Introduction to IAEA Safety Standards

IAEA Statute

The IAEA’s Statute (under Article III.A.6) authorizes the Agency to establish standards of safety to protect health and minimize danger to life and property. These standards are established and adopted in consultation and, where appropriate, in collaboration with the competent organs of the United Nations. Additionally the process of establishment of such standards is closely collaborated with specialized agencies concerned (including such standards for labour conditions).

The IAEA has a fundamental part to play through the Safety Standards Series and their application in achieving in Member States a high level of protection for people and the environment worldwide.

Harmonized use and application of the IAEA safety standards

Vision of the IAEA safety standards

With the strong involvement of Member States representation in the Safety Standards Committees and in the Commission on Safety Standards, the IAEA is committed to develop standards that will be the global reference for protecting people and the environment from harmful effects of ionizing radiation. The standards constitute an integrated, comprehensive and consistent set of up-to-date, user friendly and fit-for-purpose safety standards of high quality, which through their use and application in the Member States will provide for a worldwide, harmonized high level of protection for people and the environment from harmful effects of ionizing radiation.

Organizational Structure of the Department of Nuclear Safety and Security

Mr Yukiya Amano IAEA Director General

Mr Denis Flory Deputy Director General, Head of the Department of Nuclear Safety and Security

Mr Pil-Soo Hahn Director, Division of Radiation Transport and Waste Safety

Mr Khammar Mrabit Director, Office of Nuclear Security

Mr James Edward Lyons Director, Division of Nuclear Installation Safety

Mr Paul Woodhouse Section Head, Safety and Security Coordination Section

Mr André-Claude Lacoste Chairman of the Commission on Safety
Standards

Mr Fabien Feron   Chairman of the Nuclear Safety Standards Committee
Mr Gustavo Enrique Massera  Chairman of the Radiation Safety Standards Committee
Mr E. William Brach  Chairman of the Transport Safety Standards Committee
Mr Geoff Williams   Chairman of the Waste Safety Standards Committee

Coordinators of the Safety Standards Committees

<table>
<thead>
<tr>
<th>NUSSC</th>
<th>Mr. Miroslav Svab</th>
<th><a href="mailto:M.Svab@iaea.org">M.Svab@iaea.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>RASSC</td>
<td>Mr. Tony Colgan</td>
<td><a href="mailto:T.Colgan@iaea.org">T.Colgan@iaea.org</a></td>
</tr>
<tr>
<td>TRANSSC</td>
<td>Mr. Jim Stewart</td>
<td><a href="mailto:Jim.Stewart@iaea.org">Jim.Stewart@iaea.org</a></td>
</tr>
<tr>
<td>WASSC</td>
<td>Ms. Gabriela Siraky</td>
<td><a href="mailto:G.Siraky@iaea.org">G.Siraky@iaea.org</a></td>
</tr>
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History of Safety Standards Committees (SSC) and Present Status

Shortly after its inception in 1957, the Secretariat began developing and setting safety standards. The very first IAEA publication (STI/PUB/1) was Safety Series No. 1 on the safe handling of radioisotopes, published in December 1958.

Around 200 publications were subsequently issued in the Safety Series including the regulations for the safe transport of radioactive material in 1961, the basic safety standards for radiation protection in 1962 and safe radioactive waste disposal into the ground in 1965.

The further development was the establishment of four programmes for nuclear installation safety, radiation safety, waste safety, and transport safety, each with a specific and different review process.

Within the radiation safety area particularly, are the Basic Safety Standards. The first two editions in 1962 and 1967 were approved by the Board of Governors.

In 1990 with the revision of the ICRP recommendations, an Inter-Agency Committee on Radiation Safety (IACRS) was established. It comprised initially the Commission of the European Communities (CEC, now the European Commission), the Council for Mutual Economic Assistance (CMEA, now defunct), the Food and Agriculture Organization of the United Nations (FAO), the IAEA, the International Labour organization (ILO), the OECD/NEA, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), the World Health Organization (WHO)
and The Pan American Health Organization (PAHO). International Commission on Radiological Protection (ICRP), the International Commission on Radiation Units (ICRU), the International Electro technical Commission (IEC), the International Radiation Protection Association (IRPA) and the International Organization for Standardization (ISO) had observer status in IACRS.

The revision of the current BSS (Safety Series No. 115) is now coordinated by the BSS Secretariat, which was made up of representatives of the IAEA, FAO, ILO, PAHO, NEA/OECD, WHO, UNEP and EC. The process commenced in early 2007. The revised BSS was approved by NUSSC, RASSC, TRANSSC and WASSC at their meetings in November-December 2010. The document was then tabled for approval at the CSS in May 2011. Revised BSS title: Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards 2011 edition is in the finalization stages of development.

With the expansion of nuclear power globally, a need for a comprehensive set of safety standards for nuclear power plants emerged. As a result, in 1974, the IAEA launched a Nuclear Safety Standards Programme (NUSS). The review and approval process for the NUSS programme was established though a Senior Advisory Group (SAG) established in 1974. With respect to safety standards on the transport of radioactive material, an IAEA Standing Advisory Group on the Safe Transport of Radioactive Material (SAGSTRAM) was established in 1977. The radioactive waste safety (RADWASS) programme was initiated in 1988.

Over the years, the safety standards were published in the IAEA Safety Series without distinction of status among the various safety related documents. In 1989, following a major expansion of the IAEA’s safety related activities; the Secretariat introduced a hierarchical structure comprising Fundamentals, Standards, Guides and Practices.

