



NUHOMS[®] EOS[®] HSM

The EOS HSM provides reinforced horizontal storage modules (HSMs), with increased heat rejection capabilities, additional shielding, and enhanced ruggedness.



Getting ready to load canister from transfer cask into HSM.

Orano TN's NUHOMS Extended Optimized Storage (EOS) dry used fuel storage system is an upgraded version of the horizontal storage module (HSM-H), currently deployed at a number of independent spent fuel storage installation (ISFSI) sites around the country.

The EOS-HSM is designed for sites with 0.45 g horizontal and 0.33 g vertical seismic accelerations.

BENEFITS

No critical lifts at the ISFSI

Superior seismic capabilities (0.45 g horizontal and 0.33 g vertical seismic accelerations)

Increased heat rejection capabilities - up to 50 kW - the highest in the industry

Enhanced ruggedness for resisting acts of sabotage

Manufacturing off-site eliminates major on-site construction

Enhanced aging management capabilities

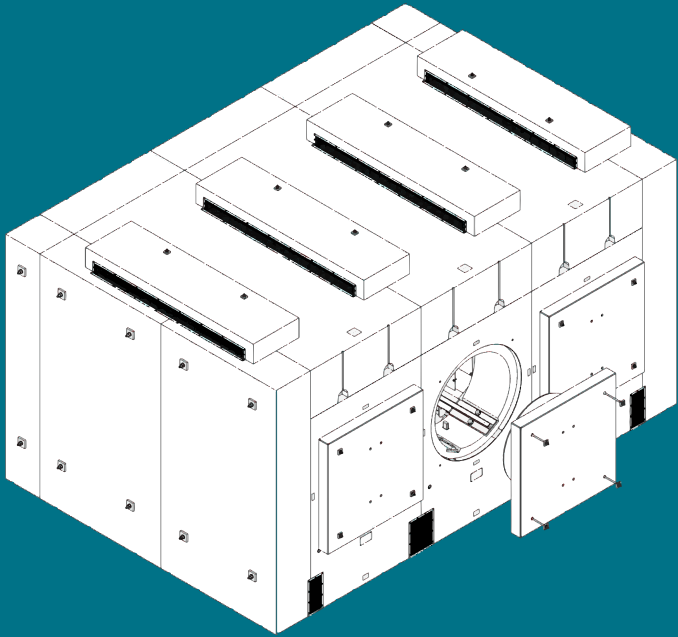
Can be used for both GTCC and LLW

For offsite manufacturing, each module is constructed in two or three pieces, which are delivered separately and installed at the ISFSI. Manufacturing is done at Orano's facility in North Carolina. This minimizes the impact on customer sites.

The client can also opt to manufacture and assemble the units onsite, thereby eliminating transportation costs.

Each HSM is provided with internal heat shields, shield door and dry shielded canister (DSC) support structure. The HSMs are arranged in an array on the ISFSI Pad which consists of a reinforced concrete base mat on compacted engineered fill. The ends of the array include shield walls to keep dose rates as low as reasonably achievable (ALARA). An optional feature of the HSM is the addition of the dose reduction hardware to the inlet and outlet vents to further reduce dose rates.

The unique design of the HSM allows the canister to be transferred and stored without performing a single critical lift at the ISFSI during initial loading, or later when unloading to ship offsite to a DOE repository.



Ambient air enters the EOS HSM through ventilation inlet openings on both sides of its lower front wall. Air exits through outlet openings on each side of the top. The passive cooling system preserves fuel cladding integrity by maintaining spent fuel assembly peak cladding temperatures below acceptable limits during long-term storage.

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Technical Features

There are possible three lengths for the EOS HSM module, depending on the length of the canister being stored.

Payload: EOS-37PTH and EOS-89BTH

Materials of Construction

- Reinforced concrete
- Carbon steel
- Corrosion resistant coatings
- Stainless steel wire mesh screens

Physical Data

- Width: 116"
- Length: 228"/248"/268"
- Height: 222"
- Adjacent modules are in contact with each other

Maximum canister length: 179.5"/199.5"/219.5"

Weight, empty: 311,000 lbs / 334,000 lbs / 351,000 lbs

Weight of Dry Storage Cask + Fuel:
~124,000 lbs

Design Parameters

Maximum heat load: 50.0 kW

Maximum ambient temperature: 117°F

Minimum ambient temperature: -40°F

Horizontal seismic accelerations at site: 0.45 g

Vertical seismic accelerations at site: 0.33 g

Maximum Flood: 50 feet at 15 fps

Tornado Wind: 360 mph

Missile impact: 750lb @ 105mph steel pipe,
275lb @ 125mph armor-piercing artillery shell,
4000 lb @ 133 mph automobile (equivalent to a
full size pickup truck)

Licensed under NRC CoC #1042

Scan the QR code for
additional information
on Orano's Dry Fuel
Storage systems

