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Paul A. Gray  
CHAIRMAN

John J. Miller  
SECRETARY

Bernd Hagelskamp  
TREASURER

## Trip Report for TRANSSC 33 / 10<sup>th</sup> NSGC And Summary of First Consultancy Meeting on Recycling and Reuse of Sealed Sources

TRANSSC-33 and the 10<sup>th</sup> NSGC were held from Tuesday November 15<sup>th</sup> through Friday November 18<sup>th</sup>. After a review of the NSGC Agenda I decided to participate in the TRANSSC meeting because the NSGS Agenda items relevant to ISSPA was duplicated during TRANSSC Plenary. The following items from TRANSSC 33 relevant to the ISSPA members are provided below:

- A1/A2 Values – The working group on the A1/A2 value revisions reported during TRANSSC 32 that the working group had calculated A1/A2 values for 5 new isotopes and work was on going however the effort needed to complete the work was significant and a Coordinated Research Project (CRP) was suggested for future work on this topic. TRANSSC agreed to the proposal for a CRP in order to complete this work in a timely fashion. After the secretariat pursued the CRP further it was decided that the effort to initiate a CRP was extensive and the A1/A2 work would be continued as a “special group” of NSRW or TRANSSC. The special group would meet in cost free consultation meetings that will coincide with the scheduled TRANSSC meetings. The output of the special group would be an IAEA TECDOC. There was no estimate provided for when this work would be completed.
- NST048 Implementing Guide: Security of radioactive material in use and storage and of associated facilities, NSS No. 11 was approved for submission to DDG-NS for publication. (Note – also approved for publication by NSGC during 10<sup>th</sup> Meeting of the NSGC)
- NST044 Implementing Guide: Security of radioactive material in transport, NSS No. 9, was not initially approved by TRANSSC for submission to DDG-NS for publication. Some of the member states (France, Sweden, India, and Germany) raised concerns with the final draft text and were not ready to approve NST044 for publication. A side meeting was held and all of the concerns raised were addressed with minor changes to the final draft text. On Friday TRANSSC approved NST044 for publication. From my perspective, I believe the revised NNS No 9 is an improvement over the original 2008 version of the document. There may be challenges with harmonization and this concern was raised during TRANSSC. (Note – also approved for publication by NSGC during 10<sup>th</sup> Meeting of the NSGC).



- Update from 40<sup>th</sup> CSS meeting – a short presentation was provided on the CSS meeting that was conducted the week prior to TRANSSC. For ISSPA members, the number 1 interest of the CSS for their 6<sup>th</sup> term is:

“Harmonize safety standards and security recommendations, as well as the IAEA’s process for developing them, to facilitate accomplishing the common objective of safety and security - to protect people and the environment. Such harmonization will assist operators, users of radioactive sources, and regulators in accomplishing this common objective. Actionable steps for safety and security harmonization to be initiated, with involvement of the NSGC, during the sixth CSS term could include:

- Promoting a common development process for safety standards and security recommendations and associated guidance, including further involvement of the CSS.
- Consolidating safety standards and security recommendations for radioactive source users consistent with the Code of Conduct on the Safety and Security of Radioactive Sources.
- Consolidating safety standards and security recommendations for transportation of radiation sources and nuclear material consistent with United Nations standards.
- Progressing on a common glossary for nuclear security and safety.

ISSPA has been stressing the importance of harmonization since its inception. It will be interesting to see how this progresses and how long it will take.

- TRANSSC divided into 3 working groups to review and consider revisions to; TS-G-1.3 *Radiation Protection Programmes for the Transport of Radioactive Material*, TS-G-1.4 *The Management System for the Transport of Radioactive Material*, and TS-G-1.5 *Compliance Assurance for the Safe Transport of Radioactive Material*. All 3 working groups recommended revisions to the TS-Gs. Copies of the working group reports are attached.
- TRANSSC divided into 4 separate working groups to consider a draft guidance document based upon the format of SSG 33 that had been prepared by the Secretariat. The new document is intended provide all SSR6 requirements set out for each of the UN numbers associated with radioactive material. This format will align with how the operator classifies their consignment for shipment and therefore makes it far easier to understand. By setting out the full regulatory requirements



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categorized by the UN number, the document provides a set of IAEA transport regulatory requirements that can be adopted by Member States directly into their national transport regulations by selecting the UN numbers applicable to their needs. The Member State transport regulations based upon this document format would then not only include all the relevant SSR-6 requirements but the format would be in the form of a guidance document to help operators to understand the regulatory requirements and facilitate compliance. The overall document would exceed 3000 pages as a result of the significant amount of duplication of requirements. The Secretariat pointed out that a hard copy of the document was not envisioned and the document would be an electronic database system. The feedback from the Working Groups was mixed, while most member states supported the idea, most did not think the amount of effort that would be needed to develop such a system was warranted and it was questioned as to who would use the system if it was developed.