This first part of the history of the safety standards, until 1996, was essentially a phase of response to several identified needs from the Member States and progressive establishment of a specific structure and review process for each programme in a bottom-up approach, collecting the experience in safety practices and guides.

By 1996, it became obvious that there were different processes for the preparation and review of Safety Series publications. This situation often resulted in a lack of compatibility among a number of Safety Series publications. On 1 January 1996, the IAEA modified its managerial structure creating the Department of Nuclear Safety with the specific responsibility of organizing the preparation and review of the IAEA safety standards. A renewed uniform preparation and review process was introduced covering all areas in which the IAEA establishes safety standards.

As part of this new preparation and review process, the Secretariat created a set of advisory bodies with harmonized terms of reference. These bodies included the Advisory Commission for Safety Standards (ACSS), the Nuclear Safety Standards Advisory Committee (NUSSAC), the Radiation Safety Standards Advisory Committee (RASSAC), the Transport Safety Standards Advisory Committee (TRANSSAC) and the Waste Safety Standards Advisory Committee (WASSAC).

One additional change since the creation of the Commission and Committees in 1996, involves a change in name. Because the Commission and Committees are an integral part of the development process, the term “advisory” was eliminated from the titles.
and the Commission and Committees are now called: the Commission on Safety Standards (CSS), Nuclear Safety Standards Committee (NUSSC), Radiation Safety Standards Committee (RASSC), Transport Safety Standards Committee (TRANSSC), and Waste Safety Standards Committee (WASSC).

With the changes in place in 1996 the establishment of an overall structure for the Safety Standards Series began with effect from 2003.

In 2006, a key milestone was reached with the issue of Fundamental Safety Principles, a single Safety Fundamentals publication, “International Atomic Energy Agency, Fundamental Safety Principles, Safety Standards Series No. SF-1, IAEA, Vienna (2006)”, superseding the three previous independent Safety Fundamentals publications, covering the different areas of nuclear safety, radiation safety and waste safety and formulating for the first time a unified philosophy of nuclear safety and protection against ionizing radiation with a broad international consensus. Fundamental Safety Principles constitutes the conceptual basis for the IAEA's entire safety standards programme and provides the rationale for its wider safety and security related programme.

A major change in the approach, initiated by a statement from the Commission on Safety Standards issued in June 2006, with the adoption of a top-down approach in order to ensure a logical application of the safety principles in the safety requirements and a logical implementation of the safety requirements in the safety guides. During the first decade after the establishment of the uniform review process, in 1996, the quality and relevance of the safety standards significantly increased, resulting in two main aspects. Firstly, the number of Member States using the safety standards increased, as has their commitment to actively participate in the establishment and review processes and secondly, the use of the safety standards in the Member States resulted in a request for regulatory stability as a new challenge for the safety standards.

The internationally agreed IAEA safety standards provide a basis for States to demonstrate their performance in fulfilling their obligations. They are a cornerstone of the Global Nuclear Safety and Security Regime, which supports the implementation of binding international instruments and national safety infrastructure.

**Beyond the action plan for the development and application of IAEA safety standards: Overall structure of safety standards**

There has been much development with respect to the safety standards from 1996 to 2006. The Fundamental Safety Principles, which were published in 2006, identifies thematic standards and facility-specific standards. In the new policy the number of standards appropriate for each thematic area would be limited. The Agency is proposing to look beyond the Action Plan and propose new actions that will not only improve the quality of the safety standards but also try to identify a comprehensive, but controlled and manageable set of standards documents.

Current intention is to present the structure of the set of Safety Requirements to be established in the future after harmonisation and integration of present set of thematic requirements and after harmonisation of all and integration of some of the facilities and activities specific requirements. The intention is to publish by 2013 Generic Safety Requirements for all thematic areas that are applicable to all facilities and activities. The General Safety Requirements will be complemented by a set of seven
facilities and activities specific Safety Requirements which is planned to be published by 2015.

Any new safety guide would need to be justified.

Strategies and Processes for the Establishment of IAEA Safety Standards (SPESS)

http://www-ns.iaea.org/committees/transsc/default.asp?fd=948&dt=0

HISTORICAL BACKGROUND OF THE REGULATIONS FOR THE SAFE
TRANSPORT OF RADIOACTIVE MATERIAL

The ECOSOC Committee of Experts and the United Nations recommendations

On 15 April 1953, a Committee of Experts was appointed by the United Nations Economic and Social Council (ECOSOC) to develop a universal system of recommendations on the transport of dangerous goods that would reduce both risks and costs in the expanding international trade and traffic in dangerous goods and could also be adopted for domestic purposes.

In December 1954 the Committee decided that its recommendations were now complete enough to be recast as Model Regulations which are addressed to all Governments and International Organizations concerned with the development of national and international regulations concerning the transport of dangerous goods and are structured so that they may be used directly.

Classification of dangerous goods

The UN Committee of Experts meets and publishes the “Recommendations on the Transport of Dangerous Goods” (Orange Book) which are updated biennially. The Model Regulations aim at presenting a basic scheme of provisions that will allow uniform development of national and international regulations governing the various modes of transport, yet they remain flexible enough to accommodate any special requirements that might have to be met.

The UN Model Regulations cover the transport of nine classes of dangerous goods; Class 1 - explosives; Class 2 - gases; Class 3 - flammable liquids; Class 4 – flammable solids; substances liable to spontaneous combustion; substances which, on contact with water, emit flammable gases; Class 5 – oxidizing substances and organic peroxides; Class 6 – toxic and infectious substances; Class 7 – radioactive material; Class 8 – corrosive substances; Class 9 – miscellaneous dangerous substances and articles.

