid and 16 one-inch diameter bolts. A lead radiation protection plug is fitted to the cask closure plate. Stainless steel fins are welded onto the exterior of the cask to dissipate heat. The cask is surrounded by a cylindrical fireshield which is constructed of ceramic fiber thermal insulation encased in carbon steel shells. A composite assembly consisting of a finned crush shield that acts as an impact limiter and a fireshield is bolted to the top end of the cask. The cask is equipped with a fixed skid and a shipping skid composed of steel beams. The fixed skid includes a sheet of thermal insulation enclosed in steel.

5.(a) Packaging

(2) Description (continued)

The approximate dimensions and weights of the package are as follows:

Cask body outer diameter (excluding cooling fins)	36 inches
Cask body height	52 1/4 inches
Cask cavity inside diameter	11 1/2 inches
Cask cavity inside height	19 3/4 inches
Lead shield thickness	11 1/4 inches
Fireshield outer diameter	47 inches
Overall package dimensions (including shipping skid)	
width	78 inches
length	78 inches
height	80 1/2 inches
Maximum contents weight	40 pounds
Maximum package weight (including contents)	21,000 pounds

(3) Drawings

The packaging is constructed in accordance with MDS Nordion Drawing Nos.:

F629401-001, Sheet 1, Rev. F,
F629401-001, Sheet 2, Rev. F,
F629401-001, Sheet 3, Rev. D,
F629401-001, Sheet 4, Rev. F,
F629401-001, Sheet 5, Rev. F,
F631301-001, Rev. B, and
F645701-001, Rev. A.

(b) Contents

(1) Type and form of material

Cobalt-60 as sealed sources which meet the requirements of special form radioactive material.

(1) Maximum quantity of material per package

360,000 Curies

6. In addition to the requirements of Subpart G of 10 CFR Part 71:

   (a) The package must meet the Acceptance Tests and Maintenance Program of Chapter 8.0 of the application.

   (b) The package shall be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7.0 of the application.

7. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

8. Revision 2 of this Certificate may be used until October 31, 2009.

9. Expiration date: December 31, 2013.

REFERENCES

MDS Nordion application dated August 1, 2003.

Supplements dated: March 12, April 20, May 20, 2004; and September 12, 2008.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Eric J. Benner

Eric J. Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: 10/22/08

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