Training Course
on the IAEA Safety Standards Overview

Overview of the IAEA Safety Standards

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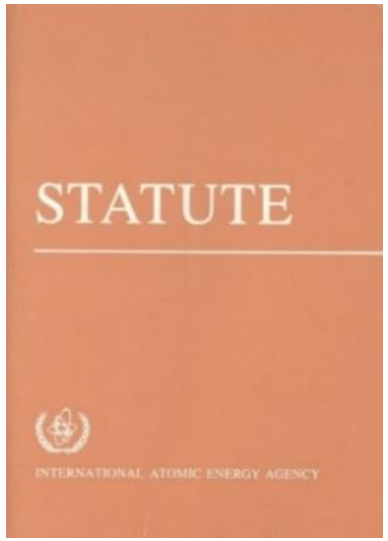
The IAEA safety standards: origin, purpose, structure and scope

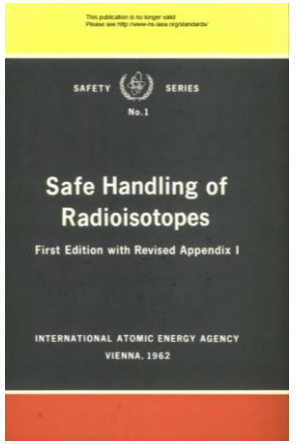
Origin



Under Article III.A.6, the IAEA is authorized:

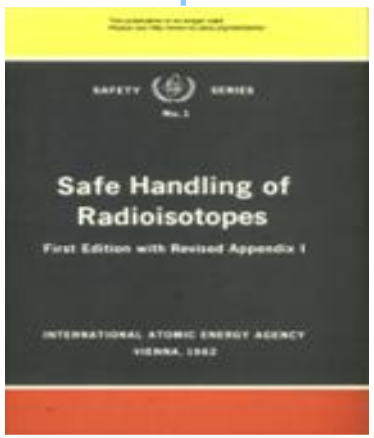
"To establish or adopt … standards of safety for protection of health and minimization of danger to life and property… and to provide for the application of these standards…"

The IAEA published its first safety standard, Safety Series No. 1, Safe Handling of Radioisotopes, in 1958, just one year after the Agency was established.