Although there are differences in approach between Class 7 (radioactive material) and the other classes, notably as regards packaging approval, radioactive material should be regarded simply as one class of dangerous goods encountered in transport. The integration of all classes into a cohesive system of dangerous goods requirements helps ensure consistent approaches which promote safety during transport.
The IAEA’s role in dangerous goods transport safety

In 1959, the ECOSOC Committee of Experts recognized the necessity of co-ordination with the IAEA in the drafting of any recommendations relating to the transport of radioactive material. The IAEA was entrusted with the drafting of recommendations on the transport of radioactive material, on the understanding that the recommendations would be consistent with the principles adopted by the Committee of Experts and would be formulated in consultation with the United Nations and the relevant specialized agencies. This has led to continued co-operation between the Committee of Experts, the IAEA, the relevant specialized agencies (particularly the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO)) and various other United Nations bodies.

The IAEA and the ECOSOC Committee of Experts agreed that the Regulations should be fully integrated into the Committee’s Model Regulations. Consequently, the Regulations will, in the future, be both a stand-alone document (TS-R-1) in addition for a part of the Model Regulations.

International Regulation of the Safe Transport of Radioactive Material

Background

Following the ECOSOC decision, the IAEA established and first published its Regulations for the Safe Transport of Radioactive Materials (Safety Series No. 6) in 1961, for application to the national and international carriage of radioactive material by all modes of transport. Subsequent reviews conducted by the IAEA’s Secretariat in consultation with IAEA Member States, the relevant specialized agencies and various other United Nations bodies have resulted in revised versions. All versions of the Regulations have struck a balance between the need to take account of technical advances, operational experience and the latest radiation protection principles while maintaining a stable framework of regulatory requirements.

In 1964, when approving the first revised version, the IAEA’s Board of Governors authorized the Director General of the IAEA to apply the Regulations to IAEA operations and operations assisted by the IAEA and to recommend to IAEA Member States and "the organizations concerned” that the Regulations "be taken as a basis for relevant national regulations and be applied to international transport”. The Regulations despite the name have a similar status as the United Nations recommendations. By 1969, however, they had been adopted by almost all international organizations concerned with transport and were being used by many States for their own regulatory purposes. Through the worldwide adoption of the IAEA’s Regulations for all modes of transport, a high standard of safety has been achieved.

Transport Regulations, TS-R-1 approved by the IAEA’s Board of Governors was published in 2009.
The IAEA Regulations address all categories of radioactive material ranging from very low activity, including such materials as ores and concentrates of ores, to very high activity such as spent fuel and high-level waste. The material to be transported must be categorized on the basis of its activity concentration, total activity, fissile characteristics (if any) and other relevant characteristics. Packaging and package requirements are then specified on the basis of the hazard of the contents and range from normal commercial packaging (for low hazard contents) to strict design and performance requirements (for higher hazard contents). Specific requirements are also established for marking, labeling, placarding of conveyances, documentation, external radiation limits, operational controls, quality assurance and notification and approval of certain shipments and package types.

**Carriage of dangerous goods by sea**

The IMDG Code

The carriage of dangerous goods by sea is regulated in order to reasonably prevent injury to persons or damage to ships and their cargo. The International Convention for the Safety of Life at Sea, 1974 (SOLAS) as amended, deals with various aspects of maritime safety and contains in chapter VII the mandatory provisions covering the carriage of dangerous goods in packaged form or in solid form in bulk. The carriage of dangerous goods is prohibited in accordance with the relevant provisions of chapter VII, which are amplified by the International Maritime Dangerous Goods (IMDG) code. The code which sets out in detail the requirements applicable to each individual substance, material or article, has undergone many changes, in both layout and content, in order to keep in pace with the expansion and progress in industry. The International Maritime Organization’s (IMO), Maritime Safety Committee (MSC) is authorized by the Organization’s Assembly to adopt amendments to the Code, thus enabling IMO to respond promptly to developments in transport. Provisions of the IMDG Code, 2010 will be officially in force from 1 January 2012 and is mandatory. IMDG Code contains a Class 7 covering radioactive material, with provisions based on the principles underlying the IAEA’s Regulations for the Safe Transport of Radioactive Material. The purpose of these provisions is to guide those involved in the handling and transport of radioactive material in ports and on ships.

The IMDG code is available as fully searchable database on CD or as a download (including the items within it Supplements). Intranet and Internet (subscription) versions are also available. For more information visit the IMO website at

www.imo.org

**Carriage of dangerous goods by air**

**International Civil Aviation Organization**

The operation of commercial aircraft is governed by the Convention on International Civil Aviation (the Chicago Convention), which entered into force on 4 April 1947. A task of International Civil Aviation Organization is to adopt and amend from time to
time international standards, measures, practices and procedures dealing with matters concerned with the safety, regularity and efficiency of air navigation.

Technical Instructions for the Safe Transport of Dangerous Goods by Air is approved, issued and amended in accordance with the procedure established by the ICAO Council. The Technical Instructions are updated every two years. In order to achieve compatibility with the regulations covering the transport of dangerous goods by other modes of transport, the provisions of the Annex are based on the recommendations of the ECOSOC Committee of Experts and the IAEA’s Regulations for the Safe Transport of Radioactive Material.

