

NAC'S MAGNASTOR® – PATENTED DRY CASK STORAGE EXCELLENCE

JUNE 2022

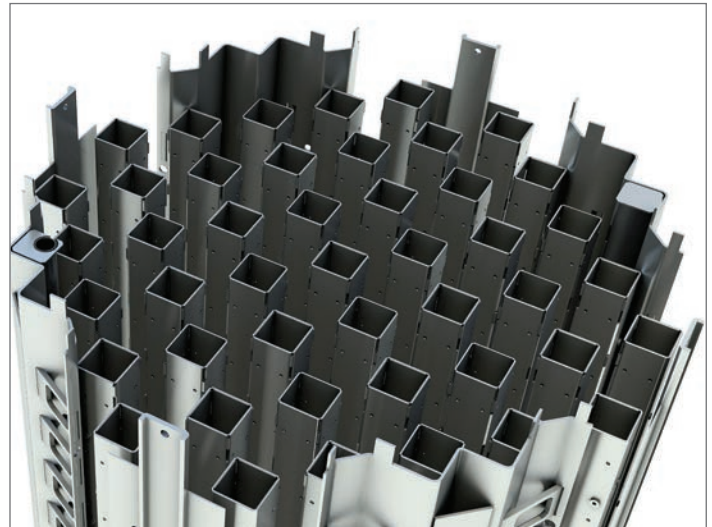
KEY FEATURES

- A developed-cell basket design that provides excellent fuel capacity and simplifies fabrication, while providing high strength and excellent heat removal
- Similar weight and dimensions to lower capacity systems, allowing a smooth transition option that does not challenge existing fuel loading infrastructure
- Vertical tube design with fewer horizontal gaps and water retention areas
- A proven effective and efficient approach to canister water removal and drying (for recent campaign – average drying time ~ 5 -7 hours)
- A unique canister closure design that optimizes welding time and reduces personnel dose
- A vertical concrete cask design, minimizing site dose rates, with enhanced on-site handling; uses proven, simple construction methods and has validated robustness against beyond-design-basis threats
- A multi-campaign proven transfer system that simplifies canister loading safely with minimal occupational dose

Refining operational experience to deliver ingenuity: MAGNASTOR: PWR - 21 tubes create 37 slots; BWR - 45 tubes create 89 slots!

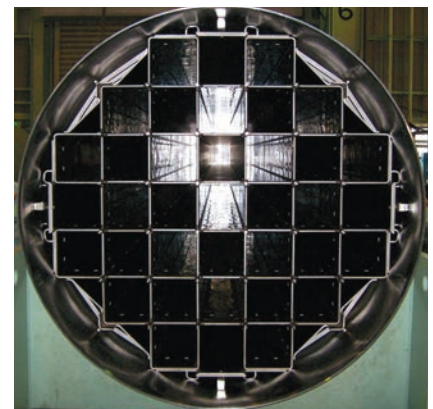
DESIGN SAFETY AND EFFICIENCY

- Safety: streamlined design and operations minimize and automate pool- to-pad activities to promote worker safety.
- MAGNASTOR accommodates a wide range of spent fuel heat loads. Compact fuel storage maximizes spent fuel self-shielding and minimizes streaming, while maintaining ALARA concepts for loading operations and off-site dose.
- Decommissioning cost savings: Optimized fuel loading plans enable quicker spent fuel pool offloads, equating to millions of dollars in savings.
- MAGNASTOR's regional loading permits a mixture of older-colder fuel alongside newer-hotter fuel to allow earlier



MAGNASTOR: less fuel tube metal, thus lighter and more suitable for lower crane capacities and existing layouts.

Top photo: BWR basket. **Middle photo:** Vertical concrete casks. **Bottom photo:** PWR canister and basket.



CONTACT:

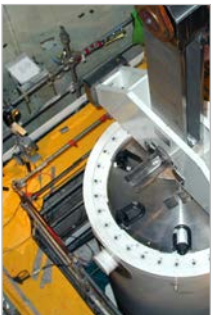
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fuel storage operations, providing pool emptying acceleration at shutdown sites.

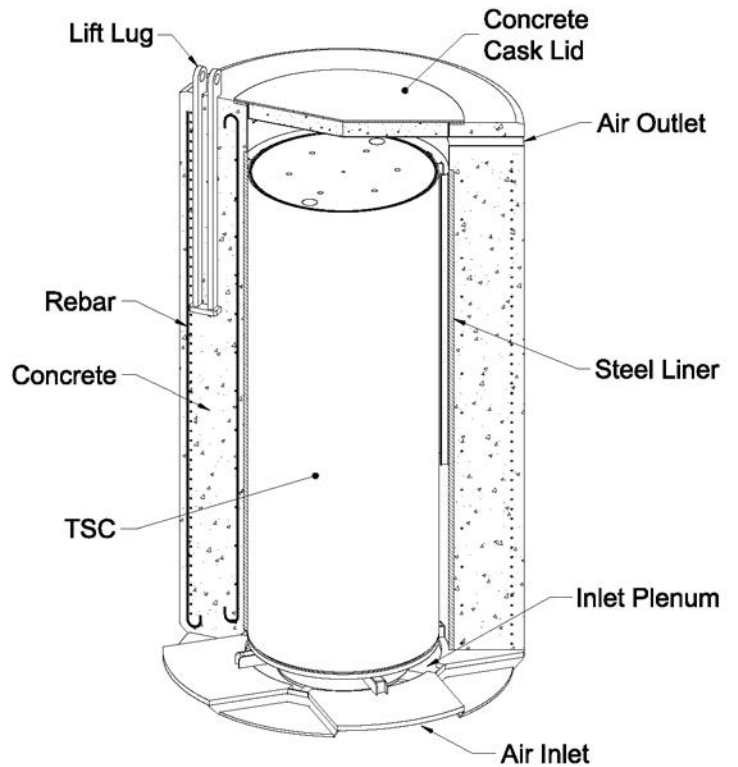
- MAGNASTOR's loading and transfer operations, has proven to streamline processing times; recent pad-to-pad activity was completed for a 37-assembly system in less than 2 days!

Industry Workhorse: Over 200 MAGNASTOR Dry Storage/Transport Systems Loaded

NAC INTERNATIONAL— RELIABILITY ASSURED



VERTICAL CONCRETE CASK COMPONENTS



GENERAL MAGNASTOR SPECIFICATIONS

Fuel-Specific Data	PWR / BWR
Maximum Assembly Capacity:	37 (37 DF – 4DF) / 89 (81DF – 12 DF)
Thermal Capacity Under Amendment Review:	Storage: 42.5 kW / 42 kW
Fuel Cool Time for Rapid Offload:	Storage: ~ 2 years; regional loading patterns support accelerated offloads
Fuel Initial Enrichment:	5.0 wt % / 4.7% wt % U-235 maximum
Fuel Burnup (Assembly Average):	60 GWD/MTU maximum
Key System Dimensions	PWR / BWR
VCC Length:	Standard: 225 inches Segmented Body: 210 inches
VCC Outer Diameter:	136 inches
Canister Cavity Length:	Type 1/3 – 173 inches Type 2/4 – 180 inches
Internal Cavity Diameter:	71 inches
Overall Canister Length:	Type 1/3 – 173 inches Type 2/4 – 180 inches
Canister Shell Thickness:	0.5 inches
Weight on Crane Hook:	< 100 tons with Lightweight MAGNASTOR Transfer Cask (LMTC) up to 120 tons
Maximum Weight on ISFSI Pad:	160 tons / 161 tons

Currently six (6) MAGNASTOR CoC Amendments underway increasing optionality