



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 FISSILE  
RADIOACTIVE MATERIALS PACKAGE DESIGN  
CERTIFICATE USA/9037/AF, REVISION 15**

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 AF package for fissile material as prescribed in the regulations of the International Atomic Energy Agency<sup>1</sup> and the United States of America<sup>2</sup> 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 - Model No. TRIGA-II.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9037, Revision 16 (attached).
3. Criticality - The minimum criticality safety index is 0.4. The maximum number of packages per conveyance is determined in accordance with Table 11 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 Engineering and Research, (PHH-23), Pipeline and Hazardous

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<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.

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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.
  - 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.
5. Special Conditions - This package is approved as meeting the requirements of the 1973 Edition of the IAEA regulations. Fabrication of new packagings is not authorized. The package design has not been evaluated against the requirements of the 2018 Edition of the IAEA regulations.
6. Marking and Labeling - The package shall bear the marking USA/9037/AF in addition to other required markings and labeling.
7. Expiration Date - This certificate expires on March 31, 2026.

This certificate is issued in accordance with paragraph(s) 820 of the IAEA Regulations and Section 173.471 and 173.472 of Title 49 of the Code of Federal Regulations, in response to the May 12, 2021 petition by General Atomics, San Diego, CA, and in consideration of other information on file in this Office.

Certified By:



William Schoonover  
Associate Administrator for Hazardous  
Materials Safety

May 27, 2021  
(DATE)

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

| 1. | a. CERTIFICATE NUMBER | b. REVISION NUMBER | c. DOCKET NUMBER | d. PACKAGE IDENTIFICATION NUMBER | PAGE | PAGES |
|----|-----------------------|--------------------|------------------|----------------------------------|------|-------|
|    | 9037                  | 16                 | 71-9037          | USA/9037/AF                      | 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

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|---|--|
| a. ISSUED TO ( <i>Name and Address</i> )<br>General Atomics<br>P.O. Box 85608<br>San Diego, CA 92186-5608 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION<br>General Atomics application dated October 4,<br>1995, 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.: TRIGA-II

(2) Description

TRIGA fuel element shipping container. The outer packaging is a steel drum, approximately 22.5 inches in diameter by 57.5 inches high. The inner vessel is a 5-inch Schedule 40 carbon steel pipe. Dimensions of the inner vessel are approximately 50 inches in height with a 1/4-inch thick wall and a 5-inch inside diameter. The top of the inner vessel is a threaded pipe cap and the bottom is a welded 1/4-inch thick flat disc. The inner vessel is centered and supported within the outer packaging by eight, 3/8-inch diameter braced, support spacer rods. The void between the inner vessel and the outer packaging is filled with vermiculite tamped to a minimum density of 4.5 lbs/ft<sup>3</sup>. Maximum gross weight including contents is approximately 330 pounds.

(3) Drawing

The packaging is constructed in accordance with General Atomic Company Drawing No. TOS396C161, Rev. F.

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5. (b) Contents

(1) Type and form of material

Special function TRIGA fuel elements containing uranium-zirconium-hydride or erbium-uranium-zirconium-hydride whose fuel portion has nominal compositions (except erbium content) as described in Table A.1-1 of the October 4, 1995, application, and clad with stainless steel, aluminum or incoloy. Uranium enriched to a maximum 93.5 w/o in the U-235 isotope. The Hydrogen to Zirconium atomic ratio within the fuel meat must not exceed 1.65.

(2) Maximum quantity of material per package

U-235 content not to exceed 1.39 kg, contained in a maximum of 7, 1.5-inch diameter fuel elements, or a maximum of 25 0.5-inch diameter fuel elements, whose fuel portion has nominal compositions (except erbium content) as described in Table A.1-2 (Rev. 1) of the October 4, 1995, application. For enrichments greater than 5 weight percent U-235, uranium content not to exceed an A<sub>2</sub> quantity.

(c) Criticality Safety Index 0.4

6. 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 of Chapter 8 of the application.

(b) The packaging must meet the Acceptance Tests and Maintenance Program of Chapter 9 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. Expiration date March 31, 2026.

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REFERENCES

General Atomic Company application dated October 4, 1995.

Supplements dated: December 5, 1995, October 16, 2000, November 16, 2005, November 22, 2010, November 20, 2015, and February 19, 2021.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Norma Garcia Santos, Acting Chief  
Storage and Transportation Licensing  
Branch Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Date: 3/29/2021





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1200 New Jersey Ave, SE  
Washington, D.C. 20590

**CERTIFICATE NUMBER:** USA/9037/AF

**ORIGINAL REGISTRANT(S) :**

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Suite 201  
Washington, DC, 20009  
USA

General Atomics  
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USA

Transport Logistics International (DAHER - TLI)  
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USA

TN Americas LLC  
Orano TN  
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