The Technical Instructions are kept up to date by an ICAO "Dangerous Goods Panel" of experts who periodically review comments received from States and interested international organizations and consider any changes in the recommendations of the ECOSOC Committee of Experts and the IAEA. The established practice is for the Technical Instructions to be published every two years.

http://www.icao.int/

The International Air Transport Association

The International Air Transport Association (IATA) is a global trade organization body, created over 60 years ago by a group of airlines. Today, Modern IATA is the successor to the International Air Traffic Association founded in The Hague in 1919. The organization represents leads and serves the airline industry in general. It is the prime vehicle for inter-airline cooperation in promoting safe, reliable, secure and economical air services for the benefit of the world's consumers. At its founding, IATA had 57 members from 31 nations, mostly in Europe and North America. Today it has some 230 members from 126 nations in every part of the globe.

http://www.iata.org/about/Pages/index.aspx

International Federation of Air Line Pilots’ Association

International Federation of Air Line Pilots’ Association (IFALPA) is a non-political, non-profit making organisation which represents over 100,000 airline pilots represented by over 100 Member Associations from around the world.

http://www.ifalpa.org/

Carriage of dangerous goods in land transport

Europe

As international land transport is limited to continental traffic, there is no global convention governing the carriage of dangerous goods by road or rail. However, regional agreements exist and the best-known are those developed in Europe, under the auspices of the United Nations Economic Commission for Europe (UN/ECE). The Inland Transport Committee (ITC), a subsidiary body of the ECE, is concerned with inland transport (i.e. transport by road, rail and inland waterways) in the 55
countries covered by the ECE. The ITC is responsible for the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and the European Provisions Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN). For ensuring harmonization between ADR and RID (Regulations Concerning the International Carriage of Dangerous Goods by Rail), the UN/ECE and the Organization for International Rail Transport (OTIF) have formed the Joint Meeting of the Working Party on the Transport of Dangerous Goods and the RID Safety Committee (RID/ADR Joint Meeting)

The provisions of the ADR concerning radioactive material are aligned with the IAEA Regulations for the Safe Transport of Radioactive Material.

http://live.unece.org/trans/danger/publi/adr/adr_e.html

**Carriage of dangerous goods by rail**

Throughout Western and Central Europe (and also the Middle East and North Africa), the international carriage of dangerous goods by rail is subject to regulations, usually referred to as "the RID". The modern RID originated in a convention, which established a small Central Office to administer its provisions. Today, the RID are applicable to the international carriage of dangerous goods between the signatory States of the Convention Concerning International Carriage by Rail (COTIF) of 9 May 1980.

**Outside Europe**

The only known equivalent regional instrument for regulating the road and rail transport of dangerous goods is the 30 December 1994 "MERCOSUR/MERCOSUL Agreement of Partial Reach to Facilitate the Transport of Dangerous Goods" between Brazil, Argentina, Paraguay and Uruguay. The text, published in Spanish and Portuguese, is derived from the seventh revised edition of the United Nations Recommendations of the ECOSOC Committee of Experts (December 1990) and consequently is consistent with the 1985 Edition (As Amended 1990) of IAEA Safety Series No. 6.

The carriage of radioactive material in those four countries is subject to approval by the competent bodies for Class 7 listed in Appendix 1.1 to the Agreement. Other countries in South America are considering their positions in relation to the Agreement.

Under the auspices of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), a number of countries of Southeast Asia are discussing the idea of a regional convention for inland transport that would be based directly on the ECOSOC Committee of Experts’ Model Regulations, including the regulations relating to Class 7 which are consistent with the IAEA Regulations for the Safe Transport of Radioactive Material.

**Carriage of dangerous goods by inland waterways**

Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) took the form of recommendations addressed to the governments of European States with inland waterway networks and to the international River Commissions.
The provisions of the ADN concerning the carriage of radioactive material are aligned with the IAEA Regulations for the Safe Transport of Radioactive Material.

**Universal Postal Union**

Established in 1874, the Universal Postal Union (UPU), with its headquarters in the Swiss capital Berne, is the second oldest international organization worldwide. Universal Postal Union (UPU) is worldwide organisation with approximately 190 member countries. UPU sets the regulations for transport of mail internationally. UPU is the primary forum for cooperation between postal sector players. It helps to ensure a truly universal network of up-to-date products and services. In this way, the organization fulfills an advisory, mediating and liaison role, and provides technical assistance where needed. It sets the rules for international mail exchanges and makes recommendations to stimulate growth in mail, parcel and financial services volumes and improve quality of service for customers

http://www.upu.int

**Policy for reviewing and revising the Agency’s Regulations for the Safe Transport of Radioactive Material**

**Background**

The Agency issues the Transport Regulations pursuant to its statutory functions and to a resolution of the United Nations Economic and Social Council (ECOSOC) on the Agency’s responsibility for the safety of transport of radioactive material. The Transport Regulations serve as the basis for part of the United Nations Recommendations on the Transport of Dangerous Goods: Model Regulations (the UN Model Regulations), which in turn serve as the basis for the international ‘modal’ regulations for transport – i.e. the regulations covering specific ‘modes’ of transport that are issued by international organizations such as the International Civil Aviation Organization, the International Maritime Organization, the United Nations Economic Commission for Europe and the Universal Postal Union. Also, many Member States have adopted provisions compatible with the Transport Regulations in their domestic requirements.


The Transport Regulations are part of the corpus of Agency safety standards, which consists of safety fundamentals, safety requirements and safety guides. All Agency safety standards are reviewed and approved by the relevant safety standards committees and endorsed by the Commission on Safety Standards (the CSS) and the Board of Governors as appropriate. The Transport Safety Standards Committee (TRANSSC) approves the Transport Regulations for submission to the CSS. The Transport Regulations, being safety requirements, require Board approval.
In March 2004, the Board approved an Action Plan for the Safety of Transport of Radioactive Material, which included the following actions: “The Secretariat to publish the 2003 English edition of the [Transport] Regulations forthwith and a revised or amended edition, as necessary, every two years thereafter…” and “The Secretariat to continue the current Agency process for the review and, if necessary, revision of the [Transport] Regulations”.

