6th Meeting of the Emergency Preparedness and Response Standards Committee (EPReSC)

12 – 14 June 2018
Agenda Item 3.1

Draft Safety Guide DS469: Preparedness and Response for an Emergency during the Transport of Radioactive Material

Step 7: Approval by the relevant review Committees for submission to Member States for Comments

M. Breitinger, NS-IEC
S. Whittingham, NRSW
Background - Document

- Revision of TS-G-1.2 (2002)
- DPP approved by EPReSC, TRANSSC, RASSC, NSGC June 2016
- DPP approved by CSS November 2016
Background - Experts

- Writing team of experts in transport safety & emergency preparedness and response
  - Open call for experts at EPReSC, TRANSSC, RASSC, NSGC, and CSS
  - Formed November 2016
- Experts from:
  - Canada (2)
  - France (2)
  - India
  - Japan
  - Portugal
  - UK
  - USA
  - WNTI (2)
Background - CS

- 6 Consultancy Meetings held
  - June 2016
  - November 2016
  - February 2017
  - June 2017
  - September 2017
  - January 2018

- Events jointly implemented by IEC and Transport Safety Unit
Background – TM

- Technical Meeting held 16-20 October 2017
- 62 representatives
  - 43 Member States, 1 International Organization, 1 Nongovernmental Organization
- Conclusions:
  - Welcomed the current draft DS469 as a revision of TS-G-1.2.
  - The draft DS469 fully meets the intent of the DPP. No missing aspects were identified.
  - The meeting participants considered the current draft to be clearly written and comprehensive.
  - The meeting participants noted and welcomed that the current draft reflects past experiences and lessons learned from previous emergencies.
  - Many countries identified the complexity associated with the implementation of the necessary technical and operational arrangements in the preparedness stage and the need to cooperate with many different organizations. The document was considered as good guidance to start or continue the necessary discussions at national level.
  - The current draft accurately reflects a balance of preparing for emergencies during transport, while noting the requirements established in SSR-6 and the strong safety record of consignors and carriers worldwide.
  - The current draft provides guidance and recommendations for all Member States, while noting that the adoption and implementation of Member State plans and procedures may vary slightly.
The Technical Meeting used virtual reality (VR) technology to provide an additional method for attendees to review the suitability of the templates and checklists in DS469.

4 scenarios developed: Two road, rail, and maritime.
**Background – Guiding Principles**

- Easy to understand, user friendly publication
- Focus on most probable emergencies while acknowledging and allowing for more severe emergencies
- Elaborate linkages between concepts whenever possible
  - E.g., External Radiation Levels (SSR-6) and Operational Intervention Levels (GSR Part 7)
- Provide more specific guidance on roles and responsibilities of consignors and carriers
- Provide examples, templates, and references whenever possible
  - 4 appendices and 3 annexes are > 50% of the length of the document
Scope

- Preparedness and response for a nuclear or radiological emergency during transport
- From the forwarding of the package to delivery at the consignee (including storage in transit)
- Excludes:
  - Events without any safety significance (e.g. a disabled conveyance in a stable condition, such as a broken down motor vehicle or a vehicle involved in a minor traffic accident)
  - Movement of radioactive material within the site boundaries of authorized facilities
Proposed Structure

- Section 1: Introduction
- Section 2: National Arrangements and Framework
- Section 3: Preparedness and Response Elements
- Section 4: Considerations for Modes of Transport
- Section 5: Interface with Nuclear Security
- Appendix I: Features of the Transport Regulations Relevant to EPR
- Appendix II: Considerations for Developing a National Capability
- Appendix III: Types of Emergencies during Transport
- Appendix IV: Postulated Events and Potential Consequences
- References
- Annex I: Example Event Notification Form
- Annex II: Sample Emergency Instructions
- Annex III: Template for the Carrier and Consignor Emergency Response Plan
Comments received by MS - 236

