CERTIFICATE OF COMPLIANCE FOR SPENT FUEL STORAGE CASKS

The U.S. Nuclear Regulatory Commission is issuing this Certificate of Compliance pursuant to Title 10 of the *Code of Federal Regulations*, Part 72, "Licensing Requirements for Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste" (10 CFR Part 72). This certificate is issued in accordance with 10 CFR 72.238, certifying that the storage design and contents described below meet the applicable safety standards set forth in 10 CFR Part 72, Subpart L, and on the basis of the Final Safety Analysis Report (FSAR) of the cask design. This certificate is conditional upon fulfilling the requirements of 10 CFR Part 72, as applicable, and the conditions specified below.

Certificate No.	Effective Date (Certificate)	Expiration Date	Docket No.	Amendment No.	Amendment Effective Date	Package Identification No.
1008	10/04/1999	10/04/2019	72-1008	2	5/29/2001	USA/72-1008
	Renewed Effective Date	Renewed Expiration Date		Revision No.	Revision Effective Date	
	12/15/2021	10/04/2059		0	N/A	

Issued To: (Name/Address)

Holtec International
Holtec Technology Campus
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Camden, NJ 08104

Safety Analysis Report Title

Holtec International Inc., Final Safety Analysis Report for the HI-STAR 100 Cask System
Docket No. 72-1008

CONDITIONS

This certificate is conditioned upon fulfilling the requirements of 10 CFR Part 72, as applicable, the attached Appendix A (Technical Specifications) and Appendix B (Approved Contents and Design Features), and the conditions specified below:

1. CASK

The HI-STAR 100 Cask System is certified as described in the Final Safety Analysis Report (FSAR) and in NRC's Safety Evaluation Report (SER) accompanying the Certificate of Compliance. It is designed for both storage and transfer of irradiated nuclear fuel.

a. Model No.: HI-STAR 100 (MPC-24, MPC-68, MPC-68F)

The HI-STAR 100 Cask System is comprised of the multi-purpose canister (MPC), which contains the fuel, and the overpack, which contains the MPC. The two digits after the MPC designate the number of reactor fuel assemblies for which the respective MPCs are designed. The MPC-24 is designed to contain up to 24 Pressurized Water Reactor (PWR) fuel assemblies. The MPC-68 is designed to contain up to 68 Boiling Water Reactor (BWR) fuel assemblies. Any MPC-68 containing fuel assemblies with known or suspected defects, such as ruptured fuel rods, severed rods, loose fuel pellets, or which cannot be handled by normal means due to fuel cladding damage, is designated as MPC-68F. The MPC-24 and the MPC-68 (including the MPC-68F) are identical in external dimensions and will fit into the same overpack design.

1. b. Description

The complete HI-STAR 100 Cask System for storage of spent nuclear fuel is comprised of two discrete components: the MPC and the storage/transport overpack. The HI-STAR 100 CASK System consists of interchangeable MPCs which constitute the confinement boundary for BWR or PWR spent nuclear fuel and an overpack which provides the helium retention boundary, gamma and neutron radiation shielding, and heat rejection capability. All MPCs have identical exterior dimensions which render them interchangeable. A single overpack design is provided which is capable of storing each type of MPC.

The HI-STAR 100 MPCs are welded cylindrical structures with flat ends. Each MPC is an assembly consisting of a honeycombed fuel basket, a baseplate, canister shell, a lid, and a closure ring. The outer diameter and cylindrical height of each MPC is fixed. However, the number of spent nuclear fuel storage locations in each of the MPCs depends on the fuel assembly characteristics. The MPC provides the confinement boundary for the stored fuel. The confinement boundary is a seal-welded enclosure constructed entirely of a stainless steel alloy. The inner surfaces of the HI-STAR 100 overpack form an internal cylindrical cavity for housing the MPC. The outer surface of the overpack inner shell is buttressed with intermediate shells of gamma shielding.

The fuel transfer and auxiliary equipment necessary for Independent Spent Fuel Storage Installation operation are not included as part of the HI-STAR 100 Cask System reviewed for a Certificate of Compliance under 10 CFR Part 72, Subpart L. Such equipment may include, but is not limited to, special lifting devices, transfer trailers or equipment, and vacuum drying/helium leak test equipment.

2. OPERATING PROCEDURES

Written operating procedures shall be prepared for cask handling, loading, movement, surveillance, and maintenance. The user's site-specific written operating procedures shall be consistent with the technical basis described in Chapter 8 of the FSAR.

