IAEA Safety Standards

SPESS A

Dominique Delattre
Head, Safety Standards and Security Guidance Development Section
Scientific Secretary of the Commission on Safety Standards
Department of Nuclear Safety and Security
Global Nuclear Safety & Security Framework

- Conventions: NSC, JC, CPPNM, UNSCR 1540…etc
- IAEA Safety Standards & Security Guidance
- International Legal Instruments
- IAEA Safety Reviews and Services
- CoCs: RRs & S&S of RSs
- 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, nearly 400 publications were issued in the Safety Series.
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

- Safe Handling of Radioisotopes
- Safe Transport of Radioactive Material
- BSS for Radiation Protection
- Radioactive Waste Disposal into the Ground

1958 - Safe Handling of Radioisotopes
1961 - Regulations for the Safe Transport of Radioactive Materials
1962 - Basic Safety Standards for Radiation Protection
1965 - SS No. 15

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June 2018
1958 - 1996

- Bottom-up approach
- Collection of experience in safety practices and guides
- Identification of the requirements
- Issuance of three Safety Fundamentals
History (cont’d)

NUSS Programme

1974

RADWASS Programme

1988

Basic Safety Standards

1996

June 2018
1974 - 1996

- Four structured programmes
- Bottom-up approach
- Issuance of three Safety Fundamentals
History (cont’d)

Nuclear Safety Department

Commission and Committees

CSS
COMMISSION ON SAFETY STANDARDS

NUSSC RASSC WASSC TRANSSC

Unified Safety Fundamentals

IAEA Safety Standards
for protecting people and the environment

Fundamental Safety Principles
Safety Fundamentals

1996 1996 2006

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June 2018
1996 - 2018

1996 - Establishment of the Department of NS:

- Harmonized processes involving the Commission and the four Committees; and
- 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

2015 – Establishment of the Emergency and Response Safety Standards Committee as one of the concrete responses to the TEPCO’s Fukushima Daiichi NPPs accident

2015 – 2018 Development of the Content and Knowledge Management System and the NSS-OUI platform
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
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 133 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

IAEA
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
M. Knowledge and Content Management System
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

<table>
<thead>
<tr>
<th>General Safety Requirements</th>
<th>Specific Safety Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 2. Leadership and Management for Safety</td>
<td>2. Safety of Nuclear Power Plants</td>
</tr>
<tr>
<td>Part 3. Radiation Protection and the Safety of Radiation Sources</td>
<td>2.1. Design and Construction</td>
</tr>
<tr>
<td>Part 4. Safety Assessment for Facilities and Activities</td>
<td>2.2. Commissioning and Operation</td>
</tr>
</tbody>
</table>

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, 86 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.

SPESS D 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

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

Commission on Safety Standards (CSS)

- Nuclear Safety Standards Committee (NUSSC)
- Radiation Safety Standards Committee (RASSC)
- Waste Safety Standards Committee (WASSC)
- Transport Safety Standards Committee (TRANSSC)
- Emergency Preparedness and Response Standards Committee (EPReSC)
Commission on Safety Standards

- Standing body of senior government officials holding national responsibilities for establishing standards and other regulatory documents relevant to emergency preparedness and response, 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
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 outstanding 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 emergency preparedness and response (EPR)/nuclear/radiation/transport/waste safety standards and on activities to support the use and application of these standards

• The five Committees provide feedback and recommendations to the IAEA on its EPR/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 EPR/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 EPR/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 EPR/nuclear/radiation/transport/waste safety standards before their submission to Member States for comment.
- To review and approve the text of draft EPR/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 development and approval process for publications in the IAEA Safety Standards Series.

• 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.
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

June 2018
Step-by-step process
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 is one of the main inputs for the revision of the safety standards.
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
BASIC STRATEGIES

M. Knowledge and Content Management System:

• To ensure that the review and revision of published standards is based on a systematic feedback collection and analysis process

• To ensure that any revision of the safety standards or part of the safety standards is justified by the above mentioned feedback process, therefore also ensuring stability of the parts of the standards that remain valid

• To maintain the technical consistency among the standards through a management of the standards as a complete collection rather than by individual management of individual standards

• To enhance semantic consistency through systematic use of harmonized terminology

• To ensure the completeness of the collection through a systematic top-down development approach complemented by topical gap analyses

• To support harmonized use and application of the safety standards by enhancing their user-friendliness and by providing tools for the users to easily navigate within the whole collection.

PLATFORM NSS-OUI

https://nucleus-apps.iaea.org/nss-oui
Thank you for your attention– Questions ?