In September 2004, the General Conference, in resolution GC (48)/RES/10.C, expressed satisfaction with “the progress that has been made in establishing a schedule for regular reviews of the Agency’s Transport Regulations with a view to issuing a revised or amended version, as necessary, every two years, consistent with the schedules of the United Nations Subcommittee of Experts on the Transport of Dangerous Goods and of the relevant international modal organizations”.

Summing up the Board’s discussion of the subject, the Chairman of the Board said “Revision of the Transport Regulations had been seen as a significant step in the implementation of the Action Plan for the Safety of Transport of Radioactive Material” and “Several [Board] members had emphasized that the [Transport Regulations] revision cycle should harmonize the Agency’s activities with those of other international regulatory bodies and looked forward to receiving the Secretariat’s report on the policy of revision of those standards at the meetings of the Board of Governors in March 2005.”

The Secretariat discussed the suitability of the two-year cycle with TRANSSC, in which all Member States and relevant International Organizations including the United Nations are invited to participate, and with the CSS on a number of occasions. These discussions, along with the background given above, have been instrumental in the development of the proposed policy for reviewing and revising the Transport Regulation.

**Proposed policy**

Pursuant to the Action Plan, the Secretariat will continue to review the Transport Regulations at intervals consistent with the schedules of the United Nations Subcommittee of Experts on the Transport of Dangerous Goods and of the relevant international modal organizations in order to remain in step with the review cycles of the other relevant international bodies. Subsequently, it will submit its findings to TRANSSC for review. If TRANSSC considers that a proposal for change stemming from a review cycle is sufficiently important for safety to necessitate publication as soon as possible; the Secretariat will initiate the revision process for the Transport Regulations and will submit all of the changes approved by TRANSSC to the CSS for endorsement.

The CSS will, in turn, consider the changes approved by TRANSSC and recommend to the Director General that he submits a new edition of the Transport Regulations incorporating the proposed changes to the Board for approval and for publication.

To sum up, in the present policy the Transport Regulations are reviewed every two years and revised for publication also every two years without any consideration whether the changes proposed in the review process have safety significance or not. In the proposed policy, while the Transport Regulations will continue to be reviewed
every two years (the current review cycle of the relevant international bodies), the
decision on the revision and publication will be made based on the assessment of
TRANSSC/CSS.

Recommendations of TRANSSC on Decision Criteria for revision of IAEA
Regulations

Background

The purpose of the review of the Regulations is to identify the change(s) which are
needed to maintain and assure the safety of transport and are therefore sufficiently
important for safety to necessitate publication of a revised TS-R-1 as soon as possible.
A proposed change to TS-R-1 which does not successfully pass this evaluation
screening may be appropriate to hold for later incorporation in a revision to TS-R-1,
but that the change does not on its own merits necessitate publication as soon as
possible.

Principles

The following six principles were identified to be used in evaluating proposed
changes to the regulations stemming from the review cycle:

- Optimisation
- Efficiency / practicality / regulatory stability
- Compliance with dose limits
- Socio-economic considerations
- Harmonisation
- Clarification

A detailed review of each change is necessary to determine its safety importance. If a
significant safety change to TS-R-1 is needed to maintain and assure the safety of
transport, then the change is deemed to be "sufficiently important for safety to
necessitate publication as soon as possible".

Examples of changes that may warrant a revision are:

- Consistency with other safety standards (e.g. IAEA Basic Safety Standards
  and UN Recommendations on the transport of dangerous goods)
- New package and/or material type classification
- Modified test requirements
- Operational events / controls
- Changes in scope to any part of TS-R-1 (e.g. definitions, A1/A2 values,
  transport controls)
- New requirements that invalidate designs /certificates

Many proposed changes would not directly lend themselves to quantification of safety
impact. Therefore, the decision criteria would consist of a set of questions which
would guide the TRANSSC review. The questions would help assess the safety
significance of a proposed change. The questions would be structured to typically
provide a “yes” or “no” answer such that a “yes” answer would imply the proposed
change should be considered further while a “no” answer would imply the proposed change would not be needed to maintain and assure safety and therefore would not necessitate a publication as soon as possible.

Criteria:

Two sets of decision criteria questions have been developed. The “Primary set of questions” is to be answered for the collective set of proposed changes. The “Secondary set of questions” provide for a more qualitative assessment of the potential impact of the proposed change on the overall safety of transport. This set of questions should be considered for each proposed change, as appropriate.

**Primary set of questions: To be collectively for all the proposals for amendment**

(These questions would guide the determination if proposed changes to TS-R-1 are sufficiently important to safety to necessitate publication of a new edition of TS-R-1.)

1. Is the change or set of changes needed to maintain and assure safety?
2. Is the change or set of changes sufficiently important for safety to necessitate, publication as soon as possible?
3. Does the change or set of changes have a substantial impact on the scope of TS-R-1?
4. Will the change or set of changes result in a significant change to existing transport activities or invalidate existing designs or certificates?
5. Does the change or set of changes affect the established radiation protection system or the radiological basis of TS-R-1?
6. Would the change or set of changes result in a reduction, or potential reduction, in overall dose?
7. Is the change or the set of changes related to new package type or material considerations?
8. Is the change or set of changes a result of improvements in testing or analysis capabilities, or from operational experience?
9. If delay in implementation of the set of changes will result in inconsistencies with other international standards, will the existing levels of safety be maintained and assured?
10. What is the risk to safety if we delay publication?

