

NEW CASK FOR TRANSPORTATION OF IRRADIATED RODS

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ABSTRACT

The TNTM MIL will be a new B (U) F packaging, meeting AIEA 1996 regulations, and will be used for transport of at least 10 whole irradiated fuel (UO₂ and / or MOX), damaged or not, in capsules or not.

The fuel characteristics of the rods will be:

	MOX	UO ₂
Maximal burn up	90 000 MWd / t heavy metal	90 000 MWd / t heavy metal
Minimum cooling time	6 months	6 months
Maximal enrichment (in mass)	At least 11 % [Pu / (U+Pu)]	At least 5% (²³⁵ U / U)

Each fuel rod in the packaging may have these characteristics. Moreover, the TNTM MIL design will accept a mixture of MOX and UO₂ rods without any loading plan.

TNTM MIL packaging will enable both dry or wet loading and unloading, either in vertical or horizontal position, in order to meet the needs or requirements of Research Reactors or Laboratories, and power plant. Its maximal weight will be under 24 tons (loaded packaging), in order to be adapted for the greater part of laboratories.

For transport purpose, the TNTM-MIL will be tied-down by 4 trunnions on a transport skid, and will be loaded into an ISO container or inside a tarpaulin.

2 shock absorbers will be fixed on the package in transport configuration.

The outer dimensions of the package will be:

External diameter of the body less than 1000 mm excluding the trunnions, without the shock absorbing covers;

Overall length will be less than 7000 mm with the shock absorbing covers, and less than 5500 mm without shock absorbing covers.

The internal diameter will be around 165 mm and will have the possibility to be adapted to 220 mm. The useful cavity length will be around 4 700 mm.

The loaded weight of the packaging will be less than 24 tons. The maximal weight of the internal arrangements loaded with the rods will be around 300 kg.

Principle terms of development are:

Submittal of the safety analysis report to French Competent authorities: before the end of 2006.

First transport: before the end of 2007.

See also the presentation, which is part of the paper.