Reference Points:
DS474 (Termination) at Step 7: 314
DS475 (Public Comms) at Step 7: 161
## Comments Received by Committee

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FRA-5

• **Paragraph/Line:** General and title
• **Proposed new text:** “Preparedness and to Respond for an Emergency during the Transport of Radioactive Material”
• **Reason:** With a few exception, the draft addresses preparedness to respond to an emergency, not the response itself
• **Reason for modification/rejection:** Title approved in the DPP and is consistent with GSR Part 7 Preparedness and Response for a Nuclear or Radiological Emergency
• **Paragraph/Line:** Appendices
• **Proposed new text:** Transform all appendixes in annexes
• **Reason:** Appendix I, as a summary, therefore a subset with rewording, and can not have the same status as SSG-26 or SSR-6. Appendix II is material to help some states to implement the recommendations of the guide. It also has a strong interface with the management of any emergency, thus the general EPR Safety Guides. Most paragraphs are not really transport specific. Appendix II gives a partial view of emergencies to be considered as malevolent acts are not considered (see III.2). Furthermore, guidance on combination of events is not provided. Appendix III includes a closed list of scenarios and topics to be addressed in the hazard assessment. It also gives assumptions for the scenario and hazard assessment. This should not be seen as the only scenarios to considered, nor the only assumption to take…
• **Reason for modification/rejection:** The appendices and annexes were determined based on what should be an integral part of the document and what is able to be separated. For example, changing Appendix I to an Annex would mean that it could be separated from the Guide and used on its own, which is incorrect and potentially dangerous.
PAK-4

• **Paragraph/Line:** New section after Para 2.16
• **Proposed new text:** The role of Regulatory body is missing in the safety guide which should be added. This should be in consistent with GSR Part 7.
• **Reason:** Role/ responsibilities of regulator with respect to emergency preparedness and response during transport should be included.
• **Reason for modification/rejection:** The role of the regulatory body is addressed throughout the document as a competent authority and there is not enough unique aspects to warrant its own section.
Proposed new text: “As part of the emergency arrangements, a trained and equipped radiological assessor should be available to assess the radiological consequences of an emergency. Radiological assessors should be trained and qualified in their necessary functions, including radiation safety, assessing containment, radiation and contamination measurements, and emergency response. Depending on the results of the hazard assessment, the radiological assessor may also need to be trained in the prevention of criticality.”

Reason: This is not relevant for an off-site assessor. Superfluous

Reason for modification/rejection: Equipment and qualifications are important points under GSR Part 7
Paragraph/Line: 2.27

Proposed new text: The following statement “Take the appropriate steps to minimize the spread of radioactive contamination” can be revised as “Take the appropriate steps to minimize the spread of radioactive contamination and decontamination”

Reason: In most of the cases first responders do not have enough knowledge and proper equipment to deal with the decontamination activities and they need special assistance from the radiological assessors.

Reason for modification/rejection: While an accurate statement, decontamination is typically considered part of remediation / recovery and is outside the scope of EPR publications.
The following statement “Protective actions for emergencies during transport should be consistent with those for other nuclear or radiological emergencies and should be based on the identified reference level, described in terms of residual dose, and generic criteria, expressed in terms of projected dose or received dose [2, 11, 12].” can be revised as “Protective actions for emergencies during transport should be proper with the extent of the emergency, should be consistent with those for other nuclear or radiological emergencies and should be based on the identified reference level, described in terms of residual dose, and generic criteria, expressed in terms of projected dose or received dose [2, 11, 12].”

Reason: Protective actions for transport emergencies should be implemented in accordance with the graded approach.

Reason for modification/rejection: Already stated using the term “graded approach.”
The emergencies related to the transport of radioactive material should also be addressed in the local and regional radiation emergency plans.

Reason: National Radiation Emergency Plan and the plans of the consignors and carriers are mentioned in paragraphs 2.47 and 2.48 but the local radiation emergency plans are missing and they should also be indicated.