### Summary of 1<sup>st</sup> CM on Recycling and Reuse of Sealed Sources.

I participated in the 1<sup>st</sup> CM on Recycling and Reuse of Sealed Radioactive sources that took place November 7<sup>th</sup> through the 11<sup>th</sup>. Two other individuals employed by ISSPA member companies also participated along with one US DOE person and a representative from Iran. The objective the CM was to initiate the preparation of a document that will provide the administrative, management and technical requirements for reuse and recycling sealed radioactive sources and address considerations on the overall life cycle management of sources. The document will consider the impact on dose, safety and cost of the various life cycle management options. This publication will provide the necessary information for regulators and operators in MSs to thoroughly assess and determine if reuse or recycling could be a viable option to manage DSRS at end of life within their MS. The participants provided presentations on the recycling and reuse activities conducted at their representative facilities and then began work on a proposed table of contents. The participants soon recognized that a new standalone document on Recycling and Reuse would duplicate existing guidance of make references to existing guidance. The participants questioned the Agencies intention of developing a new guidance document when a revision to IAEA Nuclear Series No. NM-T-1.3, Management of Disused Sealed Radioactive Sources to include a chapter on Recycling and Reuse could result in the same output. The suggestion of revising NM-T-1.3 was further justified considering the very first sentence of Chapter 5, Management Principles and Requirements is; “The preferred option for managing disused sealed sources is to recycle them for further use”, and this is the only mention of recycling



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in the entire document. The Agency agreed that a revision to NM-T-1.3 would be the preferred output.

A date for the second CM has not been determined but is expected to include a member state regulator. I don't believe ISSPA as an organization would get involved until an initial draft of the document has been developed. I would not suggest that ISSPA include this effort in their budget for 2017 as we have good ISSPA representation through member companies that are participating.

A handwritten signature in blue ink, appearing to read "John J. Miller", with a long, sweeping horizontal line extending to the right.

John J. Miller

## **WG 1: TS-G.1.3 Radiation Protection Programmes for the Transport of Radioactive Material**

### **Introduction**

WG 1 was assigned to undertake a brief review of TS-G 1.3 to identify whether this document needs a revision using the following TOR.

### **TOR TS-G-1.3**

Whilst operators adopt procedures that control the preparation, loading, transport and unloading of packages there can be a misunderstanding of the purpose of a radiation protection programme (RPP) how one is developed and how it is implemented. It is therefore considered that this document provides important guidance for operators and a review of its scope, content and presentation is needed to ensure it provides a comprehensive and understandable source of guidance information. It will also be useful to consider changes that may address findings relating to RPPs from compliance inspection programmes carried out in your country over the 10 years since TS-G-1.3 was published.

### **Discussion**

The scope, structure and the content was discussed.

### **Key findings**

- Add clarification why criticality safety is not included in the scope of TS-G-1.3.
- Update references to standards, facts and figures through the whole document (e.g. BSS)
- Add the use of ALARA in the objective
- Consider the exposure to the members of the public in demonstrating safety in transport of radioactive material (e.g. para 3.7)
- Use of terminologies and paragraph numbers in line with SSR-6
- Revise the dose rate of 20  $\mu\text{Sv/h}$  in the driver's section (Para 8.10)
- Revise Chapter 9 to avoid repetition from TS-G-1.2 and provide concise provisions referring to TS-G 1.2
- Avoid duplication of text with SSR-6, TS-G-1.2, TS-G-1.4 and TS-G-1.5
- Complete revision of all annexes with updated information and examples (the examples are considered an essential part of TS-G-1.3, providing practical guidance and graded approach with illustration)
- Remove annex VII (already in SSR-6)
- Revise annex IX with help of IMO representative
- Annex X: Use of more relevant industry example; consider whether this checklist is necessary
- Annex XI: Move to TS-G 1.2

The discussion notes are presented in Attachment 1.

