

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1.	a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
	9375	1	71-9375	USA/9375/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

- | | |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a. ISSUED TO (<i>Name and Address</i>)
Holtec International
1 Holtec Blvd.
Camden, NJ 08104 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
Holtec International Report No. HI-2146312 <i>Safety Analysis Report for the HI-STAR ATB 1T Package</i> ,
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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	9375	1	71-9375	USA/9375/B(U)-96	2 OF	4

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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	9375	1	71-9375	USA/9375/B(U)-96	3 OF	4

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.

