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 and High-Level Radioactive 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	Expiration Date	Docket No.	Amendment No.	Amendment Effective Date	Package Identification No.
1030	**TBD**	**TBD**	72-1030	0		USA/72-1030

Issued To: (Name/Address)

Transnuclear Inc.,
7135 Minstrel Way Suite 300
Columbia, MD 21045

Safety Analysis Report Title

Transnuclear Inc., “Safety Analysis Report for the NUHOMS® HD Horizontal Modular Storage System for Irradiated Nuclear Fuel”

CONDITIONS

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

1. CASK:

   a. Model No. NUHOMS® HD-32PTH

   The two digits refer to the number of fuel assemblies stored in the dry shielded canister (DSC), the character P for pressurized water reactor (PWR) is to designate the type of fuel stored, T to designate that the DSC is intended for transportation in a 10 CFR Part 71 approved package, and the last character H to designate that the design is qualified for fuel with burnup greater than 45 GWd/Mtu.

   b. Description

   The NUHOMS® HD System is certified as described in the safety analysis report (SAR) and in the Nuclear Regulatory Commission’s (NRC’s) Safety Evaluation Report (SER). The NUHOMS® HD System is a horizontal canister system composed of a steel Dry Shielded Canister (DSC), a reinforced concrete Horizontal Storage Module (HSM-H), and a Transfer Cask (TC). The NUHOMS® HD has been designed for enhanced heat rejection capabilities, and to permit storage of non fuel assembly hardware with the fuel and/or damaged spent fuel assemblies. The welded DSC provides confinement and criticality control for the storage and transfer of irradiated fuel. The concrete module provides radiation shielding while allowing cooling of the DSC and fuel by natural convection during storage. The TC is used for transferring the DSC from/to the spent fuel pool building to/from the HSM-H.

1.

b. Description (continued)

The principal component subassemblies of the DSC are the shell with integral bottom cover plate and shield plug and ram/grapple ring, top shield plug, top cover plate, and basket assembly. The 32PTH DSC basket consists of stainless steel square tubes and support strips for structural support, and geometry control; and aluminum/borated aluminum/Boral® or Metal Matrix Composite for heat transfer and criticality control. This assembly is designed to hold 32 PWR fuel assemblies. The DSC is designed to slide from the transfer cask into the HSM-H and back without damage to the sliding surfaces.

The HSM-H is a reinforced concrete unit with penetrations located at the top and bottom for air flow. The penetrations are protected from debris intrusions by wire mesh screens during storage operation. The HSM-H has heat shields that provide thermal protection for the HSM-H concrete. The DSC Support Structure, a structural steel frame with rails, is installed within the HSM-H module to provide for sliding the DSC in and out of the HSM-H and to support the DSC within the HSM-H. HSM-Hs are arranged in arrays to minimize space and maximize self-shielding.

The TC is designed and fabricated as a lifting device to meet ANSI N14.6 criteria. It is used for transfer operations within the spent fuel pool building and for transfer operations to/from the HSM-H. The TC is a cylindrical vessel with a bottom end closure assembly and a bolted top cover plate. Two upper lifting trunnions are located near the top of the cask for downending/uprighting and lifting of the cask in the spent fuel pool building. The lower trunnions, located near the base of the cask, serve as the axis of rotation during downending/uprighting operations and as supports during transport to/from the Independent Spent Fuel Storage Installation (ISFSI).

With the exception of the TC, fuel transfer and auxiliary equipment necessary for ISFSI operations are not included as part of the NUHOMS® HD System referenced in this Certificate of Compliance (CoC).

c. Drawings

The drawings for the NUHOMS® HD System are contained in Section 1 of the SAR.

d. Basic Components

The basic components of the NUHOMS® HD System that are important to safety are the DSC, HSM-H, and TC. These components are described in Section 2.5 and Table 2-5 of the SAR.

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 SAR.

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 SAR.

4. QUALITY ASSURANCE

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

5. HEAVY LOADS REQUIREMENTS

Each lift of a DSC and TC must be made in accordance with the existing heavy loads requirements and procedures of the licensed facility at which the lift is made. A plant-specific safety review (under 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 NUHOMS® HD System must meet the fuel specifications in Appendix A (Technical Specifications).

7. DESIGN FEATURES

Features or characteristics for the site, cask, or ancillary equipment must be in accordance with Appendix A (Technical Specifications).

8. PRE-OPERATIONAL TESTING AND TRAINING EXERCISE

A dry run training exercise of the loading, closure, handling, unloading, and transfer of the NUHOMS® HD System shall be conducted by each licensee prior to the first use of the system to load spent nuclear fuel assemblies. The training exercise shall not be conducted with spent nuclear fuel in the canister. The dry run may be performed in an alternate step sequence from the actual procedural guidelines in Chapter 8 of the SAR. The dry run shall include but not be limited to the following:

Loading Operations
a. Fuel Loading
b. DSC sealing, drying, and backfilling operations
c. TC downending and transport to the ISFSI
d. DSC transfer to the HSM-H

8. Cont.

Unloading Operations
a. DSC retrieval from HSM-H
b. Flooding of DSC
c. Opening of DSC

9. HSM-H THERMAL PERFORMANCE METHODOLOGY

The use of HSM-H thermal performance methodology is allowed for evaluating HSM-H configuration changes except for changes to the HSM-H cavity height, cavity width, elevation and cross-sectional areas of the HSM-H air inlet/outlet vents, total outside height, length and width of HSM-H if these changes exceed 8% of their nominal design values shown on the approved CoC drawings.

10. AUTHORIZATION

The NUHOMS® HD System, which is authorized by this certificate, is hereby approved for general use by holders of 10 CFR Part 50 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.

FOR THE NUCLEAR REGULATORY COMMISSION

DRAFT

Robert A. Nelson, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Attachment: Appendix A. Technical Specifications

Dated: **DRAFT**