TRANSSC, RASSC meetings
16-20 June 2014

IAEA Safety Standards
Strategies and processes
(SPESS)
Agenda item TRANSSC 1.1.4
Agenda item RASSC R7.1

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Conventions: NSC, JC, CPPNM, UNSCR 1540…etc

IAEA Safety Standards & Security Guidance

IAEA Safety Reviews and Services

CoCs: RRs & S&S of RSs

International Legal Instruments

Global Knowledge Network

Regulations & enforcements

National Nuclear Safety & Security Infrastructure

Operation & use

Research, Education & Training
Under Article III.A.6 of its Statute, the IAEA is authorized:

“To establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property.”

In 1958, the IAEA published its first Safety Standard, Safety Series No. 1, *Safe Handling of Radioisotopes*. Over the years, some 200 publications were issued in the Safety Series.
**History – IAEA Safety Functions**

IAEA Safety Functions (Article III.A.6)

- Facilitate and service international conventions and other undertakings

  “To establish or adopt... in consultation ... standards of safety for protection of health & minimization of danger to life and property”

  “...and to provide for the application of these standards...”
History

1958 - 1973

• Bottom-up approach
• Collection of experience in safety practices and guides
• Identification of the requirements
History

1974 - 1996

• Four structured programmes
• Bottom-up approach
• Issuance of three Safety Fundamentals
1996 - Establishment of the Department of NS:

- Harmonized processes involving the Commission and the four Committees;
- Preparation of an overall structure of Safety Standards.

2006 - Unified Safety Fundamentals: *beginning of a top-down approach*

2008 - Roadmap on the long term structure and format of SR approved by CSS: *integration and better user-friendliness*


2012 – Establishment of the Nuclear Security Guidance Committee to review the Nuclear Security Series draft publication and of a process to *handle the interface between safety and security*
“The... Committee has decided that the Nobel Peace Prize for 2005 is to be shared... between the IAEA and its Director General...

• for their efforts to prevent nuclear energy from being used for military purposes, and
• to ensure that nuclear energy for peaceful purposes is used in the safest possible way.”

“ At a time ...when there is a danger that nuclear arms will spread both to states and to terrorists groups, and when nuclear power again appears to be playing an increasingly significant role, IAEA’s work is of incalculable importance.”

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Status of the IAEA Safety Standards

Safety Standards are:

- Non binding on Member States but may be adopted by them
- Binding for IAEA’s own activities
- Binding on States in relation to operations assisted by the IAEA or States wishing to enter into project agreements with IAEA
Safety Standards Categories

Safety Fundamentals

Safety Requirements

Safety Guides
Safety Standards Categories

**Fundamental safety objective and principles for protecting people and environment**

**Requirements** that must be met to ensure protection of people and environment – ‘shall’

**Safety Guides**
Recommended ways of meeting the requirements

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Current Status of the Safety Standards

Since the establishment of the Safety Standards Series

- Safety Fundamentals issued in 2006
- Safety Requirements established from 1996 to 2010
- In total 120 safety standards published

Updated “Status of Safety Standards” on the web site


- Includes hyperlinks to the published safety standards in official languages
- Includes general information and a link to the IAEA Safety Glossary

A complete collection of the IAEA Standards can be downloaded from

http://ns-files.iaea.org/standards/iaea-safety-standards.doc

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• SPESS: Strategies and Processes for the Establishment of the IAEA Safety Standards


• The objective of this document is to describe the strategies, the processes and associated responsibilities for the planning, development, review and revision, approval and establishment of the IAEA safety standards.

• The intent is to document and strengthen the process which started with the establishment of the Commission on Safety Standards and the Safety Standards Committees in 1996, in order to achieve by the end of 2015 and maintain beyond this time:
  • A genuine integration of all areas in the Safety Standards Series, using a top-down approach based on the unified Safety Fundamentals;
  • A rationalization of the Series with a reasonable and manageable number of Safety Guides;
  • A significant improvement in ‘user-friendliness’; and
  • A rigorous and efficient process for the establishment of additional standards and the revision of existing ones.

