

# **CERTIFICATE OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9381	0 - Draft	71-9381	USA/9381/B(U)F-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

- |                                                                                                                                                         |                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>a. ISSUED TO (<i>Name and Address</i>)</p> <p>Holtec International<br/>Krishna P. Singh Technology Campus<br/>1 Holtec Blvd<br/>Camden, NJ 08104</p> | <p>b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION</p> <p>Holtec International Report No. HI-2177805,<br/>Safety Analysis Report on the HI-STAR 180L<br/>Package, Revision TBD, dated TBD</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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 180L
- (2) Description

The four major components of the HI-STAR 180L Packaging are: the Cask, the Fuel Basket, the Impact Limiters (including adapters) and the Personnel Barrier. The package is designed to transport both high burnup fuel (HBF) and moderate burnup fuel (MBF).

### **Cask**

The cask containment vessel is formed by a cylindrical nickel steel shell welded to a nickel steel baseplate at the bottom and a machined nickel steel forging at the top, which is equipped with machined surfaces to fasten two independent cryogenic steel closure lids, each equipped with a set of concentric metallic seals.

The cask provides the containment boundary, the helium retention boundary, gamma and neutron radiation shielding, and heat rejection capability of the package. The cask containment system consists of the cask inner shell, baseplate, closure flange, closures lids and inner seals, inner closure lid vent and drain port covers and inner seals and port sleeves, and outer closure lid access port plug and seal. The outer surface of the cask inner shell is buttressed by the monolithic shield cylinder for gamma and neutron shielding.

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	9381	0 - Draft	71-9381	USA/9381/B(U)F-96	2 OF	3

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

The HI-STAR 180L is approximately 5390 mm without impact limiters and approximately 8365 mm with impact limiters. The maximum gross weight of the loaded HI-STAR 180L package is 156 Metric Tons.

**Fuel Basket**

Metamic-HT, a metal matrix composite of aluminum and boron carbide, is the principal constituent material of the fuel basket, both as structural material and neutron absorber material. The F-69L fuel basket model is a honeycomb structure featuring 69 storage cells for Boiling Water Reactor (BWR) fuel assemblies.

**Impact Limiters**

The HI-STAR 180L package is fitted with two impact limiters fabricated of aluminum crush material completely enclosed by an all-welded austenitic stainless-steel skin. Both impact limiters are attached to the cask with 16 bolts and impact limiter adapters.

## (3) Drawings

- |                                           |                                   |
|-------------------------------------------|-----------------------------------|
| (a) HI-STAR 180L Cask                     | Drawing 10942, Sheets 1-7, Rev. 3 |
| (b) F-69L Fuel Basket Assembly            | Drawing 10961, Sheets 1-3, Rev. 4 |
| (c) HI-STAR 180 Impact Limiters           | Drawing 5062, Sheets 1-5, Rev. 7  |
| (d) HI-STAR 180L Impact Limiters Adapters | Drawing 10955, Sheets 1-4, Rev. 1 |

## 5.(b) Contents

## (1) Type, Form, and Quantity of Material

BWR fuel assemblies and separated fuel rods meeting the specifications in Table 7.D.1 and the characteristics in Table 7.D.2 of the application.

## (2) Maximum Quantity of Material Per Package

a. Up to 69 BWR fuel assemblies

b. Up to 69 BWR fuel assemblies of which up to 4 fuel assemblies may be replaced by up to 112 separated fuel rods (28 fuel rods maximum in each storage location).

## 6. Criticality Safety Index (CSI)= 0.0

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	9381	0 - Draft	71-9381	USA/9381/B(U)F-96	3 OF	3

7. 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 Chapter 7 of the application.
  - (b) The package shall meet the Acceptance Tests and Maintenance Program of Chapter 8 of the application.
8. The personnel barrier shall be installed and remain installed while transporting the package if necessary to meet package surface temperature and/or package dose rates requirements.
9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.
10. Transport of fissile material by air is not authorized.
11. Expiration Date: TBD

## REFERENCE(S):

Holtec International Report No. HI-2177805, *Safety Analysis Report on the HI-STAR 180L Package*, Revision TBD, dated TBD.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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

Date: TBD