



FOR IMMEDIATE RELEASE

## Orano's NUHOMS EOS System Approved for Storing Used Nuclear Fuel with Higher Enrichments, Higher Heat Loads, and One-year Cooling

*Confirmed capabilities provide enhanced cost-saving and flexibility options for transferring used nuclear fuel from wet to dry storage.*

BETHESDA, Md., July 11, 2023 – Orano received approval from the Nuclear Regulatory Commission for Amendment No. 3 of the NUHOMS® EOS® Dry Spent Fuel Storage System Certificate of Compliance No. 1042, which will become effective on July 17, 2023. Orano's dry storage systems for used nuclear fuel now offer greater flexibility, efficiency, and significant life cycle cost-savings. The Amendment 3 application was originally submitted March 31, 2021, with a final supplement submitted December 21, 2022.

Approval of this Amendment 3 certifies an expanded range of significant capabilities for Orano's NUHOMS Extended Optimized Storage (EOS) used nuclear fuel dry storage system and its components.

"Approval of this Amendment opens many new possibilities for utilities to transfer their used fuel inventories more rapidly and efficiently into our NUHOMS dry storage system, which will translate into more cost-effective used fuel pool management and decommissioning," said Amir Vexler, CEO of Orano USA. "Used fuel cooling times reduced to one-year and higher enrichment levels enable earlier transfer of used fuel from cooling pools to secure dry storage, plus handling a wider range of reactor fuel types."

The enhanced capabilities approved by Amendment 3 include:

- **EOS 89BTH Dry Shielded Canister (DSC)**
  - reduced the minimum cooling time from two years to one year for the transfer of used nuclear fuel assemblies from a reactor pool to dry storage using the EOS 89BTH canister with three new, innovative fuel loading configurations enabling increased heat load for each fuel assembly up to 1.7 kW for a maximum heat load of 48.2 kW per canister
  - incorporated a method to increase flexibility in developing heat loading configurations, in particular when performing full-core offloads of shutdown reactors
  - added ATRIUM 11 used fuel as allowable content for storage
  - increased initial enrichment limits for storing GNF2 and ABB-10-C used fuel
  - increased initial enrichment limits for individual fuel assemblies by allowing fewer than the maximum of 89 fuel assemblies to be loaded while remaining below the canister's combined total enrichment limit

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- added the use of variable-lead thickness to the EOS transfer cask enhances ability to control weight while maintaining shielding performance
- **EOS 37PTH Dry Shielded Canister (DSC)**
  - reduced time limit to eight hours for transfers to heat loading zone configuration (HLZC) 1 and 2, and longer transfer time limits can be calculated based on the actual heat load
- **MATRIX®** two-tiered dry storage system
  - confirmed the MATRIX lift crane's single-failure-proof handling capabilities and required procedures for expanded transfer cask lifting heights and weather conditions
  - enhanced seismic design features for the MATRIX Loading Crane

Orano's NUHOMS EOS 89BTH and 37PTH dry shielded canisters provide customers with a high-capacity, high-burnup, and high-heat load dry storage system for used nuclear fuel from boiling water reactors (BWR) and pressurized water reactors (PWR), respectively.

The 89BTH is designed to store 89 BWR fuel assemblies, which are long, rectangular bundles of metal rods containing stacked ceramic used nuclear fuel pellets. The 37PTH DSC is designed to store and transport 37 PWR fuel assemblies with or without channels.

[EOS used fuel canisters](#) are efficiently and securely transferred in a horizontal configuration and stored in horizontal NUHOMS EOS concrete modules, including the [two-tiered MATRIX](#) that reduces footprint requirements by as much as 45% when compared to other dry storage technologies.

Orano's NUHOMS EOS canisters are manufactured at the TN Fabrication facility in North Carolina. The NUHOMS concrete storage modules are constructed at the Moyock facility in North Carolina or poured onsite with local labor.

