DGP-WG/05-IP/7
15/4/05

DANGEROUS GOODS PANEL (DGP)

MEETING OF THE WORKING GROUP OF THE WHOLE

Montreal, 18 to 22 April 2005

Agenda Item 5: Discussion of miscellaneous dangerous goods issues

SECURITY DURING THE TRANSPORT OF RADIOACTIVE MATERIAL

(Presented by IAEA)

This paper provides the Development of Guidelines for Security of Transport of Radioactive Materials.

SECURITY DURING THE TRANSPORT OF RADIOACTIVE MATERIAL

Ann-Margreth Eriksson-Eklund
Senior Transport Security Officer, NSNS

Development of Guidelines for Security of Transport of Radioactive Materials

There have been several efforts to develop guidelines for security during transport, but only nuclear materials (e.g., special nuclear material) have been addressed thoroughly. Other draft transport security guidelines have not been based on a systematic evaluation of the potential consequences that could result from malicious events (such as explosive dispersion of material) when categorizing materials and defining appropriate security provisions. While radioactive materials have been included in the new United Nations security recommendations for all classes of dangerous goods, the categories of materials and the specific security provisions for each category had to be chosen with haste. There is need to comprehensively address the risks of sabotage and diversion for the purpose of malicious acts as a basis for specifying well designed security requirements during transport.

Therefore there is an urgent need for developing security guidelines that cover all radioactive material during transport. This work should get started quickly to avoid the possibility that more guidelines, covering only some of the materials posing significant risks, are developed independently. The development of the new guidelines should be harmonized to the greatest degree possible with the already existing internationally agreed approaches of transport security.

The guidelines on Security during Transport of Radioactive Material should consider both sabotage and diversion leading to malicious acts such as dispersion. A technically defensible basis to categorize the radioactive material on the basis of its potential use in malicious acts needs to be developed. This categorization should be based on potential radiological consequences resulting from malicious use and the attractiveness of the material for these purposes.

It is important that the new document complement the Code of Conduct on the Safety and Security of Radioactive Sources. The Code of Conduct (Annex I) states that "…States should give appropriate attention to radioactive sources considered by them to have the potential to cause unacceptable consequences if employed for malicious purposes, and to aggregations of lower activity sources (as defined in TECDOC 1344) which require management under the principle of this Code". Development of transport security guidelines should be fully consistent with this principle and based on consideration of unacceptable consequences from malicious acts. If possible, nuclear material should be categorized the same way as other radioactive material. An internationally accepted basis for appropriate security measures during transport to prevent malicious acts is needed to enhance application of the Code of Conduct in this area.

The categorization of radioactive material and the security provisions for identified categories of nuclear and other radioactive material need to be harmonized. The transport security guidance already developed should be fully considered in the development of the new guidelines. While there is need for a new concept and methodology for classification of all radioactive material into security categories, the approach must fit into existing internationally accepted guidelines. It is important that, as much as possible, the guidelines incorporate work that has already been done.|

Future document

Goals:

1. Internationally accepted guidelines and recommendations for security during transport of nuclear and other radioactive materials, addressing the protection against sabotage, theft and diversion for the purpose of malicious acts; This new document will fill existing gaps and will interface with the provisions for nuclear material transport security as shown in Figure 1. The document should aim at a harmonized approach in categorization of nuclear and non-nuclear radioactive material.

2. Common methodology for categorization of nuclear and other radioactive material based on the attractiveness of the material and on the potential radiological consequences of sabotage or unauthorized removal of material during transport.

