



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/9375/B(U)-96, REVISION 1**

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 - HI-STAR ATB 1T.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9375, Revision 1 (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.

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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. Special Conditions -

a. Air transport is prohibited.

b. Package must be transported as exclusive use.

5. Marking and Labeling - The package shall bear the marking USA/9375/B(U)-96 in addition to other required markings and labeling.

6. Expiration Date - This certificate expires on June 30, 2026. Previous editions which have not reached their expiration date may continue to be used.

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 31, 2023 petition by Holtec International, Camden, NJ, and in consideration of other information on file in this Office.

Certified By:



William Schoonover
Associate Administrator for Hazardous
Materials Safety

February 02, 2023
(DATE)

Revision 1 - Issued to endorse U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9375, Revision 1.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

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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*)
Holtec International
1 Holtec Blvd.
Camden, NJ 08104
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
Holtec International Report No. HI-2146312 *Safety Analysis Report for the HI-STAR ATB 1T Package*,
Revision 5, dated December 9, 2022.

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.: HI-STAR ATB 1T
- (2) Description

The HI-STAR ATB 1T, designed for transportation of radioactive non-fuel waste including segmented reactor internals, and related hardware waste, consists of three major components: the packaging body, the secondary containers, and the waste baskets.

Packaging Body

The HI-STAR ATB 1T is a rectangular-parallelepiped multi-layer steel-weldment with a closure lid secured by a custom designed locking system. Closure verification is provided by the installation of the locking wedge lock bars after closure of the lid and prior to transport. The outer surface of the packaging body inner structure is buttressed with steel for gamma shielding. The interfacing surfaces of the lid and the flange at the top of the packaging body are machined to seat two concentric elastomeric gaskets. An insulation board is used in the closure region of the packaging to ensure that the performance of the sealing gasket is not compromised. The containment system consists of the Closure Lid, Containment Wall Plates, Containment Baseplate, and Closure Lid Locking Wedges.

The HI-STAR ATB 1T may have an aluminum lid spacer placed inside the package, if needed, to minimize the movement of the contents. Retractable austenitic stainless-steel adjustable inserts are recessed in the side walls of the HI-STAR ATB 1T. The external impact absorbers, made of either aluminum, austenitic stainless steel, or of a combination of aluminum and austenitic stainless steel, are located on the top, bottom, side, end, and corner exterior surfaces of the package.

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5.(a)(2) Description (continued)

Secondary Containers:

The secondary containers, called BFA-Tanks, have four design variants (T-50, T-100, T-150, T-200) each with a different wall thickness, each qualified for a certain total maximum activity and specific activity level. BFA-Tanks are painted carbon steel rectangular parallelepiped weldments with bolted lids. The lids of the BFA-Tanks are equipped with metallic seals. BFA-Tanks have external dimensions of approximately 130" long, 51" wide and 90" high.

Waste Baskets:

There are four BFA-Tank Cassette (BTCs) design variants; each BTC variant is placed within and matched to a specific BFA Tank variant. Each type of BTC is designed to accommodate contents of a given mass and activity. BTCs are rectangular steel weldments that include a baseplate and a removable upper cover plate or lid. BTCs provide supplemental gamma shielding.

A Weather Protection Cover (WPC) is secured to the top of the HI-STAR ATB 1T package to prevent dirt and water from accumulating on its external surfaces. The WPC is not a structural component of the package but is designated as a packaging component when used.

The outer dimensions of the HI-STAR ATB 1T package, with impact limiters installed, are approximately 168" long, 94" wide and 115" high. The empty packaging weighs approximately 136,686 lbs., while the maximum gross weight of the loaded HI-STAR ATB 1T package is 249,122 lbs.

(3) Drawings

The packaging shall be constructed and assembled in accordance with the following drawings:

- (a) HI-STAR ATB 1T Cask Drawing 9786, Sheets 1-9, Rev. 10
- (b) BFA-Tanks and Cassettes Drawing 9876, Sheets 1-4, Rev. 9

5(b) Contents

(1) Type and form of material

- (a) Segmented and non-segmented activated stainless steel or Inconel reactor internals, e.g., Top Guides/Core Grids, Core Shrouds, Steam Separator Units, Core Spray Sparger Assemblies, Steam Dryers, etc.,
- (b) Surface-contaminated reactor related hardware,

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5(b) Contents (continued)

- (c) Secondary waste (i.e., debris/chips) generated by the mechanical cutting process, chip drums (stainless steel) with surface contamination or induced activity and metallic waste filters (stainless steel or ceramic mesh screens) pre-packed in separate drums.
- (2) Maximum quantity of material per package:
 - (a) Co-60 activity of any single waste item loaded into its respective BFA Tank not to exceed the quantities in Table 7.1.2 of the application, e.g., 1,400 GBq/Kg for the T-200 configuration.
 - (b) Maximum permissible Co-60 activity of a fully loaded BFA-Tank not to exceed the quantities in Table 7.1.2 of the application, e.g., 3.60×10^{15} Bq for the T-200 configuration.
 - (c) Radionuclides (excluding Co-60) with Gamma Energies > 0.45 MeV activity or specific activity not to exceed the quantities in Table 7.1.2 of the application.
 - (d) Maximum permissible Co-60 activity of non-fixed surface contamination for all BFA Tank configurations is 2.211×10^{13} Bq.
 - (e) The maximum permissible quantity of fissile materials is 2 g for all BFA Tanks configurations.
 - (f) Maximum weight of contents: 112,436 lbs, including secondary packaging.
- 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 in Chapter 7 of the application; and
 - (a) The package must meet the Acceptance Tests and Maintenance Program of Chapter 8.0 of the application.
- 7. The package shall be transported exclusive use only.
- 8. No air shipment is authorized. Flammable gas concentrations shall be less than 5% by volume.
- 9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.
- 10. The package may be used in the U.S. if the BFA-Tanks and BFA-Tank Cassettes are manufactured under an NRC approved Quality Assurance Program.

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11. Certified mill test reports (CMTRs) for (i) the crushable components attached externally to the cask and (ii) the closure lid impact absorbers must comply with the material properties specified in Table 8.1.5 of the application.
12. Expiration date: June 30, 2026.

REFERENCES

Holtec International Report No. HI-2146312 *Safety Analysis Report for the HI-STAR ATB 1T Package*, Revision 5, dated December 9, 2022.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Donald Habib, Acting Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: December 13, 2022.





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

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ORIGINAL REGISTRANT(S) :

Holtec International
KPS Technology Campus
1 Holtec Blvd
Camden, NJ, 08104
USA