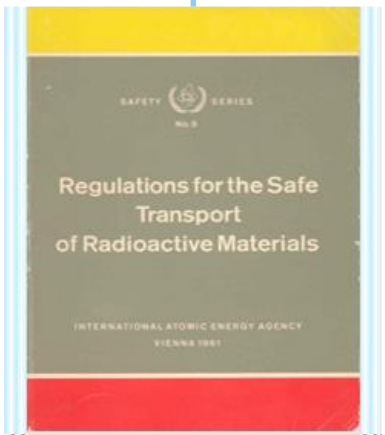


History

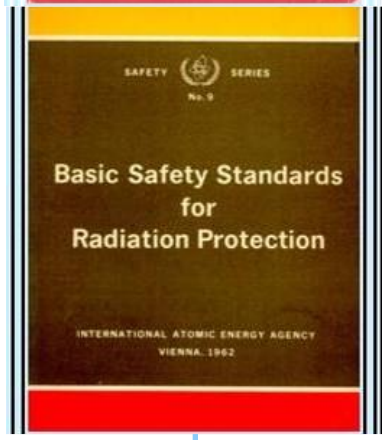
1958



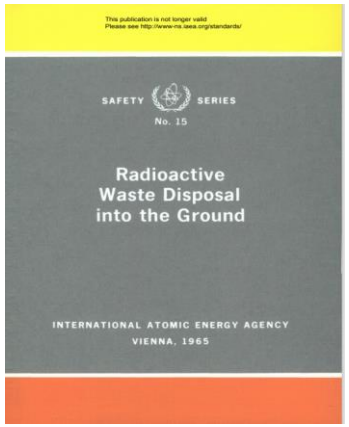
1961



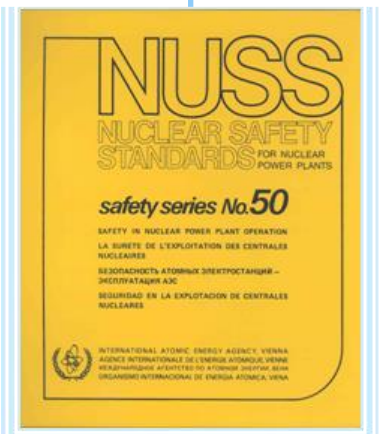
1962



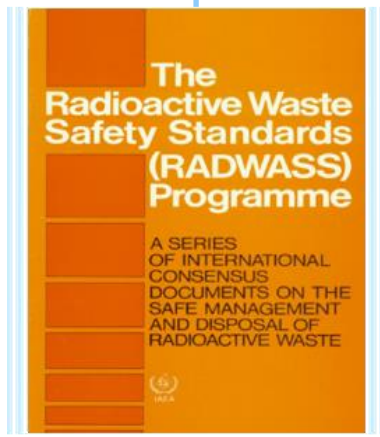
1965



1974

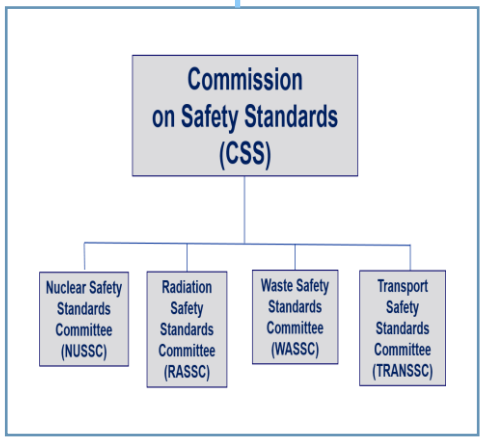


1986

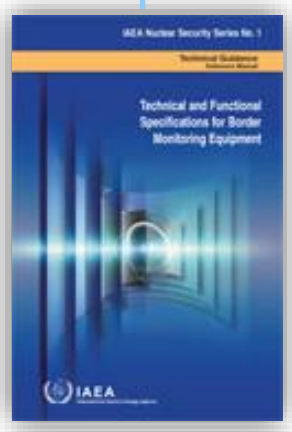


History

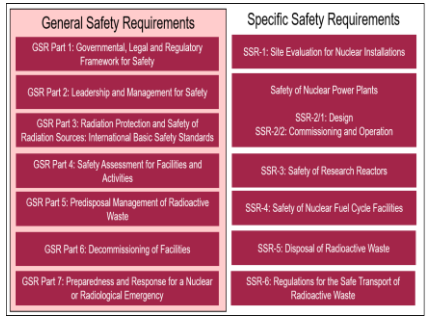
1996



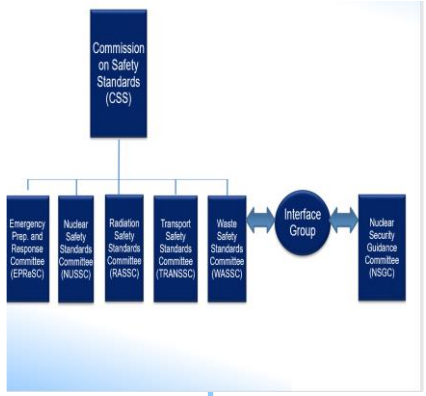
2006



2008



2011

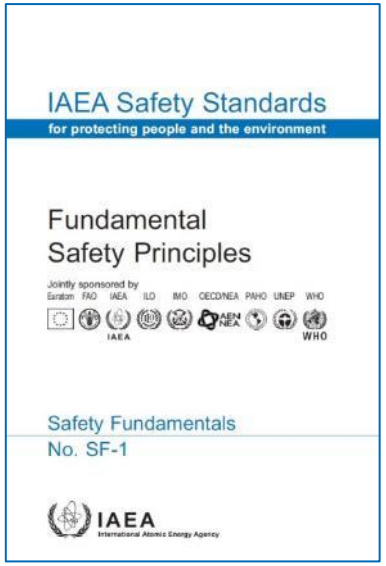


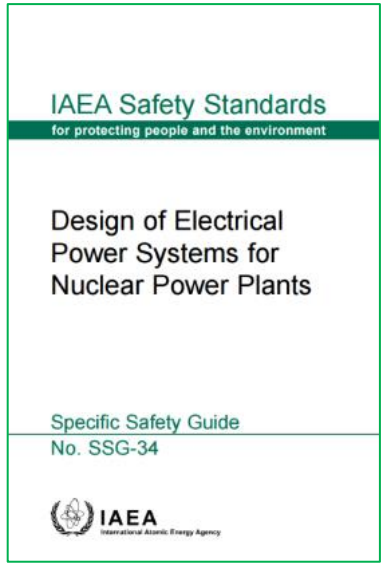
2012

2014

Purpose

- An integrated, comprehensive and consistent set of up-to-date, user friendly and fit-for-purpose safety standards of high quality
- They provide for a high level of protection for people and the environment from harmful effects of ionizing radiation
- They present international consensus on a level of safety