**Secondary set of questions: To be collectively for each proposal for amendment**

(These questions would provide for a more qualitative assessment.)
1. Does the proposed change result in any change to the dose to workers?
   1.1. If yes does the dose increase or decrease?
   1.2. If increased is there a net benefit in terms of reduction to the dose to the public in routine, normal or accident conditions of transport?
       1.2.1. If yes are worker dose limits still complied with?
   1.3. If it decreases is there a consequent increase in the dose to the public?
       1.3.1. If yes are public dose limits still complied with?

2. Recognizing that any change to the regulations places a cost burden on the Member States and other stakeholders:
   2.1. Are the expected impacts of the change well understood?
   2.2. Will there be a financial benefit to either the Member States or other stakeholders?

3. Are the criteria used to demonstrate that the safety benefits outweigh the costs acceptable to TRANSSC?

4. Does the proposal raised by one Member State have a significant detrimental effect on another Member State or other stakeholders?

5. If the change is implemented will TS-R-1 be consistent with other international standards?

6. Will the proposed change provide for increased safety of transport in routine, normal or accident conditions?

7. Will the proposed change affect the risk of an incident or accident?
   7.1. If yes is the resultant change acceptable in terms of dose and/or cost?

8. Will the proposed change affect the consequences (dose/environmental harm/disruption to the transport infrastructure) of an incident or accident?

9. Will the proposed change achieve the existing objectives with reduced effort?

10. Does the proposed change have a broad impact on the Radioactive Materials Transport community?

Establishment of and nomination at the Safety Standards Committees and the Commission on Safety Standards

The Transport Safety Standards Committee (TRANSSC) is a standing body of senior experts in transport of radioactive material, established by the Deputy Director General, Head of the Department of Nuclear Safety and Security. TRANSSC advises the Deputy Director General on the overall programme for the development, review and revision of standards relating to safety of transport of radioactive material.

TRANSSC Membership

The following members/participants have been appointed by the Agency's
Director General for the period 2011-2013 (alphabetical order):

**Members: Country, Full Member and Alternate**

<table>
<thead>
<tr>
<th>Country</th>
<th>Full Member</th>
<th>Alternate</th>
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<tr>
<td>Algeria*</td>
<td>Mr A. Herratai*</td>
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<tr>
<td>Argentina</td>
<td>Mr J. López Vietri</td>
<td>Ms N.M. Capadona</td>
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<tr>
<td>Australia</td>
<td>Mr S. Sarkar</td>
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<tr>
<td>Austria</td>
<td>Mr F. Kirchnawy</td>
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<td>Belgium</td>
<td>Mr G. Lourtie</td>
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<tr>
<td>Bulgaria*</td>
<td>Ms A. Bakalova*</td>
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<td>Mr A. E. Buchelnikov Mr A.Y. Anikin,</td>
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<td>United Kingdom</td>
<td>Mr G. Sallit</td>
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<td>United States of America</td>
<td>Mr R.W. Boyle, Mr. E.W. Brach (Chairman),</td>
<td>Mr D. Weaver</td>
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TRANSPORT SAFETY STANDARDS COMMITTEE

The Transport Safety Standards Committee (TRANSSC) is a standing body of senior experts in transport safety, established by the Deputy Director General, Head of the Department of Nuclear Safety and Security. TRANSSC advises the Deputy Director General on the transport safety programme for the development, review and revision of standards relating to transport safety and the programme for their application. A key objective of TRANSSC is to provide feedback and recommendations to the Agency on the transport safety programme and areas for improvement, and to achieve consensus, quality, coherence and consistency in the development of IAEA safety standards.

Functions

The functions of TRANSSC are:

- To advise on the transport safety programme for the development of the transport safety standards issued in the Agency’s Safety Standards Series, covering Safety Fundamentals, Safety Requirements and Safety Guides, both thematic and facility specific, and to advise on priorities.

- To recommend activities and areas for improvement to enhance the overall programme and particularly to advise on the programme for the application of the safety standards.

- To review reports on feedback from the Secretariat and TRANSSC members on the application and use of transport safety standards and to advise on enhancing their usefulness to achieve high levels of safety, as well as on the timely review of and the need for revision of published transport safety standards.

- To review proposals for the development of relevant new standards and to approve the document preparation profiles (DPPs) prior to their submission to the Commission on Safety Standards.
• To review draft transport safety standards, considering the value of each draft standard and the needs of users of the standards.

• To approve the text of relevant draft safety standards prior to their submission to Member States for comment and prior to their submission to the Commission for endorsement.

• To advise on transport safety standards, relevant regulatory issues and activities for supporting the use and application of the Agency’s safety standards, and, upon request, on related issues.

• To review upon request draft publications in the Nuclear Security Series, in the Nuclear Energy Series and in other IAEA series where there is an interface with transport safety standards.

The functions of TRANSSC members are (in accordance with the established strategies and processes):

• To prepare for and attend the meetings of TRANSSC and to contribute actively to the work of TRANSSC.

• To disseminate the draft transport safety standards in their respective States, to seek comments from their national stakeholders and to present a national position on each draft safety standard, which should be based on appropriate consultation at the national level and coordination of the input of national stakeholders.

• To promote awareness of the safety standards in their respective States.

• To compile feedback from the users of transport safety standards, including feedback on how transport safety standards are being used and on any identified shortcomings or gaps, and to report on it to TRANSSC.

Membership

• Membership is open to all IAEA Member States

• Member States will be requested to nominate a senior expert in transport safety to represent their views. Typically the Member State nominee is a senior regulator. The Deputy Director General, Head of the Department of Nuclear Safety and Security, will appoint the members for a term of three years.