• It is expected that these factors cumulatively will result in a major change in the use and application of the safety standards in the Member States.
An integrated, comprehensive and consistent set of up-to-date, user friendly and fit-for-purpose IAEA safety standards of a high quality.

Using and applying the IAEA safety standards will provide for a worldwide harmonized high level of protection for people and the environment from harmful effects of ionizing radiation.
BASIC STRATEGIES

A. Clear categories
B. Clear, logical and integrated structure
C. Clear scope
D. Consensus at the highest level
E. User friendliness
F. Manageable number of safety standards
G. Clarity, rigour and efficiency of the processes
H. Involvement of stakeholders
I. Effective feedback mechanisms
J. Harmonized terminology
K. Promotion of the IAEA safety standards
L. Interface between safety and security
The structure of the safety standards reflects the ten Fundamental Safety Principles and the “Roadmap on the long-term structure of the safety standards” of May 2008.

SAFETY REQUIREMENTS. General Safety Requirements are complemented by a series of facility and activity Specific Safety Requirements.

The Requirements address what must be done while the Guides will address how this may be achieved.

SAFETY GUIDES. Safety Guides implement several requirements and thus allow for the optimization of the whole set of guides.

There should be one Safety Guide for each important theme, unless a justification is provided for the need for a separate Guide or if combining too many topics for a single theme would not be practicable.
### Basic Strategies in Achieving the Vision

#### B. Clear, logical and integrated structure

**Safety Fundamentals**
- Fundamental Safety Principles

**General Safety Requirements**
- Part 2. Leadership and Management for Safety
- Part 3. Radiation Protection and the Safety of Radiation Sources
- Part 4. Safety Assessment for Facilities and Activities
- Part 5. Predisposal Management of Radioactive Waste
- Part 6. Decommissioning and Termination of Activities
- Part 7. Emergency Preparedness and Response

**Specific Safety Requirements**
- 1. Site Evaluation for Nuclear Installations
- 2. Safety of Nuclear Power Plants
  - 2.1. Design and Construction
  - 2.2. Commissioning and Operation
- 3. Safety of Research Reactors
- 4. Safety of Nuclear Fuel Cycle Facilities
- 5. Safety of Radioactive Waste Disposal Facilities
- 6. Safe Transport of Radioactive Material

**Collection of Safety Guides**
Beyond Safety Standards Series publications, the IAEA publishes Safety Reports, books in the Nuclear Security Series and in the Nuclear Energy Series and TECDOCs; each series has its scope.
The Commission on Safety Standards and the Committees were established with the objective of achieving consensus, quality, coherence and consistency in the development of international standards for safety.

IAEA safety standards are developed in close consultation with Member States and with representatives of relevant international organizations.

Approval by the Board of Governors is required for Safety Fundamentals and Safety Requirements.

The authority to establish Safety Guides has been delegated to the IAEA Director General.
The principal users of safety standards are regulatory bodies and other relevant national authorities.

The safety standards are also used by individuals, co-sponsoring organizations, organizations that design, manufacture and operate nuclear facilities, and organizations involved in the use of radiation related technologies.
OVER THE PAST TEN YEARS, 85 SAFETY STANDARDS HAVE BEEN PUBLISHED

8-9 SAFETY STANDARDS CAN BE COMPLETED IN ANY YEAR\(^3\)

There is typically a ten year cycle for the revision of standards: it is important to keep this factor in mind when deciding on a manageable number of Safety Guides.

SPRESS sets out the conditions under which new Safety guides may be started or existing Safety Guides may be revised.