Reason for modification/rejection: Covered in “Government”, 2.16
Paragraph/Line: 2.49
Proposed new text: Delete 2.49
Reason: This is already covered by 2.48 as modified
Reason for modification/rejection: The paragraph provides clarity on specific circumstances not directly addressed elsewhere.

- Ed note: (original) 2.49 reads: “Additional plans and procedures should be developed for specific shipments. This will depend primarily on the material being transported. These plans and procedures should be consistent with the existing plans and procedures.”
Emergency arrangements for all organizations should be coordinated and integrated with the arrangements for the response to a nuclear security event during the transport of nuclear or radioactive material [5, 6].

Reason: Simplification

Reason for modification/rejection: “address” is not consistent with the IAEA safety standards or nuclear security series.
• Paragraph/Line: 2.53
• Proposed new text: The following topic can be added to the topics list present in this paragraph: “Procedures and resources for effective and uninterrupted communication”
• Reason: Communication arrangements should also be mentioned in this list to emphasize the importance of this topic.
• Reason for modification/rejection: Emphasized 2.58, 2.59, 3.21, 3.49, etc.
FRA-64

• Paragraph/Line: 2.65
• Proposed new text: Locate 2.65 after 2.60 (Ed. Note: sentence on first responder training)
• Reason: More logical
• Reason for modification/rejection: This change would move the sentence out of the section on training and into the section on transnational responses, thus limiting its applicability only to those responses.
The following topic can be added to the training topics list: “Decontamination techniques and use of decontamination agents and equipment”

Decontamination should also be mentioned in this paragraph since it is one of the important actions to limit the radiological consequences of a transport emergency.

Generally considered part of remediation, not emergency response.
Paragraph/Line: 3.11

Proposed new text: “The initial response to an emergency during transport should be primarily based on observable criteria and other indicators.”

Reason: -

Reason for modification/rejection: Inconsistent with GSR Part 7
• Paragraph/Line: 3.12
• Proposed new text: “Carriers who are at a transport accident and first responders arriving at the site area should identify observable conditions which could indicate an a radiological or nuclear emergency situation. Any observable indication that a radiological emergency may be present should be acted upon and response procedures should be activated. An emergency class* should be declared if there is a visible loss of containment or shielding integrity, or if a radiation reading taken by a qualified individual with an appropriate radiation instrument confirms that radiation levels are higher than should be expected.” * see GSR Part 7 para 5.14. There are 5 classes of emergencies: “general emergency”, “site area emergency”, “facility emergency”, “alert” or “other nuclear or radiological emergency”
• Reason: Clarification
• Reason for modification/rejection: First part covered in Section 1. Second part: These are only examples of emergency classes, there is a footnote in GSR Part 7 explaining.
FRA-100

• Paragraph/Line: 3.34
• Proposed new text: Delete 3.34
• Reason: [10] will be applicable so no need to repeat.
• Reason for modification/rejection: Important linkage to [10]
  – Ed note: (original) 3.34: “To minimize the risk of conflicting statements being given to the news media, the responsibility of communicating with news media representatives should be coordinated by a designated individual or organization [10].”
• Paragraph/Line: 3.44
• Proposed new text: “When assessing whether the conditions are stable, the stability of the exposure situation, the consignor, in cooperation with any required technical experts (e.g., package designers), should assess the likely development of the situation in the future (short, medium and long term when relevant). This may include, for example, corrosion of a package’s containment system after it has been submerged for an extended period.”
• Reason: Clarification
• Reason for modification/rejection: Consistency with GSG-11 para 3.7, “…the exposure situation should be well understood and confirmed to be stable…”
Comment Resolution

- Accepted: 185
- Rejected: 51
Action Requested

- RASSC Approval: 6 June 2018
- TRANSSC Approval: 7 June 2018
- NSGC Clearance: 13-14 June 2018

Approval to move to SPESS Step 8 for Member State Comments
Thank you!