Contribution ID: **82** Type: **ORAL**

SOME REGULATORY AND PRACTICAL ASPECTS OF SAFETY AND SECURITY INTERFACES AT RADIOACTIVE MATERIAL TRANSPORT

The report notes that despite the record of safety and security in transport of radioactive materials (RM) in Russia and other countries, ones of the most pressing issues of improving the regulatory system and implementing the regulatory requirements in practice of transport of RM are issues of interfacing of safety and security.
Effective interfacing requires consideration of some general aspects and specific safety and security requirements, their justifications and comparisons, an assessment of the possibility of eliminating or at least mitigating inconsistencies in approaches and specific requirements. The report examines some such issues, the resolution of which would mitigate difficulties of simultaneously meeting safety and security requirements, namely: - inconsistency of boundaries of activity thresholds for safety and security (A1/A2 thresholds and other safety thresholds include an upper limit, while thresholds of radioactive source (RS) categories in IAEA D system do not include upper limits); - issue of possible rounding of D values in order to establish the same threshold values for some radionuclides of RS category 2 (10D) and A1 values when these values are close (in particular, for Co-60, Co-57, Se-75, Ir-192, Cs-137, Ib-169, Cf-252, etc.), and on the other hand, consideration of justification for significant differences in such values for other radionuclides; - justification for extending D-system for RS to the radioactive contents of transport packages containing the same radionuclides in a different form (various concentration, for example, in the form of LSA) in the modal rules, and, on the other hand, justification for activity threshold 3000A2 in the modal rules (i.e. thousands of times higher) for radionuclides not included in the D-system for RS; - absence in justifications for security requirements of taking into account practical limitation of activity release from packages in the event of accidents, including, obviously, accidents associated with violation of security (sabotage) at transport, where even in the event of package destruction in practice releases from packages are not all, but only about 10-2-10-3 part of radioactive contents of packages; - significant difference in the volume of IAEA requirements for the security of non-nuclear RMs compared to requirements of the modal rules, virtual absence of a connection between IAEA approaches to the security of RM and of international documents for other dangerous goods;
- absence in IAEA fundamental security principles of optimization principle (ALARA) and of probabilistic approach to assessing security violations and their consequences, and on the other hand, the presence in UN Recommendations of a reference to the mass socio-economic disruption at a terrorist event, especially for class 7 goods; - provisions of IAEA documents on practical absence of dangerous contamination of public water sources in the event of a security violation, including RS categories 1 and 2 with a high degree of solubility of radioactive substances, and on the other hand, strict restrictions on activity of LSA and SCO transported by inland water transport in accordance with safety regulations; - in contrast to IAEA safety regulations, international security system does not have uniform requirements for permits from competent authorities confirming compliance with security requirements.
The authors believe it would be appropriate, within the framework of IAEA activity, to form a joint working group of safety and security specialists to examine the above and other inconsistencies with the aim of interfacing safety and security at transport of RM.

Country or International Organization

Instructions

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Track Classification: Track 1 Legislative and Regulatory Framework for Safe and Secure Transport