

# NAC'S MAGNASTOR® – PATENTED DRY CASK STORAGE EXCELLENCE

## 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!

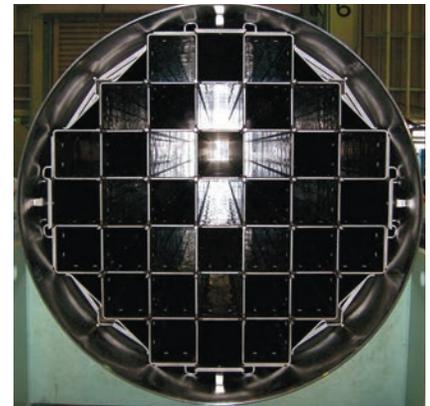
## DESIGN SAFETY AND EFFICIENCY

- 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.



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

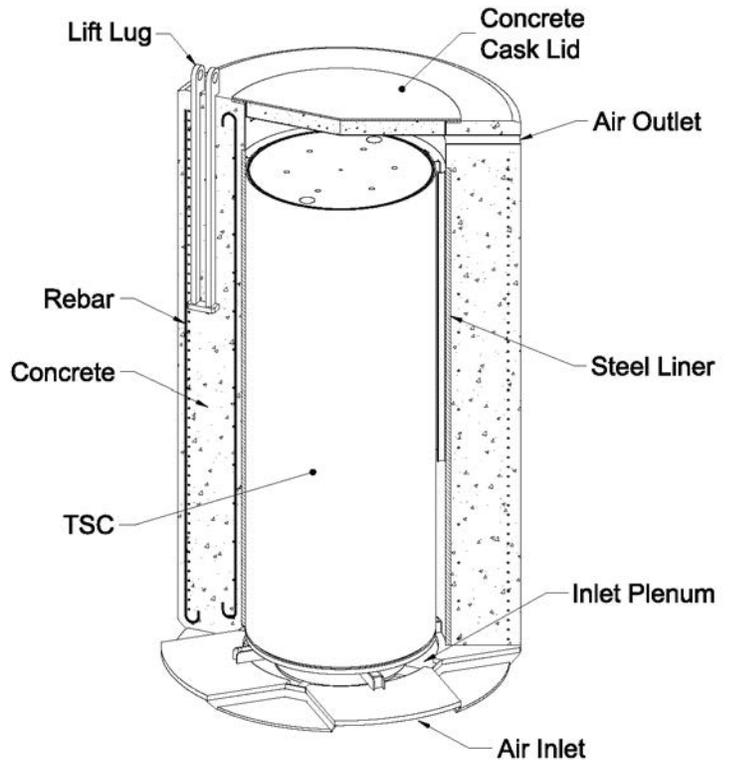
- MAGNASTOR's loading and transfer operations, has proven to streamline processing times; recent pad-to-pad activity was completed for a 37-assembly system in less than 2 days!

# 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<br>Segmented Body: 210 inches                         |
| VCC Outer Diameter:                      | 136 inches   |
| Canister Cavity Length:                  | Type 1/3 – 173 inches<br>Type 2/4 – 180 inches                             |
| Internal Cavity Diameter:                | 71 inches  |
| Overall Canister Length:                 | Type 1/3 – 173 inches<br>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