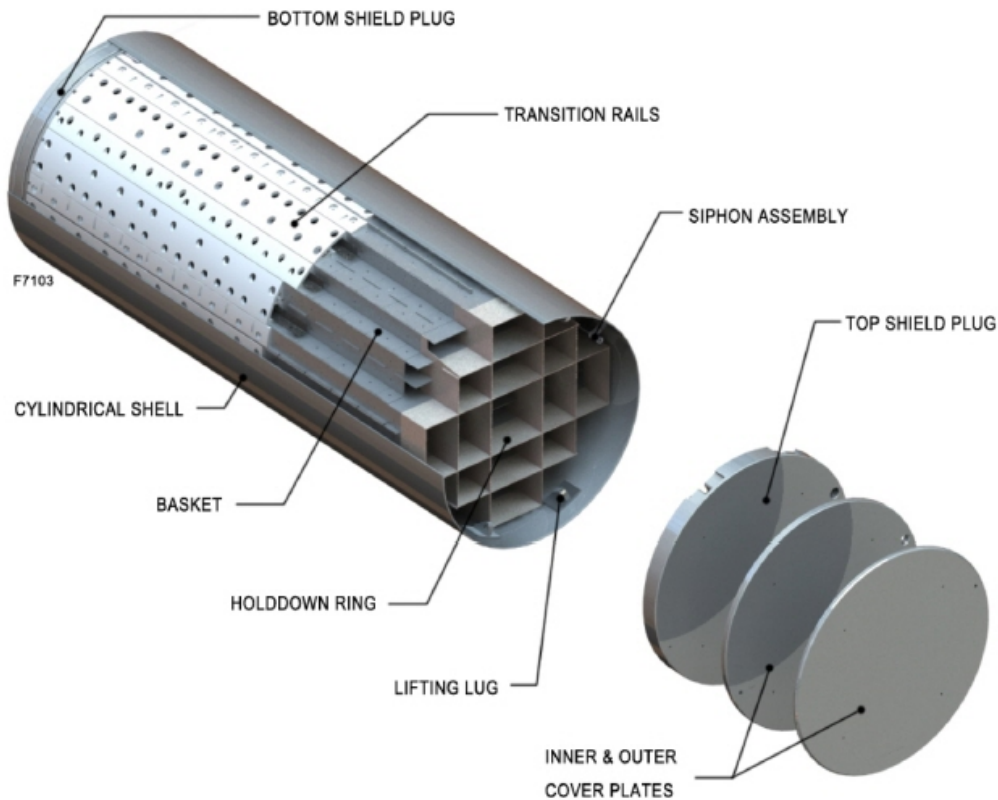
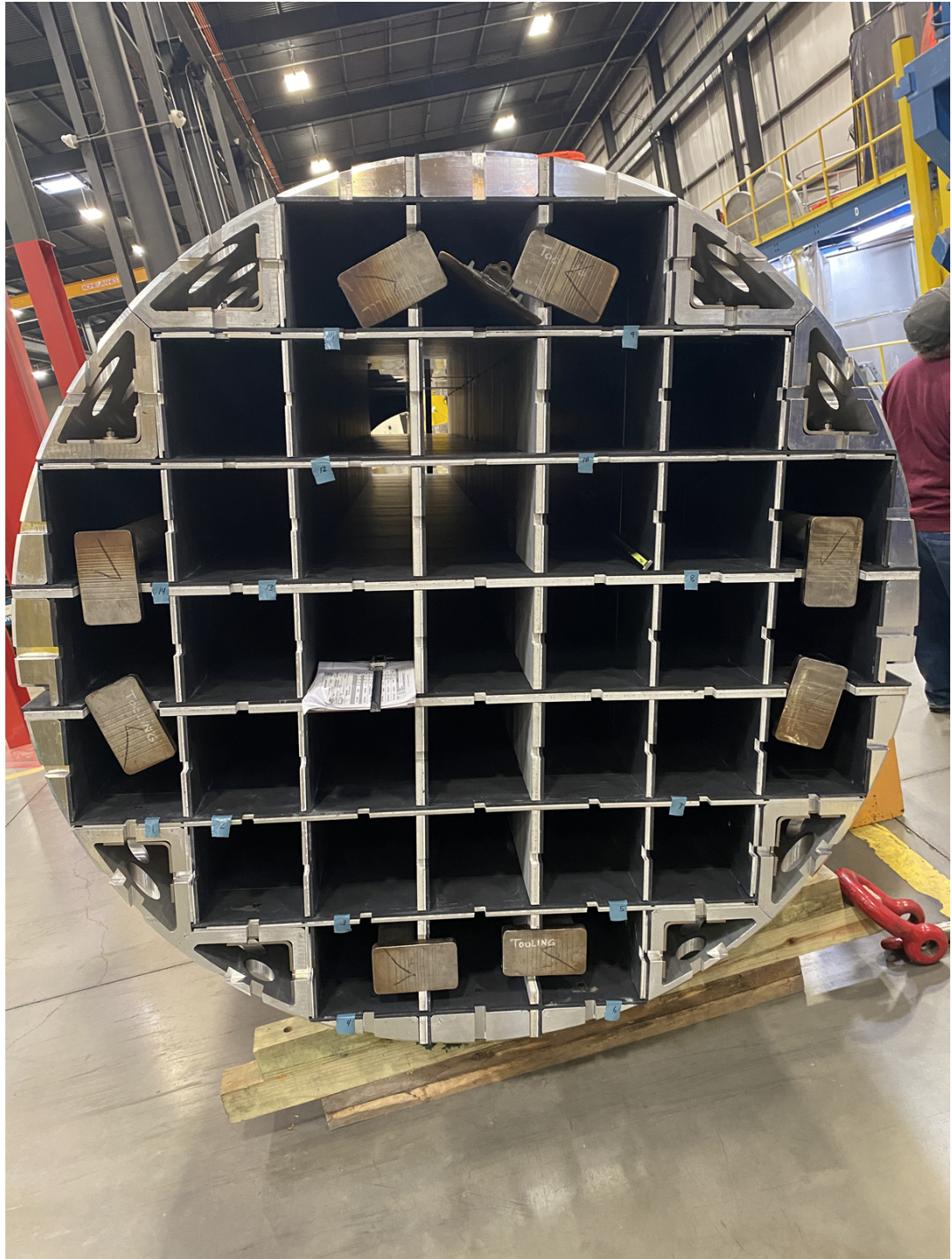
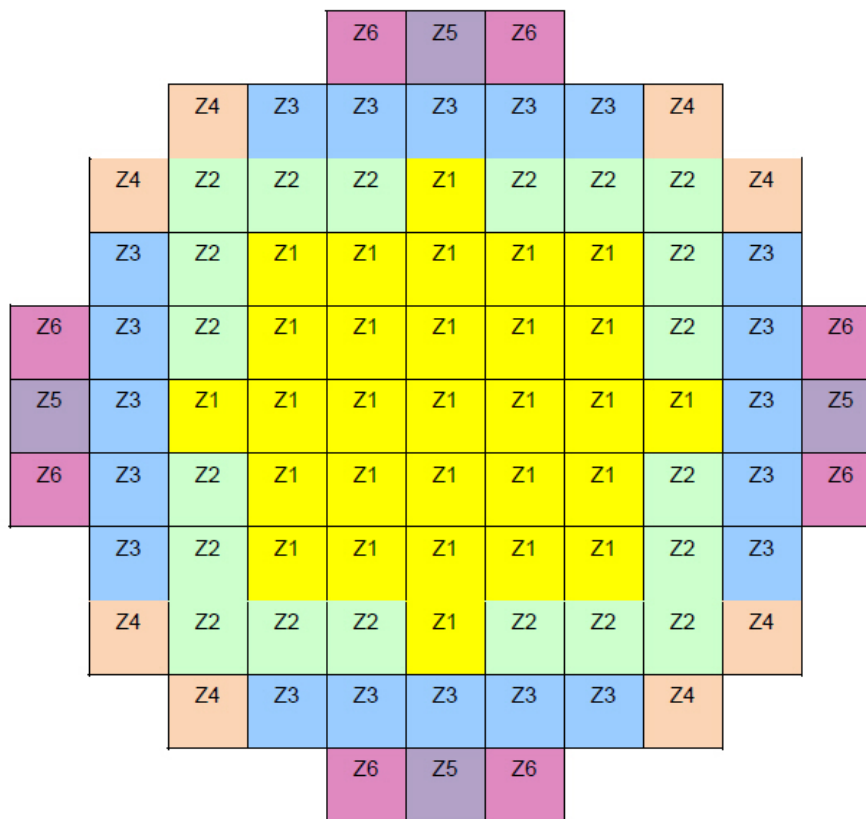


