



Orano TN

# Horizontal Dry Storage

Modules

More than 1,500 of our dry fuel storage (DFS) systems have been successfully loaded at 32 sites in the U.S.

## BENEFITS

**Experienced** at different sites and configurations

**Earthquake Resistant** - up to 1.0 g horizontal and vertical acceleration

**Highest shielding** performance of any dry storage system in the U.S.

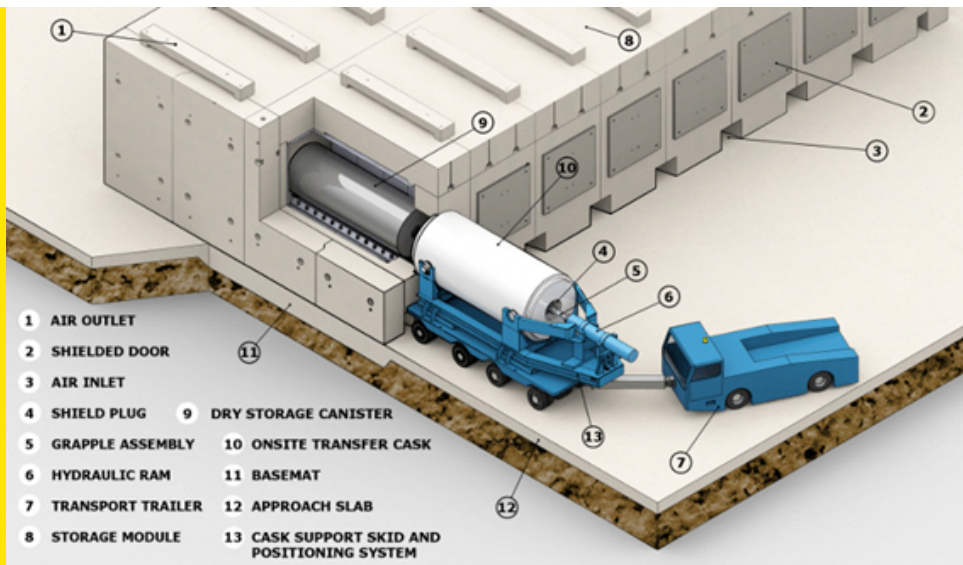
**Reduced risk** by using horizontal-to-horizontal transfer process

**Easy accessibility** allows for 100% inspection of stored canister surface and module

**EOS® HSM** - Higher heat rejection capabilities (50kW) than the HSM-H or HS, and designed for seismic accelerations of 0.45 g horizontal and 0.33 g vertical.

### Matrix® HSM (HSM-MX)

- A dual-level system that addresses space constraints, aging management concerns, dose rates, site excavation costs, and Beyond Design Basis events.



Cutaway of canister inside Horizontal Storage Module (HSM) after placement

Options for your specific needs:

**HSM-H** - Enhanced shielding performance, increased heat rejection capabilities (40.8 kW), and enhanced ruggedness for resisting acts of sabotage.

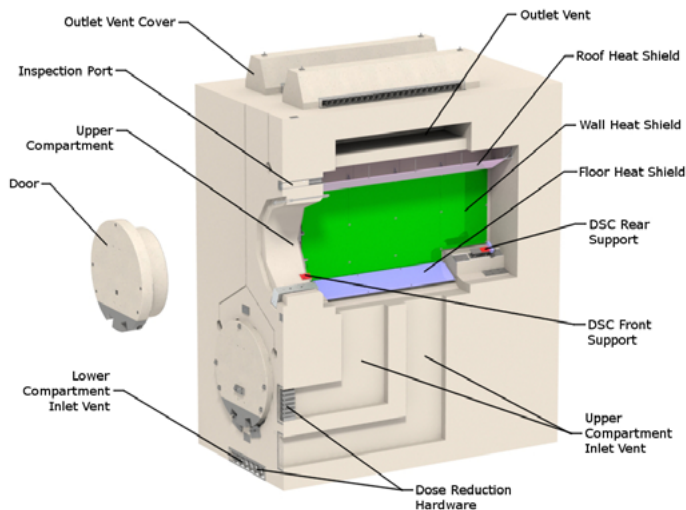
**HSM-HS** - A high seismic version of HSM-H, designed for sites with 1.0 g horizontal and 1.0 g vertical seismic accelerations.

## IDEAL FOR...

...any facility requiring a safe, stable, simple Independent Spent Fuel Storage Installation



Loading of (HSM-MX, which reduces your ISFSI footprint as much as 45 percent



The configuration of the NUHOMS Matrix module

## Highest Shielding

The self-shielding features of the HSM array results in dose rates that are lower by a factor of 5 or more compared to competing vertical systems. For example, to meet the NRC site boundary annual dose limit of 25 mrem, the EOS system estimates 1,150 ft, whereas the competing systems require 1,560 ft, or greater.

## Dry Shielded Canisters

NUHOMS® canisters are constructed using alloy steel, aluminum, and metal matrix composite (MMC) plates. Geometric spacing, fixed neutron absorbers, and soluble boron (for PWR) are used to maintain criticality control for enrichments up to 5.0% <sup>235</sup>U. The canister shells can be fabricated from three different types of stainless steel to account for varying corrosive environments.

## Earthquake Resistant

Orano's NUHOMS system has successfully withstood significant earthquakes. Its low profile, array structure, and horizontal position ensure stability. The NUHOMS system is the highest seismically qualified dry fuel storage system in the world.

## Flooding and Tornado Risks

Orano's NUHOMS system has safely operated through tornado events. Our impact design analysis criteria examples include withstanding the impacts of a 275 lb steel pipe traveling more than 105 mph, a 275 lb armor-piercing artillery shell at 125 mph, and a 4,000 lb. automobile traveling more than 133 mph (equivalent to a full-size pickup truck).

Even when submerged, Orano's robust NUHOMS dry storage system is designed to maintain its secure storage, stability, and cooling. [Watch video simulation.](#)



## Accessible and Retrievable

NUHOMS canisters are easy to retrieve and move due to their stable horizontal orientation. This allows for lower doses during the fuel loading process, as it takes less time to move the canister, and makes it easy to retrieve to transport off site.

[Watch a complete inspection](#) of the NUHOMS module and canister.



Orano TN offers a variety of [Dry Shielded Canisters](#) for the storage of high-capacity, high-burnup, and high-heat load systems, and are compatible with the HSM systems.



Rocco Catanzarite  
VP Sales & Marketing

Orano TN  
7160 Riverwood Drive, Suite 200  
Columbia, MD 21046 USA  
+1 (410) 910 6915  
rocco.catanzarite@orano.group  
www.orano.group/usa