### **Recommendation**

WG 1 recommends revision of TS-G1.3

## Attachment 1

### Discussion notes

- 3.6: split up into two parts: 1. transport within an establishment and 2. Dedicated carrier / shipper
- 3.7 and Ch. 4: add guidance for members of the public
- 3.9 (a): expand with examples, e.g. checks of package integrity and radiation levels
- 5.5: add guidance on the interrelation between RPP's of consignors, carriers and consignees
- 5.13: clarify what is meant by 'authority'
- Ch. 6: revise reference to 20  $\mu\text{Sv/hr}$  for drivers (new BSS)
- 6.1: clarify 'routine and normal conditions' (ref. SSR-6)
- 6.1.a(ii): align 'reasonable accurate estimates' to new BSS 'conservative estimates' (see also 6.12 and 6.16)
- 6.16 and annex VIII: be careful presenting figures without proper context
- 6.20: update with current (versions of) computer codes
- 6.21: consider adding examples (e.g. loading and unloading of NORM)
- 8.2: align definition of 'critical group' with new BSS
- 8.9: add example of 'some protective measures'
- 8.10: Revise dose rate of 20  $\mu\text{Sv/h}$  in driver's section
- Chapter 9: Revise Chapter 9 to avoid duplication of TS-G-1.2. Provide a concise summary with reference to TS-G-1.2
- Annex IX: take into account modal emergency response provisions (e.g. IMDG Code)
- Ch. 11: revise taking into account TS-G-1.4
- Annex I: take into account size of package considering the decrease of radiation levels with distance
- Annex I-V: add example for nuclear fuel cycle and different transport modes
- Annex II-10: add check of packages for contamination
- Annex III-13: add alerting first responders
- Annex VII: Remove annex VII
- Annex-IX revise with input from IMO representative
- Annex X : Use of more relevant industry example
- Annex XI: Move to TS-G 1.2

## **Attachment 2**

### **List of Participants:**

1. S Sarkar, Australia (Chair)
2. M. Ter Morshuizen, Netherlands (Secretary)
3. M. T. Lizot, France
4. M Moutarde, France
5. L. Simeonova, Bulgaria
6. I. Petrova, Czech Republic
7. A. Bujnova, Slovakia
8. M. Davidsdottici, Denmark
9. S. Faille, Canada
10. R. Thorington, UK
11. J. Miller, ISSPA
12. T. Rijphema, AIPES
13. J. Safar, Hungary
14. J. Duffy, Ireland
15. A. Konnai, Japan
16. W. Cho, Korea
17. S. Hellsten
18. Badr Mohamed, Egypt
19. C. Elechosa, Argentina
20. B. Desnoyers, WNTI
21. R. Boyle, USA
22. H. Zika, Sweden
23. F. Koch, Switzerland
24. A. Endres, Germany
25. M.A. Charette, Canada
26. C. Fasten, Germany
27. G. Ferran, France
28. A. Kirkin, Russia
29. V. Ershov, Russia
30. T. Cabianca, UK
31. A. Xavier, Brazil
32. O. Kervella

## **TRANSSC33 Nov 2016 Working Group 2 – TS-G-1.4**

### **The Management System for the Transport of Radioactive Material**

**Chair** – David Pstrak (USA)

**Secretary** – Iain Davidson (UK)

**Attendees:** Frank Wille (Germany); Adelia Sahyun (Brazil); Ito Daiichiro (WNTI); Nathalie Cordier (France); Julie Krochmaluk (France); Ben Dekker (WNTI); Pierre Malesys (ISO); Fernando Zamora (Spain); Christophe Karasinski (Belgium); Ikoma Yutaka (Japan); and Gerhard Wortmann (ISSPA).

#### **Summary:**

1. Group agreed to consider the proposed changes from SSR-6 and SSG-26 i.e. 2018 editions for TS-G-1.4 revision considerations.
2. Reference to shipment after storage/ageing may be useful (see (1)).
3. Paragraphs 106 and 306 of SSR-6 define the scope for TS-G-1.4. Paragraph 1.4 of the introduction may benefit from review e.g. to narrow the focus to SSR-6 requirements rather than the fairly broad focus of facilities and (all) activities, which included in a general way health, environment, economic element considerations.
4. Recognition of developments in 'Human Factors' (HF) may be useful to add. TRANSSC to consider a member state to present on HF in the future.
5. If not included in the new version of SSG-26, augment the paragraphs on document retention, data management etc. which is becoming more of an issue in ageing facilities.
6. Need to update all references for current revision(s) and any consequential changes plus any new references that need to be included.
7. Recommendation to the TS-G-1.2 (EP&R) working group to cover the latest thinking on Management Systems (so that it is not needed in TS-G-1.4). [How do we get the balance right between referencing out and providing a useful document and duplication of info?]
8. Concerning the graded approach, consensus was that more examples would be useful for duty holders not involved in the nuclear fuel cycle (terminology that everyone agrees with for this community may be needed!)
9. Recommend that Table 3 of the Appendix for Graded Management Controls be reviewed and revised as necessary to reflect current standards/thinking.
10. To help the target audience, the document should be rationalized and simplified where possible. [do we need more intelligence from IAEA on who the users/target audience of the document are?]

