



NUHOMS® EOS 37PTH DSC

Extended Optimized Storage

Orano TN's NUHOMS® Extended Optimized Storage (EOS) 37PTH Dry Shielded Canister (DSC) provides customers with a high-capacity, high-burnup, and high-heat load system for Pressurized Water Reactor (PWR) dry used fuel storage needs. The 37PTH DSC is designed to store and transport 37 PWR fuel assemblies.

The EOS 37PTH basket is constructed using alloy steel, aluminum, and metal matrix composite (MMC) plates configured into an egg crate design, allowing for a more cost-efficient fabrication. The compartment assemblies are connected to perimeter aluminum transition rail assemblies. Geometric spacing, fixed neutron absorbers, and soluble boron are used to maintain criticality control for enrichments up to 5.0% U235.

The EOS DSC shell can be fabricated of duplex stainless steel (Duplex SS). A recent analysis revealed that the use of Duplex SS in the fabrication of dry storage canisters will ensure the long-term safety of canister systems as the two-phase (austenite and ferrite) micro-structure of duplex stainless steel has a number of benefits. In addition, Duplex SS has a combination of alloying contents such as chromium, molybdenum,

nitrogen, and nickel that offer several advantages including enhanced mechanical properties and greater resistance to chloride-induced stress corrosion cracking, pitting, and crevice corrosion.

Duplex stainless steel (SS) has superior strength compared to austenitic stainless steels and offers better thermal performance. Duplex SS is used extensively in corrosive environments where there is exposure to high chloride content and high temperatures. It is a crucial component for the shipbuilding industry and is widely utilized in the mining industry and at nuclear plants.

The EOS 37PTH DSC is an optimized design for plants with minimum crane capacity of 125 tons and has a 108-ton option available. It is transferred in one of the new fully-shielded NUHOMS® EOS TC series Transfer Casks (TC). The EOS 37PTH DSC is stored in a horizontal configuration using the NUHOMS® EOS HSM concrete modules. The EOS HSM is a new and improved HSM-H with redesigned vents for a higher capacity heat load with the option of maintaining the same overall footprint. The EOS 37PTH DSC assembly incorporates the proven NUHOMS® welded closure design that has been used in numerous loaded canisters in the United States.

Technical Features

Max Payload: 37 PWR fuel assemblies

- Non-fuel assembly hardware
- Reconstituted fuel assemblies

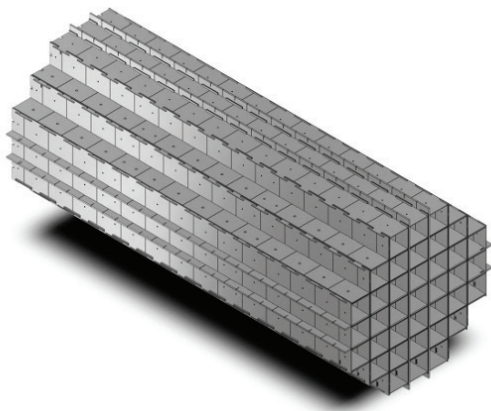
Materials of Construction:

- Stainless steel shell and cover plates
- Optional high corrosion-resistant steel shell
- Low alloy steel/aluminum/MMC egg-crate basket
- Coated carbon steel shield plugs

Physical Dimensions:

- Outside diameter: 75.5 In
- Outside length: Variable
- Cavity length: customized to fit fuel
- Weight, dry and loaded: 124,000 lbs

Intact fuel: Zirconium-based alloy cladding material



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Max initial enrichment:
5.0 wt% U235

Min initial enrichment:
0.7 wt% U235

Min cooling time:
2 years

Max burnup:
62 GWd/MTU

Max decay heat:
2.0 kW/assembly

Max heat load: 50 kW

Max uranium content:
492 kg/assembly

Max assembly weight:
1,750 lbs

Assembly length:
Variable

Benefits

Designed to meet PWR dry used fuel storage and transport needs

Optimal design for plants with crane capacity of 125 tons or larger (108-ton option available)

Leverages proven closure weld design

Customizable DSC length to fit any fuel assembly

Increased heat load capacity allows loading of shorter-cooled fuel

Highest PWR fuel assembly capacity reducing ISFSI footprint