Scope

- IAEA safety standards are primarily addressed to national regulatory authorities and cover all regulatory and operational aspects of nuclear and radiation safety.
- They cover all facilities and activities that can give rise to radiation exposure (only peaceful facilities and activities are covered)




Safety standards are:

- Non binding on IAEA Member States but may be adopted by them
- Binding for the 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

Hierarchy

Fundamental safety objective and ten principles for protecting people and environment

Requirements that have to be met to ensure protection of people and environment

Recommendations on how to comply with the safety requirements

Safety Fundamentals No. SF-1

Principle 1: Responsibility for safety

Principle 2: Role of government

Principle 3: Leadership and management for safety

Principle 4: Justification of facilities and activities

Principle 5: Optimization of protection

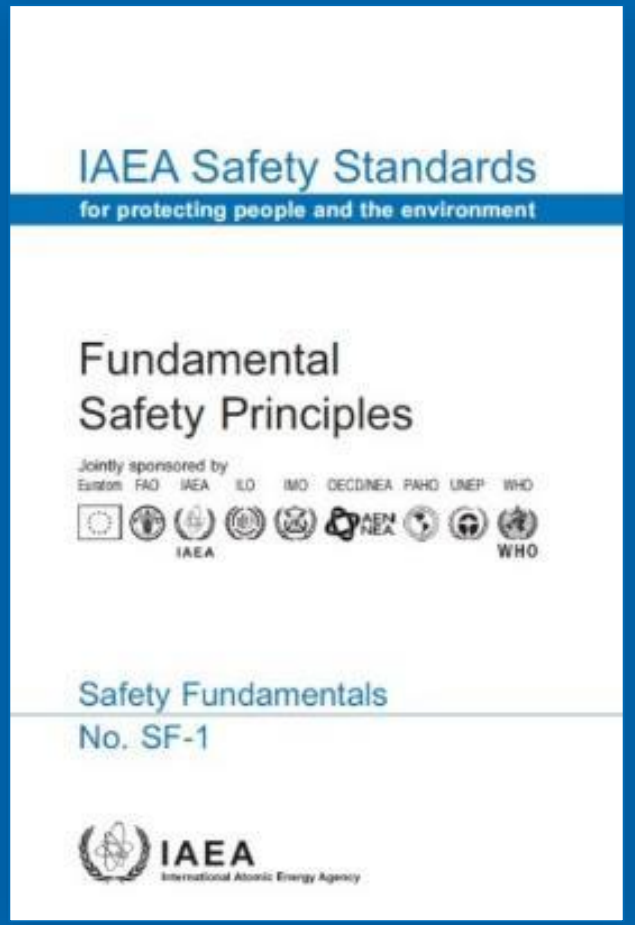
Principle 6: Limitation of risks to individuals

Principle 7: Protection of present and future generations

Principle 8: Prevention of accidents

Principle 9: Emergency preparedness and response

Principle 10: Protective actions to reduce existing or unregulated radiation risk



Safety Requirements

General Safety Requirements

All the General Safety Requirements are a single package divided in 7 parts:

Part 1. Governmental, Legal and Regulatory Framework for Safety

Part 2. Leadership and Management for Safety

Part 3. Radiation Protection and Safety of Radiation Sources

Part 4. Safety Assessment for Facilities and Activities

Part 5. Predisposal Management of Radioactive Waste

Part 6. Decommissioning of Facilities

Part 7. Preparedness and Response for a Nuclear or Radiological Emergency

Specific Safety Requirements

The Specific Safety Requirements complement the General Safety Requirements. They are individual publications setting out requirements for individual types of facility and activity.

1. Site Evaluation for Nuclear Installations

2.1. Safety of Nuclear Power Plans: Design

2.2. Safety of Nuclear Power Plans: Commissioning and Operation

3. Safety of Research Reactors

4. Safety of Nuclear Fuel Cycle Facilities

5. Disposal of Radioactive Waste

6. Regulations for the Safe Transport of Radioactive Material

Safety Requirements

GSR Part 1 (Rev. 1):
Governmental, Legal and Regulatory Framework for Safety

Requirement 3: Establishment of a regulatory body

The government, through the legal system, shall establish and maintain a regulatory body, and shall confer on it the legal authority and provide it with the competence and the resources necessary to fulfil its statutory obligation for the regulatory control of facilities and activities.

Requirement 4: Independence of the regulatory body

The government shall ensure that the regulatory body is effectively independent in its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly influence its decision making.

2.7. An independent regulatory body will not be entirely separate from other governmental bodies. The government has the ultimate responsibility for involving those with legitimate and recognized interests in its decision making. However, the government shall ensure that the regulatory body is able to make decisions under its statutory obligation for the regulatory control of facilities and activities, and that it is able to perform its functions without undue pressure or constraint.