**Consensus to revise to reflect 2018 standards and other improvements identified.**



## Discussion

France - Shipment after storage/ ageing should be included to reflect recent amendments.

Spain – TS-G-1.4 is adapted to 2005 edition but 2012 exists – should we look at this or 2018 edition?  
Group agreed to look forward to 2018 edition.

UK – need to make sure that we don't repeat what may go in SSG-26 but refer to ageing?

Germany – used TS-G-1.4 for its own guidance.

Spain – need to bear in mind TRANSSEC secretariat advice to keep in mind the less developed/ non-nuclear sector.

Germany – re para 1.4 is everyone happy with 'management system' rather than 'QA' and/or CA?  
France – helpful to have mgt system as this includes Human Factors etc. Spain – the nuclear Competent authority present does not regulate health, environment, economics, etc so difficult to implement this integrated concept (out of scope of SSR-6?) ISO – term was brought in to align with GS-R-3 rather than ISO 9001 (NB Quality Management System). Chair – Ref [3] talks of facilities and activities (which would include transport). Is the definition too broad/ too general for transport and therefore make applicability difficult? Germany – [1.6] is clear on the scope (add ageing). France - emergency preparedness and recovery and Spain - security?)

France/UK – keen to have recognition of Human Factors. The group thought that this may be too detailed for the guide. France to present at T34?

Japan – keen to augment record retention/data management paragraphs – wait for SSG-26 revision wording.

ISO – need to update all references for current revision(s) and any consequential changes plus any new references that need to be included.

General discussion - It was agreed that Emergency response management systems should be covered somewhere in TS-G-1.4 (if it is not clear in the new revision of TS-G-1.2).

France – further explanation on the expectations of the graded approach for smaller users would be useful. UK suggested that a specific example for the medical sector might be useful as there are so many of these entities. Other examples within the range may also be useful to help the non-nuclear community.

Germany – is Table 3 of the Appendix for Graded Management Controls up-to-date, consistent and accurate?

Discussion on whether RPP management systems should be referred to – agreed that as reference to management systems was already in TS-G-1.3 (page 30) then not needed here.

Spain - could the document be rationalized with more use of tables of examples/ appendices (reference out to e.g. ISO 9001) rather than words? A long document is less useful to small users/ single entities in the transport chain. Simplicity!

UK – discussion on a need for an over-arching QP to cover a number of different interfaces that may be involved in a transport operation. Paragraph 5.48 seems to cover this.

Discussion on who might use TS-G-1.4 going forward and target the document and its potential revision to this audience. Target the small users/ countries under the IAEA regional approach programme, who would benefit most.

Decision to revise or not – consensus to revise to reflect 2018 standards and other improvements identified.

END.

## TS-G-1.5 – Compliance Assurance for the Safe Transport of Radioactive Material

M0E26

### Working Group Report

Participants:

Friedrich Kirchnawy (Austria, Chair)

Jon Hursthouse (UK, Secretary)

Ingo Reiche (Germany)

Anthony Patko (USA)

Makoto Hirose (Japan)

Guy Lourtie (Belgium)

Opar John (Kenya)

Helmut Rein (Germany)

Maria Dedova (Russia)

Ranjankumar Singh (India)

Jan Van Aarle (Switzerland)

Zeroual Soumia (Morocco)

Sandro Trivelloni (Italy)

Doron Peles (Israel)

Niyum Rampersadh (South Africa)

Tunde Katona (Hungary)

Michael Wallin (Sweden)

Muhammad Muneer (Pakistan)

Xiaoqing Li (China)

The working group members introduced themselves and their role in the safe transport of radioactive material.

The working group appointed a Chair (Friedrich Kirchnawy - Austria) and a Secretary (Jon Hursthouse – UK/ ONR).