3. ACCEPTANCE TESTS AND MAINTENANCE PROGRAM

Written cask acceptance tests and maintenance program shall be prepared consistent with the technical basis described in Chapter 9 of the FSAR.

4. QUALITY ASSURANCE

Activities in the areas of design, procurement, fabrication, assembly, inspection, testing, operation, maintenance, repair, modification of structures, systems and components, and decommissioning that are important to safety shall be conducted in accordance with a Commission-approved quality assurance program which satisfies the applicable requirements of 10 CFR Part 72, Subpart G, and which is established, maintained, and executed with regard to the cask system.

5. HEAVY LOADS REQUIREMENTS

Each lift of a HI-STAR 100 spent fuel cask must be made in accordance with the existing heavy loads requirements and procedures of the licensed facility in which the lift is made. A plant-specific safety review (in accordance with 10 CFR 50.59 or 10 CFR 72.48, if applicable) is required to show operational compliance with existing plant-specific heavy loads requirements.

6. APPROVED CONTENTS

Contents of the HI-STAR 100 Cask System must meet the fuel specifications given in Appendix B to this certificate.

7. APPROVED DESIGN FEATURES

Features or characteristics for the site or cask must be in accordance with Appendix B to this certificate.

8. CHANGES TO THE CERTIFICATE OF COMPLIANCE

The holder of this certificate who desires to make changes to the certificate, which includes Appendix A (Technical Specifications) and Appendix B (Approved Contents and Design Features), shall submit an application for amendment of the certificate.

9. AUTHORIZATION

The HI-STAR 100 Cask System, which is authorized by this certificate, is hereby approved for general use by holders of 10 CFR Part 50 and 10 CFR Part 52 licenses for nuclear reactors at reactor sites under the general license issued pursuant to 10 CFR 72.210, subject to the conditions specified by 10 CFR 72.212, and the attached Appendix A and Appendix B.

CERTIFICATE OF COMPLIANCE FOR SPENT FUEL STORAGE CASKS

Supplemental Sheet

Certificate No.	1008
Amendment No.	2
Renewed	Yes
Page	4 of 4

10. FSAR UPDATE FOR RENEWED CoC

The CoC holder shall submit an updated FSAR to the Commission, in accordance with 10 CFR 72.4, within 90 days after the effective date of the renewal. The updated FSAR shall reflect the changes resulting from the review and approval of the CoC renewal, including the HI-STAR 100 FSAR supplement that is documented in Appendix D of the HI-STAR 100 CoC renewal application, Revision 1.D, dated November 24, 2020 (ADAMS Accession No. ML20329A323). The CoC holder shall continue to update the FSAR pursuant to the requirements of 10 CFR 72.248.

11. 10 CFR 72.212 EVALUATIONS FOR RENEWED CoC USE

Any general licensee that initiates spent fuel dry storage operations with the HI-STAR 100 Cask System after the effective date of the CoC renewal and any general licensee operating a HI-STAR 100 Cask System as of the effective date of the CoC renewal, including those that put additional storage systems into service after that date, shall:

a. As part of the evaluations required by 10 CFR 72.212(b)(5), include evaluations related to the terms, conditions, and specifications of this CoC amendment as modified (i.e., changed or added) as a result of the CoC renewal.

b. As part of the document review required by 10 CFR 72.212(b)(6), include a review of the FSAR changes resulting from the CoC renewal and the NRC Safety Evaluation Report related to the CoC renewal.

c. Ensure that the evaluations required by 10 CFR 72.212(b)(7) and (8) capture the evaluations and review described in (a.) and (b.) of this CoC condition.

d. Complete this condition prior to entering the period of extended operation or no later than one year after the effective date of the CoC renewal, whichever is later.

12. AMENDMENTS AND REVISIONS FOR RENEWED CoC

All future amendments and revisions to this CoC shall include evaluations of the impacts to aging management activities (i.e. time-limited aging analyses and aging management programs) to assure they remain adequate for any changes to structures, systems, and components within the scope of renewal.

FOR THE NUCLEAR REGULATORY COMMISSION

John B. McKirgan

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Date: 2021.11.16 14:59:14 -05'00'

John McKirgan, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
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Washington, DC 20555

Attachments:
1. Appendix A
2. Appendix B

Dated: November 16, 2021