Image: Diagram of a NUHOMS EOS 89BTH dry shielded canister.



*Image: An Orano NUHOMS EOS 37PTH canister basket during manufacturing at the TN Fabrication facility in Kernersville, NC, showing the internal grid structure for holding the used nuclear fuel assemblies.*



Zone No.	Z1	Z2	Z3	Z4	Z5	Z6
Max. Decay Heat per SFA (kW)	0.40	0.60	1.30	1.70	1.30	1.70
No. of Fuel Assemblies	29	20	20	8	4	8
Heat Load Per Zone	11.6	12.0	26.0	13.6	5.2	13.6
Max. Decay Heat per DSC (kW)	See Note 1 for EOS-HSM and Note 2 for HSM-MX					

Notes:

1. Maximum heat load for EOS-89BTH DSC during Storage is 48.2 kW in EOS-HSM.
2. Maximum heat load for EOS-89BTH DSC during Storage is 48.2 kW in lower compartment of HSM-MX and 41.8 kW in upper compartment of HSM-MX.

*Image: The new NUHOMS EOS 89BTH heat load zone configuration (HLZC) showing maximum range for each used fuel assembly slot.*

**About Orano USA:** Orano USA, a regional subsidiary of Orano, is a leading supplier of nuclear fuel materials, used fuel management, decommissioning, decontamination, radwaste treatment solutions, and advanced reactor services to U.S. commercial and federal customers. Orano USA, through its subsidiary Orano Med in Texas, is also developing cancer treatments using targeted radio-immunotherapy, with its drugs currently in FDA-authorized clinical trials. <https://www.orano.group/usa>

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