Transport and Storage Cask CASTOR®

Long-term behaviour of CASTOR® components and testing after long-term storage before shipment

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Abstract

It is well known that CASTOR® casks are suitable for the long term storage of spent nuclear fuel without losing its stipulated properties of leak tightness and radioactive safety and no fact exists that makes a dry storage in CASTOR® casks for a period of approx. 100 years impossible. After such a long term storage the transportability of casks must be ensured. In different stages different influences of the long-term behaviour and the transportability of a cask after long-term storage exists. CASTOR®-casks are able to fulfil both: the requirements for a long-term storage and the requirements before shipment after long-term storage. In the poster these influences in the different stages and also their consequences are pointed of.

In particular the effects on the cask components which form the leaktight confinement of the cask and ensure the shielding ability of the cask are regarded. These cask components are:

- Cask body with sealing areas
- Neutron moderator
- Primary and secondary lid with additional closure lids
- Pressure switch in the secondary lid (if needed)
- Metal seals in the primary , secondary and closure lids
- Screws of the primary, secondary and closure lids

Apart from the components of the leaktight confinement, the trunnions and trunnion screws also have to maintain their function during the storage period so that their long term stability must also be regarded.

The poster shows the stages and the influences that to take into consideration to ensure the transportability of the transport- and storage cask CASTOR®.