\(^3\) Given the current resources in the IAEA Secretariat and Member States.
BASIC STRATEGIES IN ACHIEVING THE VISION

G. Clarity, rigour and efficient processes

- Optimized working methods among the Committees and with the Commission
- Knowledgeable expert contributions from Member States
- Rigorous reporting on the disposition of the comments received
Commission on Safety Standards

- Standing body of senior government officials holding national responsibilities for establishing standards and other regulatory documents relevant to nuclear, radiation, transport and waste safety

- Overview role with regard to the Agency’s safety standards and provides advice to the Director General on the overall programme on regulatory aspects of safety

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Terms of Reference of the Commission on Safety Standards

The functions of the CSS are:

- To provide guidance on the approach and strategy for establishing the Agency’s SSs, particularly in order to ensure coherence and consistency between them;
- To resolve issues referred to it by the committees;
The functions of the CSS are (Cont’d) :

- To endorse the texts of the SF & SRs for the BoG approval and SGs to be issued under the authority of the DG; and
- To provide general advice and guidance on SSs issues, relevant regulatory issues and SSs and related programmes, including those for promoting the worldwide application of the standards.
Safety Standards Committees

• Standing bodies of senior representatives, established by the DDG-NS

• To make recommendations on the IAEA’s programme for the development, review and revision of nuclear/radiation/transport/waste safety standards and on activities to support the use and application of these standards

• The four Committees provide feedback and recommendations to the IAEA on its nuclear installation/radiation/transport/waste safety programmes and on areas for improvement, with a view to achieving greater transparency, consensus, quality, coherence and consistency in the development of IAEA safety standards.
Terms of Reference of the Safety Standards Committees

• To periodically review and provide advice and guidance on the strategy, priorities and programme for the development of the nuclear/radiation/transport/waste safety standards issued in the IAEA Safety Standards Series.

• To review reports on feedback received from the Secretariat and from members of the Safety Standards Committees as well as of the Nuclear Security Guidance Committee (NSGC), if any, regarding the application and use of nuclear/radiation/transport/waste safety standards and to provide advice on enhancing their usefulness to achieve high levels of safety, as well as on the timely review and the need for revision of published nuclear/radiation/transport/waste safety standards.

• To review and approve proposals for the development of documents to be published in the IAEA Safety Standards Series, i.e. draft document preparation profiles (DPPs).
Terms of Reference of the Safety Standards Committees

- To review and clear DPPs for the development of documents to be published as part of the IAEA Nuclear Security Series.
- To review and approve the text of draft nuclear/radiation/transport/waste safety standards before their submission to Member States for comment.
- To review and approve the text of draft nuclear/radiation/transport/waste safety standards before their final endorsement for publication.
- To review and clear draft nuclear security guidance documents for which there are safety-security interfaces before their submission to Member States for comment.
- To review and clear draft nuclear security guidance documents for which there are safety-security interfaces before their final endorsement for publication.
Terms of Reference of the Safety Standards Committees

• To provide recommendations, upon request from the Deputy Director General, regarding the IAEA Safety Standards Series development and approval process.

• To ensure, in full cooperation with the Commission on Safety Standards (CSS) and the other Safety Standards Committees as well as the NSGC, that safety and security interface issues are properly addressed and reviewed in both safety and security publications.

• To review, upon request by the Deputy Director General, draft documents intended for publication in the IAEA Nuclear Energy Series and in other IAEA publications series where there is an interface with nuclear/radiation/transport/waste safety standards.
Participation of the different stakeholders (for example, users, regulators and co-sponsors) during the drafting and review phase is a long established practice of the IAEA.
Feedback Analysis Report

On
Revision to the Safety Requirements, “Decommissioning of Facilities Using Radioactive Material” (WS-R-5)

1. BACKGROUND:
The current version of the Safety Requirements, “Decommissioning of Facilities Using Radioactive Material” (WS-R-5), was published in 2006. The Safety Requirements cover the protection of workers, the public and the environment; responsibilities of the major parties associated with decommissioning; developing a decommissioning strategy and the resulting decommissioning plan; decommissioning funding; managing of decommissioning, conduct or implementation of decommissioning activities; and determination of when decommissioning has been completed, including surveys to support the termination of decommissioning activities. WS-R-5 was the first Safety Requirements for decommissioning published as a “stand alone” document.

