



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/9387/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 Agency¹ and the United States of America² The package design is approved for use within the United States for import and export shipments made in accordance with applicable international and domestic transport regulations.

1. Package Identification - OP-RMSC.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9387, 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.

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

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

CERTIFICATE USA/9387/B(U)-96, REVISION 0

- 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.
 - d. Records of Management System activities required by Paragraph 306 of the IAEA regulations¹ 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/9387/B(U)-96 in addition to other required markings and labeling.
5. Expiration Date - This certificate expires on January 18, 2027.

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 19, 2022 petition by Industrial Nuclear Company, Inc., San Leandro, CA, and in consideration of other information on file in this Office.

Certified By:



William Schoonover
Associate Administrator for Hazardous
Materials Safety

January 24, 2022
(DATE)

Revision 0 - Issued to endorse U.S. Nuclear Regulatory Certificate of Compliance No. 9387, Revision 0.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9387	0	71-9387	USA/9387/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*)
Industrial Nuclear Company, Inc.
14320 Wicks Blvd.
San Leandro, CA 94577
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
Industrial Nuclear Company application
dated November 1, 2021.

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.: OP-RMSC
- (2) Description

The Outer Package-Raw Material Shipping Container, (Model No. OP-RMSC) is designed to transport special form radioactive materials in the Raw Material Shipping Container (RMSC). The RMSC is fabricated from a stainless steel pipe with a stainless steel plate welded at one end. Primary shielding is provided by a tungsten alloy located inside the stainless steel pipe. The RMSC lid is a stainless steel plate. The upper portion of the RMSC cavity is formed by stainless steel pipe into which tungsten alloy shielding is placed to provide shielding above the lower portion of the RMSC cavity wherein the special form contents, in a special form capsule holder, are located. The lid is secured to the RMSC using six 3/8-16 UNC-2A hex bolts. The OP-RMSC inner cavity, in which the RMSC is transported, is formed from a stainless steel pipe to which a stainless steel plate is welded at one end. The stainless steel inner lid is secured to a stainless steel plate, which is welded to the outer diameter of the stainless steel pipe and the inner diameter of the stainless steel pipe that forms the OP-RMSC exterior, using eight 1/2-13 UNC-2A hex bolts. The stainless steel pipe that forms the OP-RMSC exterior has a stainless steel plate welded to one end. The cavity formed by the OP-RMSC's inner and outer stainless steel pipes and their stainless steel end plates is filled with polyurethane foam. The OP-RMSC lid is a stainless steel plate that is attached to a stainless steel plate welded to the inner diameter of the pipe that forms the OP-RMSC exterior, using eight 1/2-13 UNC-2A hex bolts. The maximum gross weight of the package is 650 pounds.

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	9387	0	71-9387	USA/9387/B(U)-96	2 OF	3

(3) Drawings

The package is constructed and assembled in accordance with the following Industrial Nuclear Company (now INC) Drawing Nos.:

OP-RMSC-SAR-TA, sheets 1-4, Rev. 1

RMSC-SAR-TA, sheets 1-3, Rev. 2

RMSC-SPFH-SAR, sheet 1, Rev. 0

5. (b) Contents

(1) Type and form of material

Iridium-192 as sealed sources that meet the requirements of special form radioactive material.

Selenium-75 as sealed sources that meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

Iridium-192: 16,000 Ci (592 TBq) (content); per capsule: 4,000 Ci (148 TBq) (content)

Selenium-75: 16,000 Ci (592 TBq) (content); per capsule 4,000 Ci (148 TBq) (content)

(3) Maximum decay heat: 100 Watts

6. The name plate on the overpack must be fabricated of materials capable of resisting a 1475°F fire environment for one-half hour and maintain its legibility.

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

(a) The package shall be prepared for shipment in accordance with the Operating Procedures in Chapter 7 of the application and

(b) The packaging must meet the Acceptance Tests and Maintenance Program in Chapter 8 of the application.

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

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9387	0	71-9387	USA/9387/B(U)-96	3	OF 3

9. Expiration date: January 18, 2027.

REFERENCES

Industrial Nuclear Company application dated November 1, 2021.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Yoira Diaz Sanabria, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: January 18, 2022





U.S. Department of
Transportation

**Pipeline and
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Safety Administration**

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

CERTIFICATE NUMBER: USA/9387/B(U)-96

ORIGINAL REGISTRANT(S) :

Industrial Nuclear Company, Inc.
14320 Wicks Blvd.
San Leandro, CA, 94577
USA