

NUHOMS® EOS 37PTH DSC

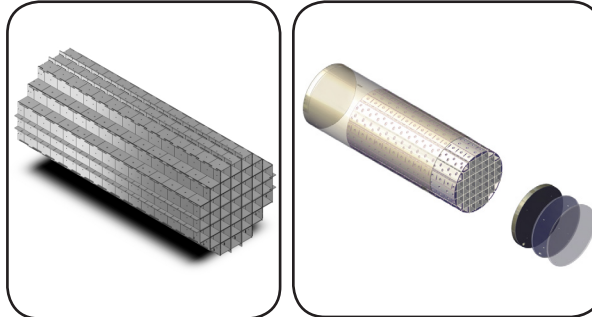
Extended Optimized Storage (EOS)

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

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.

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.

Features and 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

The EOS 37PTH DSC will be available in 2017 for storage under a new license and is also designed to be transportable.

Technical Features

Product Capabilities

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 & Loaded – 124,000 lbs

Intact Fuel

Zirconium-Based Alloy Cladding Material

Max. Initial Enrichment – 5.0 wt% U235

Min. Initial Enrichment – 0.7 wt% U235

Min. Cooling Time – 3 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

Variable Assembly Length

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.

AREVA TN

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