Industry Experience on Back End Transport

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Facts about Radioactive Material Transport

• 20 millions consignments of radioactive materials routinely transported annually on public roads, railways and ships

• 5% of these are nuclear fuel cycle related

• International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Materials since 1961
Regulations for the transport of Radioactive Materials - A proven efficiency

IAEA Safety Standards
for protecting people and the environment

Regulations for the Safe Transport of Radioactive Material
2012 Edition

Specific Safety Requirements
No. SSR-4

IAEA
International Atomic Energy Agency

WORLD NUCLEAR TRANSPORT INSTITUTE
Sea Transport
WNTI: A bottom-up... and top-down approach

• Bottom-up approach
  – Industry feedback to regulators
    • Operational experience
    • Lessons learnt

• Top-down approach
  – Support on understanding and interpretation of the Regulations to Industry
  – Development of Good Practice Documents
  – Organisation of thematic workshops
WNTI work on back end transport

• A WNTI industry working group dedicated to Back End Transport

• Factsheets, Information Papers and Good Practice Guides

• A dedicated workshop in December 2014

• Participation in international meetings and conferences
Challenges in the back end transport

- Changes in the environment
  - Evolution of technical knowledge
  - Evolution of tools (computational, big data…)
  - Evolutions of knowledge, organisations and practices (Back end policy makers and implementers, Competent Authorities, Technical Support Organisations, Industry)
Challenges in the back end transport

- Challenges in packagings licensing and transport approvals
  - Harmonisation of the regulatory framework for transport and waste
  - Transport after long term storage

- Need to prepare now for tomorrow
  - a clear long term strategy
  - knowledge management
  - long term stability of the regulations

- High level of security
Challenges in the regulatory framework for transport and waste

• Harmonization
  – between countries regulations
  – between countries implementation of the regulations
  – between waste and transport regulations
  – between safety and security
The “4 Cs”

• Categorisation – large number of product groups;

• Conditioning;

• Characterisation;

• Classification;
WNTI GPG on Inventory Principles

- WNTI Good Practice Guide: WNTI Inventory Principles – A Move Towards Reliable Packaging and Transport Data
- 9 principles – critical for packaging, transport, treatment and disposal
  - Training
  - Accuracy and review
  - Auditability
  - Assurance – nuclear site reviews
  - Fit for purpose data
  - Dedicated resource(s)
  - Dynamic waste inventory data
  - Clarity
  - Alignment
Guidance on package design approval

- Europe: Technical guide “Package Design Safety Report (PDSR) from the transport of radioactive material”

- Northern America: Mutual recognition of package design approval for Type B(U) package design

- IAEA: Technical guide “Package Design Safety Report (PDSR) from the transport of radioactive material” in development
Dual Purpose Casks (DPC)

- Several options for the back end
  - Reprocessing, interim storage in pool, dry interim storage, final repository storage

- Integrated safety demonstration for DPC
  - IAEA Joint Working Group on Guidance for an Integrated Transport and Storage Safety Case for Dual Purpose Casks for Spent Fuel
  - IAEA TECDOC (still draft)

- IAEA Working Group at Transport Safety Standards Committee (TRANSSC)
  - Proposal to change Transport Regulations to include a gap analysis for transport after long term storage
Other points to consider

• Transport of large components
  – Evolution of the Transport Regulations
  – WNTI factsheet
  – Industry experience
  – Route planning

• Implementation of the IAEA Fissile Exception Requirements
  – WNTI information paper on how to interpret the regulations
  – IAEA guidance (based on WNTI paper and other documents) to be issued soon
Conclusion

• Keeping the routes open
  – Public acceptance
  – Emergency Preparedness and Response
  – Nuclear liability and insurance
  – Training
  – Information
  – Communication is key

• Importance of a good communications strategy
  – Transport: only nuclear activity in the public domain
  – Stakeholders engagement
  – WNTI good practice guide on communicating for transport
Thank you

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