

# CLEAR REGULATIONS

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# IAEA REGULATIONS

- The IAEA has produced Regulations related to the transport of radioactive material for around 50 years
- The latest Edition (2009) is based on several revisions of an Edition published in 1996
- Changes have been incremental over this period
- Significant rewrites have not taken place

# IAEA REGULATIONS

- Provide a good technical basis for the safe transport of radioactive material worldwide
  - Strong justification that they should not change
  - Conversely, there appear to be areas of the regulations where competent authorities have different interpretations
- Collaboration between authorities leads to a greater common understanding
- Changing the text might change the requirements

# IAEA REGULATIONS

- Suggest that the requirements might be subject to some interpretation
- Greater collaboration leads to common interpretation
- How do we capture this?

# General prohibition

- *Consignments* for which conformity with the other provisions of these Regulations is impracticable **shall not** be transported except under *special arrangement*

# Para 423

*Radioactive material* which is enclosed in or is included as a component part of an instrument or other manufactured article, **may be** classified under UN 2911, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — INSTRUMENTS or ARTICLES, **only if**:

- (a) The *radiation level* at 10 cm from any point on the external surface of any unpackaged instrument or article **is not** greater than 0.1 mSv/h;
- (b) Each instrument or article **bears** the marking “RADIOACTIVE” **except**:
  - (i) Radioluminescent timepieces or devices; or
  - (ii) Consumer products **that have either** received regulatory approval according to para. 107(d) **or do not** individually exceed the activity limit for an exempt *consignment* in Table 2 (column 5), **provided that** such products are transported in a *package* **that bears** the marking “RADIOACTIVE” on an internal surface in such a manner that warning of the presence of *radioactive material* is visible on opening the *package*;
- (c) The active material **is** completely **enclosed** by non-active components (a device performing the sole function of containing *radioactive material* **shall not be** considered to be an instrument or manufactured article);
- (d) The limits specified in columns 2 and 3 of Table 5 **are met** for each individual item and each *package*, respectively; and
- (e) For transport by post, the total activity in each *excepted package* **shall not** exceed one tenth of the relevant limits specified in column 3 of Table 5.

# Uncluttering 423 requirements

- “Shall” is in 401
- 423 (b) (ii)
  - 401 – shall
  - 423 – may be ... only if
  - 423 (b) bears ... except
  - 423 (b) (ii) that have either
  - 423 (b) (ii) or do not
  - 423 (b) (ii) provided that
  - 423 (b) (ii) that bears



# Uncluttering 423 requirements

- (d) The limits specified in columns 2 and 3 of Table 5 are met for each individual item and each *package*, respectively; and
- (e) For transport by post, the total activity in each *excepted package* shall not exceed one tenth of the relevant limits specified in column 3 of Table 5.

If it is evident that a *package* is damaged or leaking, or if it is suspected that the *package* may have leaked or been damaged,

access to the *package* shall be restricted and

a qualified person shall, as soon as possible, assess the extent of *contamination* and the resultant *radiation level* of the *package*. The scope of the assessment shall include the *package*, the *conveyance*, the adjacent loading and unloading areas, and, if necessary, all other material which has been carried in the *conveyance*. When necessary, additional steps for the protection of persons, property and the environment, in accordance with provisions established by the relevant *competent authority*, shall be taken to overcome and minimize the consequences of such leakage or damage.

# Uncluttering 509 requirements

evident that *a package is* damaged or leaking,

suspected that *the package may have* leaked  
or been damaged,

Evident that a package has leaked or been  
damaged?

Suspected .. May have .. Been damaged.  
WHEN?

# Uncluttering 509 requirements

{If it is evident ... **or** ... if it is suspected ...}

**Then** (*added for clarity*)

{{access to the *package* ... **and** ... a qualified person shall, .... {The scope of the assessment shall ...}}

**and** (*added for clarity*)

When necessary, ... shall be ...}

# UN Orange Book

- 2.0.4.2 Samples of the substance shall be transported in accordance with the requirements applicable to the tentative assigned proper shipping name provided:
  - (a) ...
  - (b) The substance ... a radioactive material
  - (c) ...
  - (d) ... not exceeding 2.5kg ...and
  - (e) .....

# SIMPLER STRUCTURE

- New IAEA format
  - **who** shall do **what**, and **when** they shall do it.
  - This can then be supplemented by **how** they shall do it

# THE DANGERS OF MAKING TEXT BETTER

- the perfect is the enemy of the good
- common understanding is established
- training is effective at describing the requirements
- part fixes can introduce inconsistencies
- can lead to changes in interpretation leading to differences in application

# THE WAY FORWARD

- complete re-write of the requirements is not a task that is simple
- discourage “improvements” in text where there is no clear safety benefit
- ensure we do not add to complexity
  - editorial review of all changes
  - initiated with the review cycle that is currently underway



# THE WAY FORWARD

- fundamental review of the underlying principles behind the requirements
  - process is due to start in 2010 (next week)
  - side effect – identify areas that can be improved
- review the incorporation of requirements in other standards
  - process under discussion
  - may be initiated as early as the end of 2010

# CONCLUSIONS

- The current requirements set out an acceptable level of safety for the transport of radioactive material
- There are obviously improvements that can be made in the text to aid clarity
- Partial “improvements” can lead to a worse situation

# CONCLUSIONS

- A comprehensive review is important to ensure any changes are indeed beneficial
- Phasing in improvements as paragraphs are changed for safety reasons seems to be an acceptable way forward in the meantime
- A comprehensive review is being initiated related to:
  - Technical basis of requirements
  - Incorporation of requirements in other standards

**Thank you**

**The future**

**Working together**