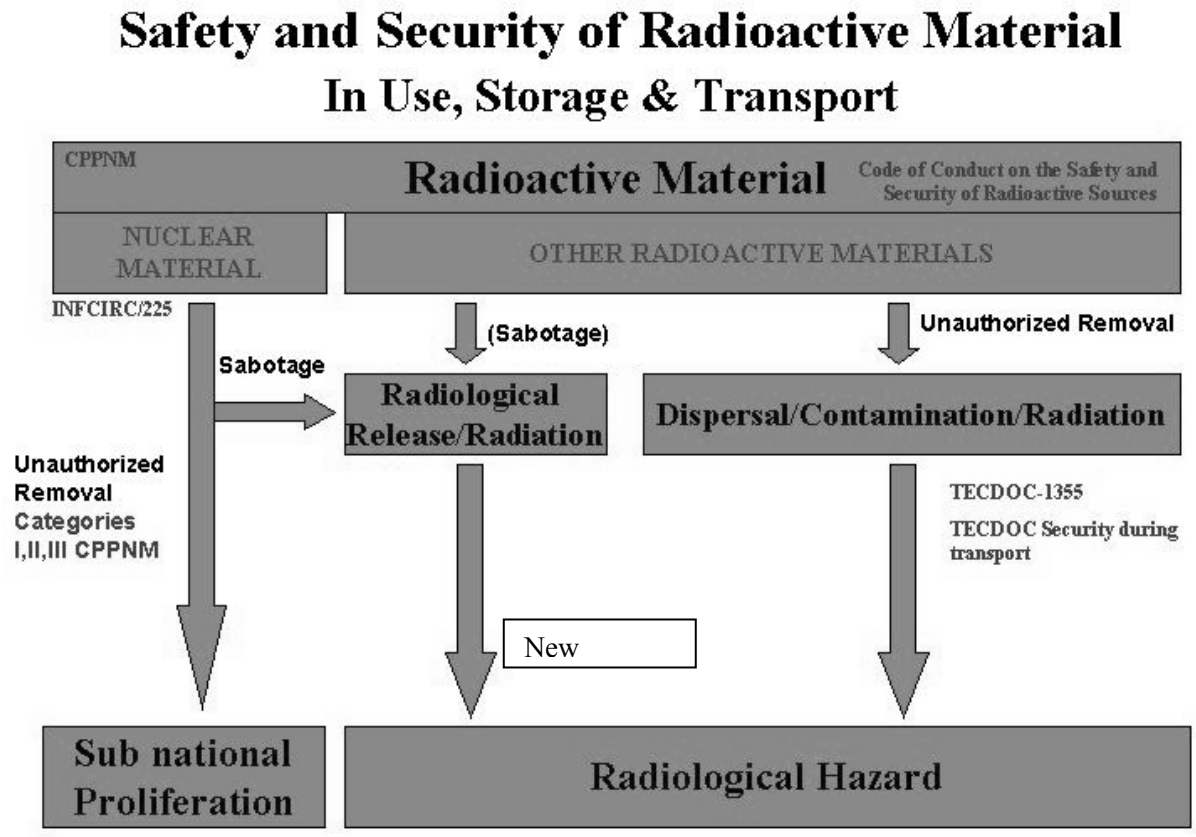


Figure 1. Safety and Security of Radioactive Material

Terms of reference: This project will evaluate the potential radiological consequences and attractiveness of radioactive material for use in malicious acts. The evaluation should provide a technically defensible basis for assigning quantities of material to security groups and should recommend appropriate security provision for each group. Potential consequences should take into account different scenarios such as

stand off attack, capture and disperse, capture and process and disperse, etc. The final product of the project will provide common ground for international guidelines for security during transport of all radioactive material.

Issues to be considered:

1. Reference doses and other parameters;
2. Potential radiological consequences to determine radioactive thresholds;
3. Categorization methodology;
4. Identification of security groups;
5. Chemical hazards and potential chemical consequence
6. Use of design basis threat (DBT);
7. Specific recommendations for physical protection measures;
8. The three dimensional aspect of security;
9. "Denial of shipments";

Furthermore, areas like regulatory infrastructure development and appraisals should be considered.

Suggested Time Schedule

CSM 1, May 2005

Consider the terms of reference, develop methodology, identify critical parameters, and develop a report outline for addressing safety and security issues in transport

CSM 2, July 2005

Review dispersion modelling results, refine parameters, define categories and physical protection measures. Identify outstanding issues and develop first draft of report.

TM 1, September 2005

Discuss interim guidelines on security of radioactive material during transport. Discuss and agree to content and methodology in new guidelines. Discuss possibilities to use some parts of existing "Interim guidelines for security of radioactive material during transport" in new guidelines and interfaces with nuclear material guidelines.

CSM 3, October 2005

Develop final draft TECDOC.

November/December 2005

Distribute first draft to member states for comment.

TM 2, January/February 2006

Review and revise final draft.

May/June 2006

Publish and distribute guidelines.

Interregional training on Guidance for Security of Transport of Radioactive Material

The Agency is providing training courses on several issues within the area of safety and security. However for security in transport of radioactive material no training has been provide so far. There is a need to provide such training, as the material is most vulnerable when being transported. The Agency has therefore developed a plan to develop an Interregional training course on the guidance for security of transport of radioactive material.

The development of the training course will start when the first draft of the Guidelines for Security of Transport of Radioactive ready.

The following time schedule has been suggested:

Identification of course material	November/December 2005
CSM to review course content	January 2006
Preparation of training material	March 2006
Revision and preparation of final course material	May 2006
Course module publication	August 2006
Presentation of first pilot course	August 2006

Development of Assessment Procedures on Security of Transport of Radioactive Material

There are several appraisal and assessments carried out by the Agency to advice Member States in improving their measures for safety and security of radioactive materials. Security in transport of radioactive material has this far however not been fully included in any of those missions. Therefore there is a need to develop procedures for an appraisal of the security of transport of radioactive material. The intention is to develop a module that can be used together with other missions. The module can be used, if asked for, together with TranSAS missions as well as RASSIA or IPPAS missions. The appraisal procedures should be stand alone in the sense that it can also be used separately. The development of the appraisal procedures will start when the draft Guidelines is ready.

The following time schedule has been suggested:

Identification of elements	November/December 2005
CSM to develop appraisal methodology	December 2005
Preparation of methodology	end March 2006
TM to review and revise proposed methodology	April 2006
Final module publication	August 2006

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