

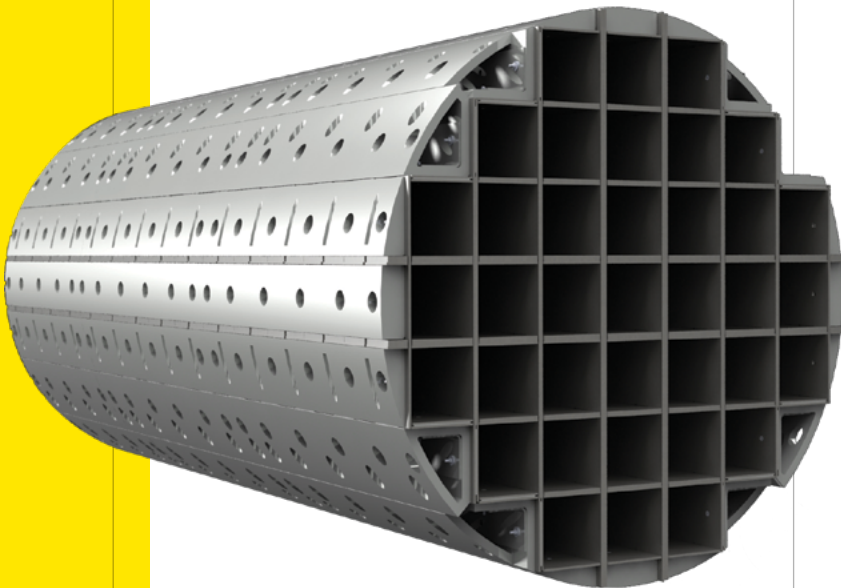


Orano TN

NUHOMS[®] EOS[®] 37PTH DSC

Extended Optimized Storage

The EOS 37PTH DSC provides customers with a high-capacity, high-burnup, and high-heat load system for Pressurized Water Reactor (PWR) dry used fuel storage needs.



Basket cross-section showing storage pattern

Orano TN's NUHOMS Extended Optimized Storage (EOS) 37PTH Dry Shielded Canister (DSC) is designed to store and transport 37 PWR fuel assemblies.

Designed for use at plants with minimum crane capacity of 125 tons (with a 108-ton option available), the DSC is transferred in a fully-shielded transfer cask, and stored in a horizontal configuration in the NUHOMS EOS HSM concrete module. The EOS HSM is an improved storage system with redesigned vents for a higher capacity heat load with the same overall footprint.

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% ²³⁵U.

The EOS DSC shell can be fabricated from three different types of stainless steel:

- **304 stainless steel** is widely used due to its excellent combination of corrosion resistance, formability, and weldability. It offers robust resistance against corrosive elements.
- **316 stainless steel** is used for enhanced resistance to chlorides, due to the addition of 2-3% molybdenum.
- **Duplex stainless steel (Duplex SS)** is composed of a mixture of austenite and ferrite phases in equal measure, making it a two-phase alloy, increasing its strength. In addition, the higher chromium and molybdenum content than 316, provides an even stronger protection against corrosion,

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.

BENEFITS

Highest PWR fuel assembly capacity, thereby reducing ISFSI footprint

Leverages proven closure weld design

Integrated hold-down ring reduces operation time

Customizable DSC length to fit any fuel assembly

Increased heat load capacity allows loading of shorter-cooled fuel

Technical Features

Max Payload: 37 PWR fuel assemblies

- Non-fuel assembly hardware
- Reconstituted fuel assemblies
- Intact, damaged or failed fuel

Materials of Construction:

- Stainless steel shell and cover plates
- Optional duplex stainless 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: 135,000 lbs

Intact fuel: Zirconium-based alloy cladding material

Max initial enrichment: 5.0 wt% ²³⁵U

Min initial enrichment: 0.7 wt% ²³⁵U

Min cooling time: 2 years

Max burnup: 62 GWd/MTU

Max decay heat: 3.5 kW/assembly

Max heat load: 50 kW

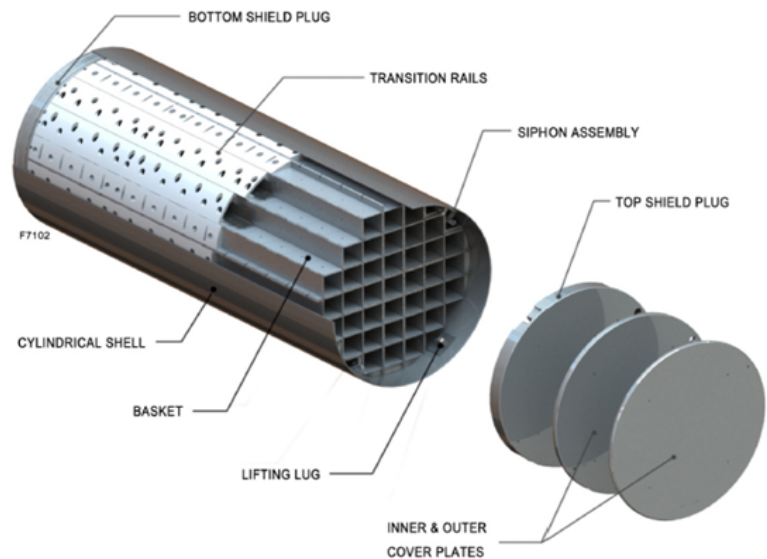
Max uranium content: 492 kg/assembly

Max assembly weight: 1,900 lbs

Assembly length: Variable



Discover our portfolio of packages for managing and transferring used nuclear fuel and materials, and for managing and transporting uranium.



Cutaway of 37PTH with parts labeled

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