



DN30-X PACKAGE FOR THE TRANSPORT OF HALEU < 20% ENRICHMENT

- PUBLIC -



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US-NRC / DNT / TLI
Washington D.C.



TOPICS

Introduction of participants

1. Recap

2. Design of the DN30-X package

2.1 New concept

2.2 The DN30 PSP

2.3 The 30B-X cylinder

2.4 CCS of the 30B-X cylinder

3. DN30-X safety proof

3.1 Overview and similarities of DN30 and DN30-X

3.2 Structural analysis

3.3 Criticality analysis

4. Licensing schedule and next steps

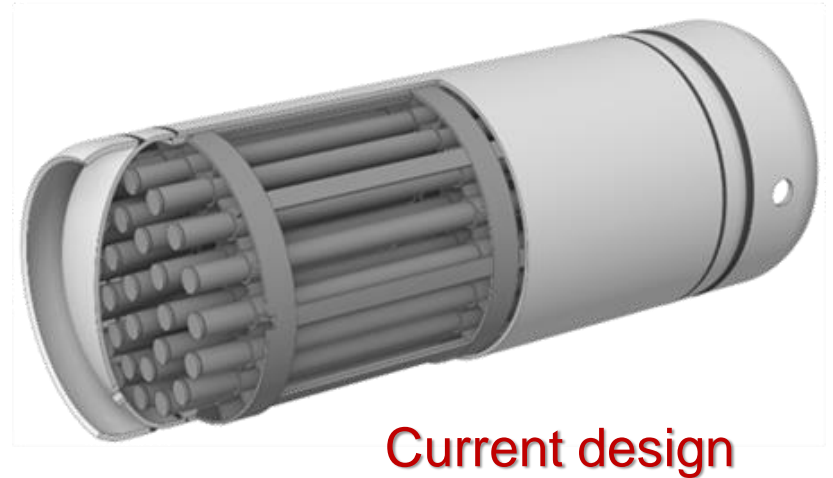
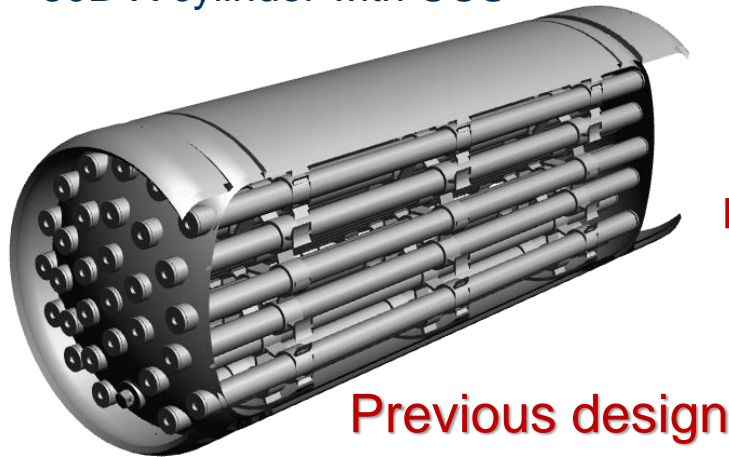
RECAP

■ Context

- New industry demands for higher enrichments (SMR and HALEU projects)
- Cylinders defined in ANSI N14.1 (5B, 8A, 30B)

■ Solution: DN30-X package

- DN30 PSP
- 30B-X cylinder with CCS



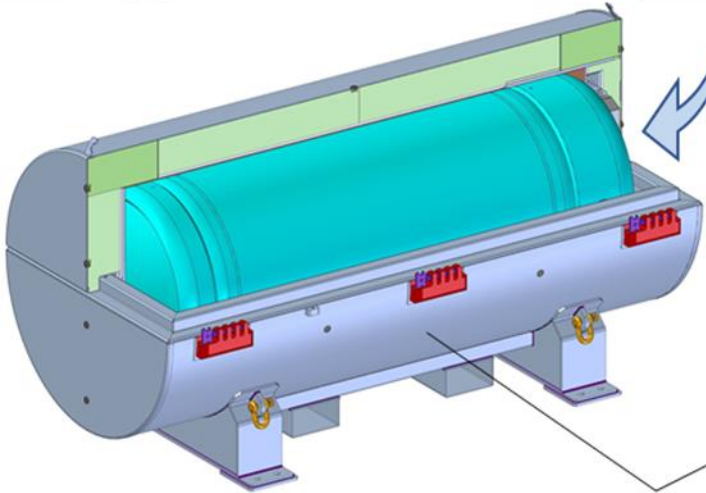
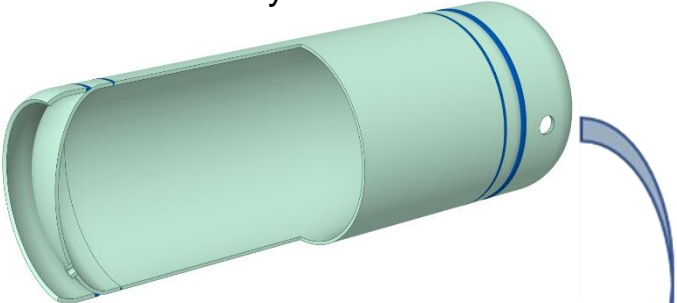
■ Safety proof updates since 1st pre-application meeting in June 2020