IAEA procedures prescribe a review cycle of 5 years for Safety Requirements. The Chairman of WASSC requested the Secretariat to begin an early review of the Safety Requirements related to decommissioning and termination of activities to determine whether they would need to be revised.

This feedback report has been prepared to assist in determining whether to revise WS-R-5. The affected sections of WS-R-5, the alternative approaches to revising WS-R-5 and the recommended next steps from the IAEA Secretariat are described herein.

2. ISSUE AND BASIS FOR CHANGES:
In 2005, the Secretariat began revising three related decommissioning safety guides, (i.e., Decommissioning of Nuclear Power Reactors and Research Reactors (WS-G-2.1), Decommissioning of Medical, Industrial and Research Facilities (WS-G-2.2); and Decommissioning of Fuel Cycle Facilities (WS-G-2.4)) for various reasons.
Drafters of safety and security related IAEA publications — particularly safety standards — should use terms as recommended by the IAEA Safety Glossary.

Unless otherwise justified and accepted through the review process, there should be no individual glossary in individual publications.

If a need to add or revise a definition of the IAEA Safety Glossary is identified through the development or revision of a safety standard, the proposal will be submitted to the review process and to the meeting of the four Chairs and if agreed, the Safety Glossary will be updated accordingly.
Any IAEA officer or committee member involved in the planning, development, review, revision, approval and establishment process for the IAEA safety standards should actively promote their use and application worldwide and the dissemination of feedback from this use.
1. Nuclear security and safety are equally important and the process for review/approval should reflect this;
2. Safety document preparation profiles (DPPs) and nuclear security DPPs should be reviewed to identify/define interfaces, if any;
3. Draft safety publications and draft nuclear security publications that have an identified interface should be developed in consultation;
4. After implementation of points 2 and 3, draft safety publications and draft nuclear security publications should be reviewed and approved to ensure the coordination has been effective and that they are in accordance with the Safety Fundamentals and the Nuclear Security Fundamentals.

As an intermediate committee structure:

- New Nuclear Security Guidance Committee (NSGC)
- Interface Group
- 4 Current Safety Standards Committees
Process Flow for the Development of IAEA Safety Standards

Outline and work plan
Prepared by the Secretariat

Review by the Committees and Commission on Safety Standards

Drafting or revising of safety standard
by the Secretariat and consultants

Review by the Review Committee(s)

Member States

Endorsement by Commission on Safety Standards

Establishment by the IAEA’s Director General or BoG

Publication

- SF and SRs approved by BoG
- SGs approved by DG

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Step-by-step process
Key actors

Board of Governors (BoG)
Director General (DG)/Publications Committee (PC)
Commission on Safety Standards (CSS)
Dominique Delattre

Nuclear Safety Standards Committee (NUSSC)
Miroslav Svab

Radiation Safety Standards Committee (RASSC)
Tony Colgan

Transport Safety Standards Committee (TRANSSC)
Steve Whittingham

Waste Safety Standards Committee (WASSC)
Gabriela Siraky

Deputy Director General (DDG)

Interface Group (IG)

Nuclear Security Guidance Committee (NSGC)
Ian Barraclough

Coordination Committee (CC)
Technical Officer (TO)

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Process Flow (1) – Planning

Planning

Outline and work plan (DPP)
Prepared by the Secretariat
Review by the Committee(s)

Drafting

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Review and approval

Endorsement
by the CSS

Approval
by the DDG

Establishment
by the DG or BoG

Endorsement
by the DG or BoG

Publication

Member States
Process Flow (1) – Planning

Resources
TO(s)
Feedback
Latest DPP
Word template

Step 1: Prepare DPP & send to Coordinator

[1 week]: NSNI QA process

Step 2: Review by CC

• DS/NST number!
• Recommends review Committees
• IG then *decides* review Committees

[1 week]
Process Flow (1) – Planning

1. [2 months]:
   - Step 3: Review by SSCs/NSGC
2. [2 months]:
   - Step 4: Review by CSS*
   - [1 week]:
     - post resolved comments
3. DPP to websites

