

NUHOMS® 37PTH Dry Shielded Canister

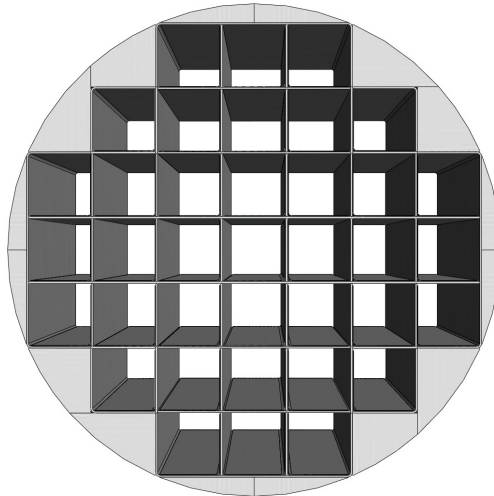
AREVA TN's NUHOMS® 37PTH Dry Shielded Canister (DSC) provides customers with a high-capacity, high-burnup system for PWR dry used fuel storage needs. The design is very similar to the already-designed, licensed, fabricated and in-operation NUHOMS® 32PT DSC. The 37PTH is designed to store and transport 37 PWR fuel assemblies with or without control components.

Damaged fuel that can be handled by normal means can also be stored in the 37PTH. The canister uses unique end caps to confine the assembly inside the basket cell.

This canister can be transferred in the NUHOMS® OSTC Series transfer casks with a 115 ton crane to gain the benefit of a fully shielded transfer cask. The 37PTH DSC is transferred in the horizontal orientation. The DSC is also stored in the horizontal orientation in the NUHOMS® HSM-H or HSM-HS concrete modules. It has been designed to be transportable in the modified version of the Transnuclear Multi Purpose High Burnup Transport Cask, the MP197. This transport cask is currently licensed under CoC 9302.

The 37PTH canister consists of a stainless steel cylindrical shell, top and bottom carbon steel shield plugs, inner and outer stainless steel bottom cover plates, inner and outer stainless steel top cover plates and the internal stainless steel basket assembly. The space between the inside diameter of the DSC shell and the fuel compartment grid assembly is bridged by aluminum "transition rails," which are connected to the fuel compartment structure. The basket is keyed to the shell and is therefore not allowed to rotate relative to the shell. Geometric spacing, soluble boron in the fuel pool and fixed neutron absorbers are used during storage to maintain criticality control. Geometric spacing, fixed neutron absorbers, burnup credit and moderator exclusion are used to maintain criticality control during transport.

All of the canister shell materials are ASME code materials and are used consistent with code requirements. The shell materials are resistant to corrosion and are not susceptible to other galvanic reactions. The 37PTH DSC incorporates the same NUHOMS® proven closure weld design that has been used in numerous loaded canisters in the U.S. to date.



About AREVA TN

AREVA TN, a division of AREVA Inc., 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 AREVA TN's used fuel storage or transport solutions, irradiated waste removal and processing, and pool to pad services.

As part of AREVA, the global leader in nuclear technology, AREVA TN offers the industry an unparalleled level of engineering, technical and logistics expertise.

AREVA TN's 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. AREVA TN customers include utilities, reactor operators, research reactors and the U.S. government.

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

Technical Features

Payload:

37 Intact including Reconstituted PWR Fuel Assemblies

Up to 4 Damaged PWR Fuel Assemblies

Control Components – BPRAs, TPAs, CRAs, RCCAs, APSRAs, ORAs, VSIs, NSAs, Neutron Sources, BLEU Fuel Material and Instrument Tube Tie Rods

Materials of Construction:

Stainless Steel Shell and Cover Plates

Coated Carbon Steel Shield Plugs

Stainless Steel Basket Assembly

Borated Aluminum, Boral®, MMC Neutron Absorbers

Physical Data:

Outside Diameter: 69.75"

Outside Length: 182" & 189.3"

Cavity Length, short: 164.4"

Cavity Length, long: 171.6"

Weight, Dry Loaded: 109,000 lbs

Intact Fuel:

Zircaloy Cladding Material

Max Initial Enrichment – 5 wt % U235

Min Initial Enrichment – 0.7 wt % U235

Min Cooling Time – 3 yrs.

Max Burnup – 62 GWd/MTU

Max Decay Heat – 1.2 kW/Assy

Max Heat Load – 30kW for Storage, 22kW for Storage

Max Uranium Content – 0.490 MTU/Assy

Max Fuel Assembly plus Control Component Weight – 1,665 lbs

Max Fuel Assembly plus Control Component Length (unirradiated) – 170"

Reconstituted Fuel:

Up to 10 irradiated stainless steel rods/assembly in maximum 4 assemblies per DSC

Unlimited number of lower enriched rods/assembly in maximum 37 assemblies per DSC

Features and Benefits

- High-capacity, high-burnup storage and transportable system for PWR dry used fuel needs
- Can store and transport 37 PWR fuel assemblies with or without control components
- Canister shell materials are ASME code materials and are used consistent with code requirements

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