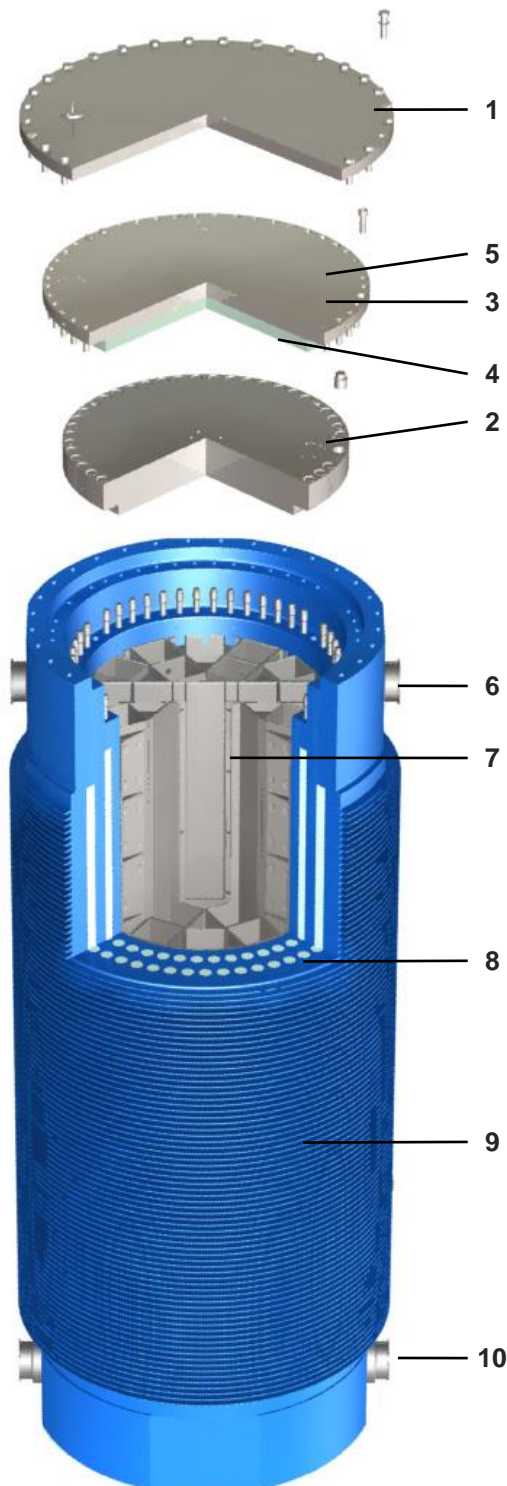


CASTOR[®] V/19

Transport and Storage Cask for Spent Fuel (PWR)



DESCRIPTION

The CASTOR[®] V/19 cask is designed for the transport and storage of spent fuel assemblies from pressurized water reactors (PWR).

The cask consists of a monolithic body [9] made of ductile cast iron, a basket [7] for accommodating the fuel assemblies and a double-lid system (primary and secondary lid arranged one above the other [2, 5]) as well as a protection plate [1].

On the outside wall, radial cooling fins are machined to improve the passive heat dissipation. The double-lid system made of stainless steel is tightly bolted to the cask body guaranteeing a safe long-term containment of the fuel assemblies. During interim storage the lid system consisting of the two barriers is permanently being monitored for leak-tightness. Monitoring is performed by a pressure switch [3] which is integrated in the secondary lid.

For neutron moderation, axial boreholes are drilled into the cask wall and filled with polyethylene moderator rods [8]. In addition, there are plates of polyethylene at the bottom end and on the underside of the secondary lid [4].

At the bottom and lid end of the cask body, one pair of trunnions [6, 10] each is bolted for attachment of handling equipment. For transport on public routes the cask can be equipped with shock absorbers.

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LICENSES

The CASTOR[®] V/19 has the necessary licenses for transport, long-term interim storage as well as for handling in nuclear facilities.

The design complies with the international regulations from the IAEA (International Atomic Energy Agency) for type B(U)F package designs for the transport on public transport ways (roads, rail, shipping).

REFERENCES

More than 300 CASTOR[®] V/19 casks in whole have been manufactured so far, around 110 in the new design as per the IAEA regulations of 1996.

220 casks in the old design and around 40 in the new design have been loaded in German PWR sites such as Biblis, Brokdorf, Emsland, Grafenrheinfeld, Grohnde, Isar, Neckarwestheim, Philippsburg and Unterweser and are being stored in their on-site interim storages as well as in the GNS interim storage facilities at Ahaus and Gorleben (GER).



TECHNICAL DATA

Cask Contents

- Up to 19 spent fuel assemblies from PWR (total length max. 4950 mm, edge length max. 233 mm)
- Total thermal power: 39 kW
- Total activity: 1900 PBq

Dimensions and Weights in the Storage Configuration

- Overall height: 594 cm
- Outer diameter: 244 cm
- Cavity height: 503 cm
- Cavity diameter: 148 cm
- Cask weight empty: ≈ 108 t