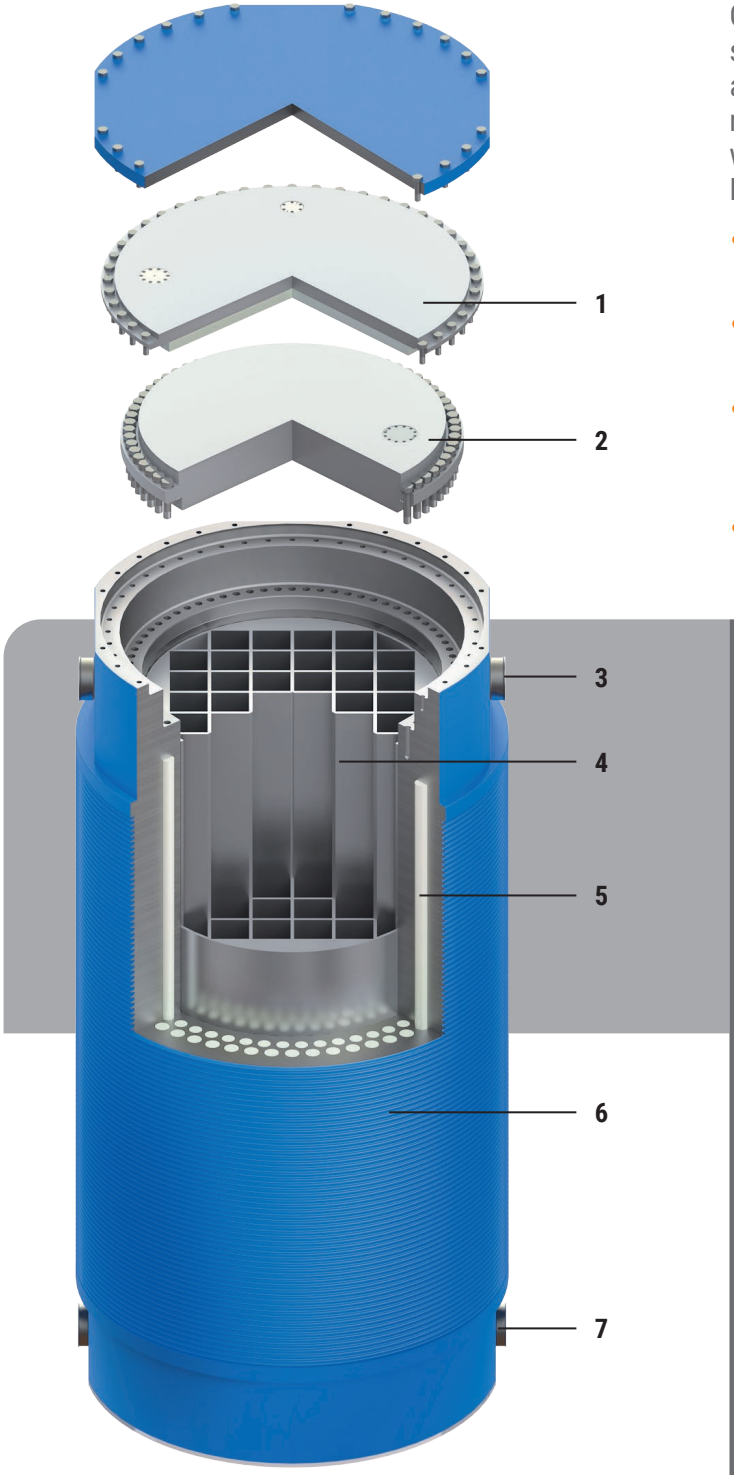
CASTOR® geo

Transport and Storage Cask System
for Spent Fuel



CASTOR® geo is the versatile dual-purpose cask system by GNS. Based on well-proven components and state-of-the-art processes this system easily meets the individual requirements of customers worldwide for storage and transport of both PWR- and BWR-fuel assemblies.

- Dual purpose cask with a modular design for perfect adaption to individual needs
- Load & Go and Store & Go – No overpack required for transport and storage
- No risk of chloride induced stress corrosion cracking due to absence of welding seams, unlike competing canister based concrete cask systems
- Based on over 40 years of experience and the proven design principle of the CASTOR® family

CHARACTERISTICS

CASTOR® geo casks are able to accommodate up to 37 PWR-FA or 69 BWR-FA with a maximum initial enrichment of approx. 5 wt-% ^{235}U, up to 74 GWd/MTU average burn-up and more than 40 kW heat load. Options for the dry storage of MOX fuel are also available.

The cask weight in handling configuration is optimized in accordance with internationally established crane capacities and can be further customized to individual needs. A high degree of standardization allows for savings for instance related to handling equipment and training measures as well as licensing procedures.

DESCRIPTION

A monolithic cask body [6] made of ductile cast iron with machined cooling fins to improve the heat removal and deep-drilled bore holes filled with polyethylene as neutron moderator [5].

A bolted double lid system – the primary lid [2] and the secondary lid [1] – with metal seals and a permanent pressure monitoring of the interspace for proof of leak tightness. Trunnions for handling and lifting [3, 7].

The high capacity basket inside the cask cavity accommodates the fuel assemblies and supports heat dissipation and subcriticality [4].

The cask cavity is dried and filled with helium.

Excellence for **Nuclear.**

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REFERENCES

For the Belgian nuclear power plants Doel and Tihange GNS has designed and delivers the cask types CASTOR® geo24B and CASTOR® geo21B for 24 and 21 PWR FA respectively. The first CASTOR® geo24B has been loaded in 2024.

For nuclear power plants in Switzerland GNS delivers CASTOR® geo32CH for 32 PWR FA and CASTOR® geo69CH for 69 BWR FA .

The CASTOR® geo69 for 69 BWR FA has received its 10 CFR71 license from the NRC. It features a canister system for defueling of NPP with limited crane capacities.

The application for approval of the CASTOR® geo26JP designed for 26 PWR FA for the Japanese market has also been submitted.

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