## Discussion points:

- Background to the IAEA safety standards: There was discussion about the phrase ‘Regulating safety is a national responsibility’, with the suggestion that it was an international responsibility instead, particularly in respect of sea and air, as the regulations are developed by international bodies.
- Should the guide include more information on transport security as well as safety? Paragraphs 1.7 and 3.14 were considered to adequately address this by making clear security was dealt with elsewhere in the regulatory framework. Security is also referenced in the Introduction to the book.
- Para 1.2 – still refers to 2005 edition of the Transport Regulations. This should refer to the latest issue of SSR-6. (This occurs frequently throughout).
- Paragraph 2.1 – Means to assure this include..... Not all activities are applicable to all MS and these comments should be amended to state ‘where applicable’. There may also be different competent authorities for these various activities. Does this need to be reflected in SSR-6?
- Paragraph 2.3 – list of those who have duties omits ‘consignee’ – is this from 2005 regulations, and should the consignee be included from the latest SSR-6?
- Paragraph 2.6 b) – should this include a comment to ensure that appropriate training has been received?
- Paragraph 2.12 - should this include ‘(including shielding)’ as per 4.32 (c).
- Paragraph 2.14 – does this text give the necessary consideration of events with possible cross-border implications, e.g. events at sea.
- Paragraph 2.15 – list of CAs – this is now done, but can be difficult to locate. IAEA to encourage MS to keep list updated.
- Paragraph 3.4 – query over terminology: legislation vs regulations, and different legal frameworks between member states.
- Paragraph 3.9 – should this paragraph be extended to give greater detail of the international regulatory frameworks? E.g inclusion of UN Model Regulations?
- 3.10 (c) – ADNR → ADN!
- Paragraph 3.11 – How do MS communicate deviations from IAEA regs to IAEA and other MS? Some formal communications in place – e.g. TRANSSC. Is this enough? Do we need to do more? Should this higher standard be more clearly defined in this guidance material (TS-G-1.5)?
- Paragraph 4.6 (f) – query over meaning ‘end disposal of packaging’. Means ‘disposal’ – clarification required? Radioactive waste issue rather than transport issue.
- Paragraph 4.10 – does not include CA-approved fissile exceptions introduced in 2012 regulations. May also need to include Large objects etc.
- Paragraph 4.56 – should the CA issue an approval certificate for a management system (or just the for the design being requested?) The CA should be allowed sufficient freedom to cater for different approaches in different member states. The group noted the use of ‘may’ rather than ‘should’ which a less strong word.

- Paragraph 5.10 – CA issued certificates should be provided to IAEA to be published in Ref 22. This list does not appear to be routinely updated, nor is the necessary information being provided by every CA. There is strong interest in such a list being available. Perhaps link to individual CA websites that state current approvals? This could make it easier to keep the list current.
- Paragraph 5.18 – applicable to sea vessels; should this/ does this apply to air transport also? How does the state of the operator get involved? Should ‘can’ be ‘may’ or ‘shall’? The departure/ arrival states in practice have to be involved in the multilateral approval – ‘shall’ not ‘may’! If this is a mandatory requirement, it should be in SSR-6, not TS-G-1.5.
- Annex II – This is probably still required, but could it be linked or better aligned to the IAEA PDSR Guide? (Linked from 4.14, 4.19 etc.) Is the structure of this annex correct?
- Annex V – could this section be revised to incorporate the recent output of EACA for Inspection Guides?
- Although certain examples were identified where TS-G-1.5 was inconsistent with SSR-6 latest edition, this list is unlikely to be complete and there are likely to be other inconsistencies that would be picked up from a thorough review.
- Review of this document is quite high priority, as this document forms the basis of IRRS missions, and the initial questionnaire etc. The review should ensure the revised edition is published or otherwise made available as soon after the 20xx edition of SSR6 is published (and no more than 2 years from this date).
- Use of checklists is helpful, but needs to be used by competent and trained staff (‘Yes/ No’ answers can be overly simplistic and give misleading outputs).
- Has the transport of orphaned sources in respect of Compliance Assurance been considered in TS-G-1.5?

#### Outcomes from the Working Group:

1. Initial considerations on scope, content, format of the guidance document: the comments above constitute the working group’s thoughts on the scope, content and format of the guidance document.
2. Recommendation: That TS-G-1.5 shall be revised by TRANSSC.
3. A presentation to TRANSSC plenary: this report constitutes the presentation.