• Invitations to attend TRANSSC meetings as observers by candidate international organizations and non-governmental bodies may be considered on a case by case basis in accordance with established strategies and processes.

• The Director of the Division of Radiation, Transport and Waste Safety or his appointee will participate in all TRANSSC meetings.

• The Director of the Division of Radiation, Transport and Waste Safety will designate a scientific secretary for TRANSSC.

Working methods
• The Deputy Director General will appoint a chairperson from among the members for TRANSSC’s three-year term. Should the chairperson be unavailable for any meeting, a deputy should be appointed from the members in consultation between the chairperson and the Director of the Division of Radiation, Transport and Waste Safety.

• The chairperson, in conjunction with the scientific secretary, will prepare a report of the proceedings of each TRANSSC meeting and a report at the end of each three year period on the progress made.

• The chairperson will participate in periodic meetings of the chairs of TRANSSC to collaborate on review processes for safety standards, to coordinate on issues and other documents of mutual interest to the Committees, and to discuss other topics as may be necessary.

• The chairperson will represent the views of TRANSSC at the meetings of the Commission and will ensure that TRANSSC members are kept informed of any decisions taken. In particular, the chairperson will seek the views of the Commission on any unresolved issues.

• Ordinarily, TRANSSC will meet twice a year with each meeting lasting up to five working days. Extraordinary meetings may be called when required.

• A Member State may decide to send a delegation of representatives to the meeting of TRANSSC, with the expertise needed for the items at the agenda of the meetings. The delegation may include other national government representatives, national industry representatives or other stakeholders. However, each Member State is expected to present a “national” position on the Committees agenda items with the Member State appointed representative providing the national position. If the appointed Member State representative cannot attend a Committee meeting, the representative should advise the IAEA of his/her unavailability and designate an alternate to represent the Member State at the Committee meeting.

• The Director of the Division of Radiation, Transport and Waste Safety, in consultation with TRANSSC, may establish working groups of experts to deal with specific tasks for the purpose of assisting TRANSSC in its work.

• Meetings will be conducted in English.

• TRANSSC will report to the Deputy Director General, Head of the Department of Nuclear Safety and Security.

Resources

• The Secretariat will provide the resources necessary for ensuring the efficient working of TRANSSC. The Secretariat will provide copies (typically electronic copies) of relevant documents and background materials necessary to support the efficient function of the Committee and the Committee members. In addition to copies of draft safety standards, copies of other IAEA documents including relevant Safety Reports and TECDOCs will be provided as appropriate.
• All costs involved in the participation of each TRANSSC member, including travel and per diem expenses, will be borne by the Member State that nominated the member.

TRANSSC

http://www-ns.iaea.org/committees/transsc/

Structure of Generic Agenda

1.0 OPENING SESSION

Purpose: To Welcome Participants

• To provide TRANSSC Direction for the Meeting
• Opening Statement – Director
• Opening Statement – B Brach

2.0 ADMINISTRATION ITEMS

Purpose: to establish a clear set of guidelines for the conduct of TRANSSC

• To adopt the agenda
• To inform TRANSSC of the Administrative arrangements
• To provide follow up to previous meetings

2.1. Conduct of meeting: Agenda, Terms of Reference
2.2. Administrative Meeting Arrangements
2.3. Review of previous meeting report
2.4 TRANSSC Report
2.5 Action record sheet

Output Required

Approved agenda
• Approved previous TRANSSC Report
• Action record sheet

3.0 SPECIAL REPORTS

Purpose to raise awareness of activities in member states and assist newer authorities by providing information

Examples below

3.1. Japan TranSAS Report of the follow up to the TranSAS in Japan
3.2. Recording incidents in France a report on the recording of incidents by the Competent Authority in France

Output Required

A broader understanding of the type of activities that may be of benefit to Member States
A clearer perspective of the significance of accidents involving radioactive material

4.0 THE DEVELOPMENT OF DOCUMENTS/PRODUCTS

Purpose: To inform TRANSSC about the status of safety standards and to approve and comment on documents sent to TRANSSC

4.1. Transport Regulations and Advisory Material documents
4.2 Other safety standards e.g. BSS and Proposed Standards

Output
A paper that can be used by the secretariat to communicate the views of TRANSSC on relevant proposals to the UN.

Process for developing standards

5.0 THE DEVELOPMENT OF IAEA SECURITY DOCUMENTS

Purpose: To inform TRANSSC about the status of security standards

6.0 DENIAL OF SHIPMENTS

Purpose: To inform TRANSSC on the work of the steering committee on delay and denial and to provide TRANSSC input to the work of the Steering Committee on Denial

Output
Required: Agreed list of actions for TRANSSC Members related to denial

7.0 OTHER BUSINESS

Late agenda items:

8.0 AGENDA FOR NEXT TRANSSC

Purpose to develop a draft agenda for the next TRANSSC meeting
Papers to present
Discussion
Output Required: TRANSSC paper containing a draft agenda for the next meeting

9.0 REVIEW OF DRAFT MEETING REPORT OF TRANSSC

Purpose to approve the draft meeting which will be posted on the web for a further comment period.