* Safety standards only
Process Flow (2) – Drafting

Planning

Drafting

Review and approval

Outline and work plan (DPP)
Prepared by the Secretariat
Review by the Committee(s)

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Endorsement
by the CSS

Endorsement
by the DG or BoG

Establishment
by the DG or BoG

Publication

Approval
by the DDG

Member States
Process Flow (2) – Drafting

1. DPP
   - SPESS C: Guidance for drafters
     - How to organize and run drafting meetings
     - ...
     - What size your margins should be

2. Step 5
   - Prepare the draft & send to Coordinator

3. Step 6
   - Review by CC
     - Comments!
     - Internal coordination
     - Timings of forthcoming meetings

4. [2 weeks]
   - Quick review by Technical Editor

5. [3 weeks]: NSNI QA process

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Process Flow (3) – Review & Approval

Planning

Drafting

Review and approval

Outline and work plan (DPP)
Prepared by the Secretariat
Review by the Committee(s)

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Endorsement
by the CSS

Approval
by the DDG

Establishment
by the DG or BoG

Endorsement
by the DG or BoG

Publication

Member States
Process Flow (3) – Review & Approval

Step 7

Review by SSCs/NSGC

Deadlines before first review meeting

[2 months]

[1 week]: post resolved comments
Process Flow (4) – Review & Approval

Planning

Outline and work plan (DPP)
Prepared by the Secretariat

Review
by the Committee(s)

Drafting

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Member States

Review and approval

Endorsement
by the CSS

Approval
by the DDG

Establishment
by the DG or BoG

Endorsement
by the DG or BoG

Publication

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Process Flow (4) – Review & Approval

Initiate procedure for note verbale:
Clearance, DocTrack request, due date

Send draft to Coordinator for posting on website

Step 8  Solicit MS comments [120 days]

Step 9  Address MS comments

• Revised draft
• Table of resolution of comments

*Steps for standards explained in detail on department P: drive
Process Flow (5) – Review & Approval

Planning

Outline and work plan (DPP)
Prepared by the Secretariat
Review by the Committee(s)

Drafting

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Review and approval

Endorsement
by the CSS

Approval
by the DDG

Establishment
by the DG or BoG

Endorsement
by the DG or BoG

Publications

Member States

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**Process Flow (5) – Review & Approval**

Comprehensive review by Technical Editor [> 3 weeks]

Step 10  Review by CC

Step 11  Review by SSCs/NSGC

[2 weeks]:
NSNI QA process

[2 months]

[3 weeks]:
post resolved comments and technical editorial changes*

Deadlines before *first* review meeting

*Maybe!
Process Flow (6) – Review & Approval

Planning
- Outline and work plan (DPP)
  Prepared by the Secretariat
  Review by the Committee(s)

Drafting
- Drafting or revising
  by the Secretariat and consultants
  Review by the Committee(s)

Review and approval
- Endorsement by the CSS
- Approval by the DDG
  Establishment by the DG or BoG
  Endorsement by the DG or BoG
  Member States

Publication
Process Flow (6) – Review & Approval

Safety Standards

Step 12

[2 months]

Review by CSS

Nuclear Security Series

Step 12

Approval by DDG

Further consultation?

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Process Flow (7) – Review & Approval

Planning

Outline and work plan (DPP)
Prepared by the Secretariat
Review by the Committee(s)

Drafting

Drafting or revising
by the Secretariat and consultants

Review
by the Committee(s)

Review and approval

Endorsement by the CSS
Approval by the DDG

Establishment by the DG or BoG
Endorsement by the DG or BoG

Publication

Member States

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Process Flow (7) – Review & Approval

PC proposal form

Step 13 Establishment/endorsement by PC

[6 weeks]

Official translations

Step 13 Establishment/endorsement by BoG

[3 months]
Process Flow (8) – Publication

Funding → Check proofs → Step 14 → Publication!

[>4 months] → Translation?
Questions