International WG
Package stowage and retention system during transport of radioactive material

Main conclusions of the 24-26 March meeting

Dublin EACA 7-8 May 2014
Context and terms of reference

- International WG supported by IAEA
  - Participants from France, Germany, UK, Japan, Canada, USA, WNTI and ICAO

- Terms of reference
  - Harmonising the design methods for tying-down packages, for all modes of transport (land, sea, rail, air)
  - Review of appendix 4 of TS-G-1.1 guide

- First meeting: 24-26 March 2014, Vienna (AIEA)
  - Presentation of context in each country
  - Reference documents (norms, guides, etc.)
  - Exchanges and discussions
Conclusions of the 24-26 March meeting

Reference documents

- International standards (EN 12195, ISO 10276:2010 ...)
- National standards (TCSC 1006, VDI 2700...)
- International Regulations (UN Recommendations on portable tanks, SOLAS-Annex 13 of CSS code, INF code, Certification specifications for large airplanes EASA-CS-25 or FAA-FAR-Part 25 referring to Weight and balance manuals...)
- Guides (TS-G-1.1, IMO/ILO/UNECE, European best practices, ...)

Main agreed positions

- Distinguish fatigue and peak stress analyses.
- Distinguish design methods for package components (trunnions, lugs) versus retention equipment (lashing, frames, etc.).
- A graded approach according to package type could be envisaged.
- Consider rail shunting as routine condition when not excluded by instructions and labelling...
Prochaines réunions

Next meeting planned November 2014 and remaining issues

- Participants to present available experimental results
- Participants to propose amendments to the appendix 4 of TS-G-1.1 or a new draft
- Remaining issues to be discussed:
  - Use of friction coefficients,
  - Scope of brittle fracture analysis,
  - Which item are the safety factors to be applied to (g-load or stress limit or both)?
  - Allowance for yielding or not
  - Combination of efforts in different directions
  - Recommendations for statically undetermined configurations
  - G-values (next meeting or further)
  - Magnitude of safety factors (next meeting or further)