CLOSE OF MEETING

Closing comments – Director
Safety Standards Review Mechanism

Outline and work plan prepared by the Secretariat; review by the safety standards committees and the CSS

Secretariat and consultants: drafting of new or revision of existing safety standard

Review by safety standards committee(s)

Member States

Endorsement by the CSS

Process

No revision planned
New document or revision planned
DPP in preparation or awaiting approval
DPP approved
Document being drafted
Awaiting approval of Committee(s) for submission to Member States
Approved by Committee(s)
Awaiting comments from Member States/incorporating comments from Member States
Awaiting approval by Committee(s) for submission to the Commission
Endorsed by the Commission/Final review in NS-SSCS
Submitted to the Board of Governors and/or Publications Committee
Approved by the Board of Governors and/or Publications Committee
In publishing/in translation
Published in English (etc.).

The draft process is shown on the next three pages:
Process flow for safety standards
(incorporating SSCs Comments – January 2010)

Step 1

Technical Officer (TO)
[Prepares DPP]

Step 2

Safety Standards Committee Coordinator (Coordinator)
[Coordinator ensures DPP correctly filled out]

Step 2

Coordination Committee (CC) Secretary

Approval of DPP by Coordination Committee
- Yes: CC Secretary
- No: Coordinator

Step 3

Coordinator
Circles DPP into MNTIS, assigns DS number

Approval of DPP by Committee(s)
- Yes: Coordinator
- No: Coordinator

Step 4

Coordination
Committee(s)

CSS Coordinator

Approval of DPP by CSS
- Yes: Coordinator
- No: Coordinator

Step 5

Completion of DPP process

Technical Officer (TO)
[Prepares Draft]
## Transport Safety Standards and Advisory Material

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<thead>
<tr>
<th>Series No.</th>
<th>Title</th>
<th>Published</th>
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<tbody>
<tr>
<td>TS-G-1.1</td>
<td>Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (Rev.1)</td>
<td>2008</td>
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<td>TS-G-1.3</td>
<td>Radiation Protection Programmes for the Transport of Radioactive Material</td>
<td>2007</td>
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<tr>
<td>TS-G-1.4</td>
<td>The Management System for the Safe Transport of Radioactive Material</td>
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<td>TS-G-1.5</td>
<td>Compliance Assurance for the Safe Transport of Radioactive Materials</td>
<td>2009</td>
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<td>TS-G-1.1 (ST-2)</td>
<td>Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material</td>
<td>2002</td>
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Transport Safety

GUIDANCE ON HOW TO USE THE COMMITTEES MEMBERS AREA

Registration
Access to all information available to the Committees and the Commission is free, without ID and password. However, to be able to post comments on documents submitted for comments, Committee members should first be registered.

To register, go to your Committee members area, for example for TRANSSC at the address http://www-ns.iaea.org/committees/transsc/, click on the Registration link and give details of the committee you want to be registered for.

Login
After you are registered, to login, click on the link Login on top of the Committee member’s area. You will be asked to enter your username (i.e. your email address) and your password.

Once logged-in, you will have the possibility to post your comments on each document in the subfolders in “Drafts for comments” (see further instructions in section 3 below).

How to post comments on the documents posted for comments
Click on the folder on the left “Drafts for comment”.

There will be one subfolder for each document submitted for your review. Click on the subfolder you wish to review, for example the subfolder “Overall Structure for SS”. You will see the files posted there as a pdf or Word file.

Review this/these document(s) and prepare your comment as a Word or pdf file. If the document for review is a draft Safety Standard, please use the “comment form” available on top of list of the subfolders (on the left-hand side of the page). Save your comment file on your computer and remember its location. PLEASE NOTE DOCX FILES ARE NOT ACCEPTED

If you are not yet logged in, please do so (see above Login). When logged in, you will see a new link Add Comment on top of the page. Click on this link to post your comment on the document in that subfolder.

To fill the box “Choose a File to add”, click on the browse button and go with your Explorer to the comment file in your computer. Select it and click open. The name of the file will appear now in the box.

The filename displayed on the member’s area should be clear for other Committee members. It is thus advised to input a standard formatted text into the box “Display text for Hyperlink to file”. The filename should be as follows: Country, date dd mm yyyy, Committee, comment on DS xxx or Comment on DPP DS xxx. For example: UK 22 03 2007 TRANSSC comment on DS 316

If you wish, you may include additional explanation in the box “notes”.

If this is your first comment posted there, put 1 in the version box. If later on you wish to update this file, you may upload a new version with the same steps as above and put 2 in the version box.
All comments, including yours, will then be displayed in chronological order below the text *Comments*. The link details will provide you with more information such as the name of the originator of the comments, and the additional notes if any.

At the end of the lines corresponding to your comments, you will find a red X. This gives you the possibility to delete any comments you have posted. One typical case is when you want to update your comments. You may wish to firstly delete the previous version before you upload the revised version and indicate that it is version 2.
Abbreviations

Safety Standards Committees (SSC)
Commission on Safety Standards (CSS)
Nuclear Safety Standards Committee (NUSSC)
Radiation Safety Standards Committee (RASSC)
Transport Safety Standards Committee (TRANSSC)
Waste Safety Standards Committee (WASSC).
Technical Officer (TO)
Document Preparation Profile (DPP)
Basic Safety Standards (BSS)
Coordination Committee (CC)
Member States (MS)
Director General (DG)
Board of Governors (BoG)
General Conference (GC)

Strategies and Processes for the Establishment of IAEA Safety Standards (SPESS)
Inter-Agency Committee on Radiation Safety (IACRS)
European Commission (EC),
Food and Agriculture Organization of the United Nations (FAO)
International Labour organization (ILO)
The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

World Health Organization (WHO)

Pan American Health Organization (PAHO)

International Commission on Radiological Protection (ICRP)

International Commission on Radiation Units (ICRU)

International Electro technical Commission (IEC)

International Radiation Protection Association (IRPA)

International Organization for Standardization (ISO)