

NUHOMS® 61BTH DSC

The NUHOMS® 61BTH Dry Shielded Canister (DSC) is licensed to store and transport 61 BWR fuel assemblies with or without channels. The DSC is licensed to store damaged fuel that can be handled by normal means. The DSC is licensed to store spent fuel that cannot be handled by normal means.

The 61BTH can be transferred in the Standard OS197 cask with the benefit of a fully shielded transfer cask at 100 tons. This is an important occupational dose advantage over larger and heavier competing casks that have to be transferred in a lightweight transfer cask at significantly higher surface dose conditions.

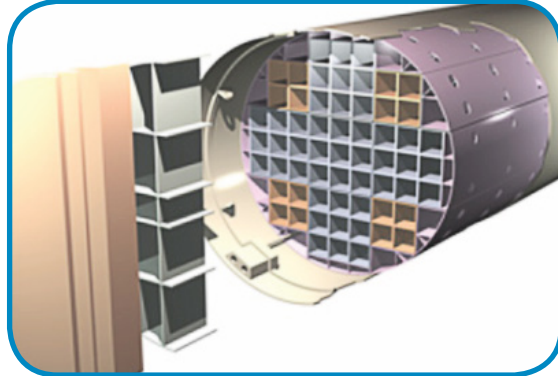
The 61BTH stainless steel basket consists of tubular fuel compartments grouped together and wrapped by over-sleeves to form 9-compartment and 4-compartment assemblies. The compartment assemblies are connected to perimeter rail assemblies. The rail assemblies provide the circular perimeter geometry that fits the basket inside the DSC shell.

By incorporating the bundled tube and the tube-in-tube geometry features, the basket of this 61BTH canister achieves superior structural rigidity, while minimizing welding. This basket geometry with the perimeter rail assemblies that provide a wider contact surface between the basket and the shell is superior to some competing designs that utilize point attachments. The most significant advantage of the wider contact surfaces achieved by the rails is the increased area of thermal conduction from the basket to the shell resulting in more efficient heat rejection and lower cladding and basket temperatures in the 61BTH.

The 61BTH incorporates the same NUHOMS® proven closure weld design that has been implemented into many loaded canisters in the U.S. to date, with a performance record that is unmatched in the industry.

Damaged fuel can also be stored in the 61BTH. The canister uses unique end caps to confine the assembly inside the basket cell.

The 61BTH outside diameter is 67.25 inches, and it is fully compatible with the existing TN OS197 transfer equipment, providing clients with the option of leasing the equipment on an as-needed basis.



About TN Americas

TN Americas is a leader in the American nuclear market offering innovative total systems solutions for used fuel and radioactive waste management and transportation. More than 50 percent of American nuclear plant operators use TN's used fuel storage or transport solutions, irradiated waste removal and processing, and pool to pad services.

TN Americas' track record of providing safe storage and transportation of used fuel is driven by state-of-the-art products and services, innovative engineering solutions, and integrity in meeting customer expectations for low-dose and error-free campaigns. TN Americas customers include utilities, reactor operators, research reactors and the U.S. government.

TN Americas' products are marked by the highest standard of safety, uncompromising commitment to quality and operational dependability, and "as promised" service integrity.

Technical Features

Payload:

61 BWR Assemblies
Intact Fuel with or w/o Channels
Damaged Fuel – Maximum 16 Assemblies per DSC
Failed Fuel – Maximum 4 Assemblies per DSC
Maximum Heat Load – 31.2 kW
Maximum Heat Load/Assembly – 0.7 kW

Materials of Construction

Stainless Steel Shell and Cover Plates
Coated Carbon Steel Shield Plugs
Stainless Steel/Aluminum Basket Assembly
Borated Aluminum, MMC, Boral Neutron Absorbers

Physical Data

Outside Diameter – 67.25 inches
Outside Length – 196 inches
Cavity Length – 179.5 inches
Weight, Empty – 45,700 lbs (Type 1)
Weight, Loaded – 88,700 lbs (Type 1)
Weight, Empty – 50,120 lbs (Type 2)
Weight, Loaded – 93,120 lbs (Type 2)
Crane Capacity – 100 tons

Intact & Damaged Fuel

Zircaloy Cladding Material
Max Initial Enrichment – 5.0 wt% U235
Min Initial Enrichment – 0.9 wt% U235
Min Cooling Time – 3 years
Max Burnup – 62 GWd/MTU
Max Uranium Content – 198 kg
Max Assembly Weight – 705 lbs
Max Assembly Length (unirradiated) – 176.5 inches

Damaged Fuel

Damaged BWR Fuel assemblies for storage in the 61BTH are fuel assemblies containing fuel rods (including assemblies with missing rods) with known or suspected cladding defects greater than hairline cracks or pinhole leaks. Missing cladding and/or crack size in the fuel pins is to be limited such that a fuel pellet is not able to pass through the gap created by the cladding opening during handling and retrievability is assured during Normal/Off-Normal conditions. Damaged fuel shall be stored with top and bottom caps for failed fuel. Damaged fuel may only be stored in the 2x2 compartments of the NUHOMS® 61BTH Canister.

Reconstituted Fuel

Maximum of 10 irradiated stainless steel rods per assembly and 4 reconstituted fuel assemblies per DSC.

Unlimited number of low enriched rods per assembly and 61 reconstituted fuel assemblies per DSC.

Failed Fuel

Up to 4 failed fuel assemblies encapsulated in Failed Fuel Can (FFC)

TN Americas

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