- Structural analysis (takes current design into account)
- Criticality analysis: benchmark evaluation with TSUNAMI

DESIGN OF DN30-X: NEW CONCEPT

Concept for DN30

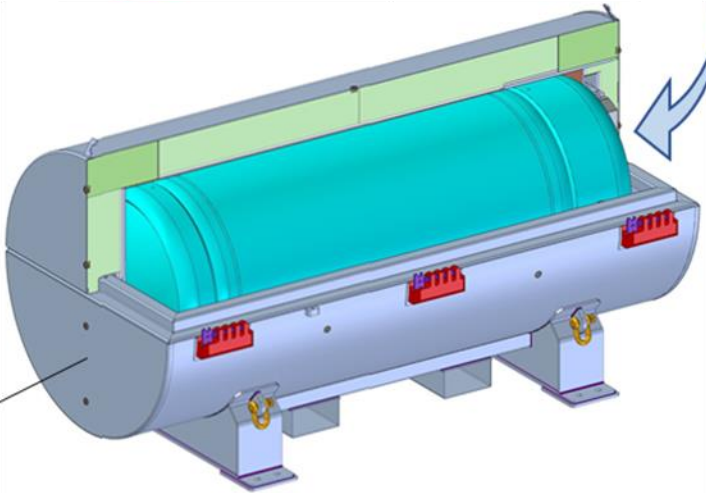
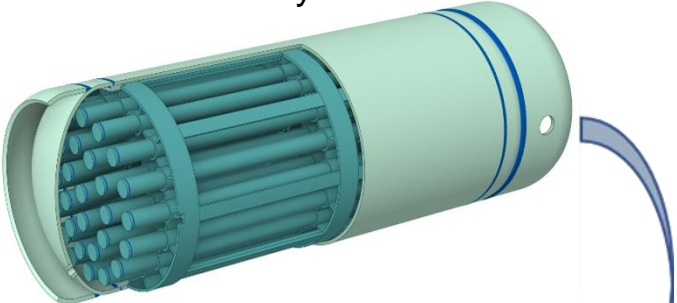
30B Cylinder



DN30 PSP

Concept for DN30-X

30B-X Cylinder



DESIGN OF DN30-X: PACKAGE

- **Type AF package with the DN30 PSP and the 30B-X cylinder**
 - DN30 PSP unchanged from the licensed DN30 package
 - Modified 30B-X cylinder with criticality control features

- **Fully compliant with 10 CFR 71 and SSR-6; no changes or exceptions required**

- **Different designs for optimized UF₆ capacity**

Cylinder	Enrichment in %	UF ₆ Capacity		Licensing Status
		lb	kg	
5B	100	54.9	24.9	No PSP
8A	12.5	255	115	No PSP
30B	5	5020	2277	DN30 PSP
30B-10	10	3527	1600	DN30 PSP
30B-20	20	2756	1250	DN30 PSP

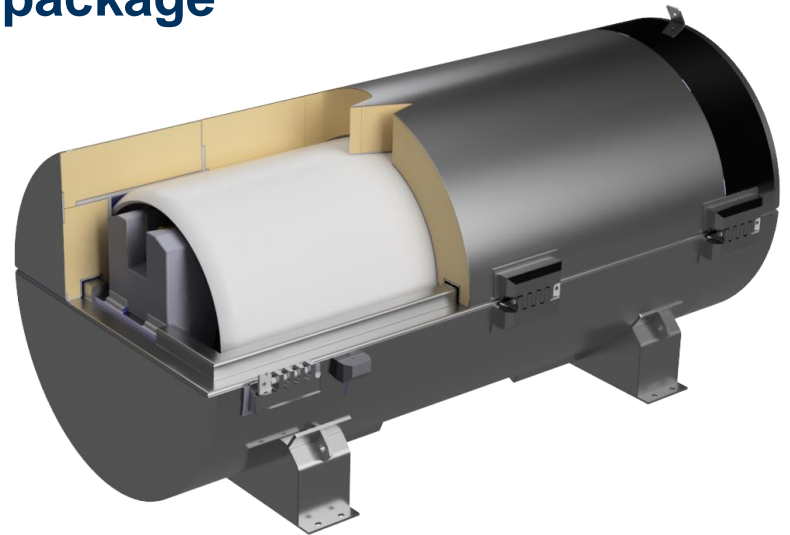
DESIGN OF DN30-X: DN30 PSP

■ The DN30 PSP as part of the DN30 package

- Designed to accommodate a standard 30B cylinder
- Provides mechanical and thermal protection for the cylinder during NCT and HAC
 - Passed the NCT and HAC drop tests with fully loaded cylinders
 - Package passed the HAC fire test even with an empty cylinder
- DN30 package is licensed in the US and France with max. 5 % enrichment
 - Validations in all relevant countries available
 - More than 250 DN30 PSPs in operation today, 80 more will become available this year

■ The DN30 PSP as part of the DN30-X package

- Unchanged design, but accommodates the modified 30B-X cylinder





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