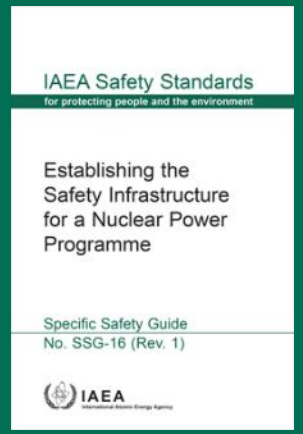
Safety Guides

- **Safety Guides provide recommendations and guidance on how to comply with the requirements**
- **Safety Guides form a matrix structure:**

General Safety Requirements

- Provide recommendations for a particular topic and can be applied to all types of facility or activity

Specific Safety Requirements



- Provide recommendations for a particular type of facility or activity

Safety Guides

GSG-12: Organization, Management and Staffing of the Regulatory Body for Safety

Financial aspects

2.11. Adequate and stable financing for all regulatory activities is fundamental to independence. The financing mechanism should be clearly defined in the legal framework. The budget for the regulatory body may include the fees levied for regulatory activities, but should not depend on fines or other penalties arising from enforcement actions, nor should it be decided by or be subject to the approval of those parts of the government that are responsible for the development, promotion and operation of nuclear technologies.

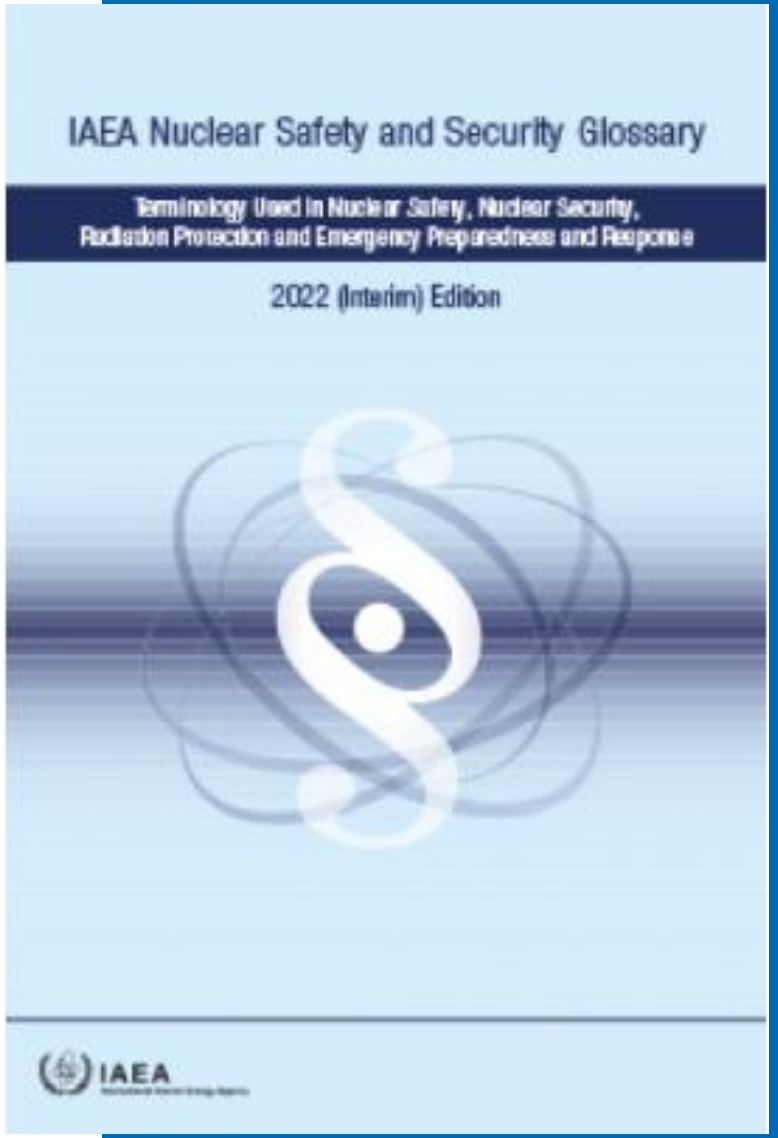
2.12. Although the overall budget of the regulatory body may be fixed by the government, the regulatory body should have the authority to distribute financial resources to its various regulatory activities for the greatest effectiveness and efficiency.

2.13. Specific provisions to fund the regulatory body should be established in the national legal framework or through the national fiscal process. How this is best accomplished will depend on a number of considerations, including the following:

— Precedents for the funding of other national regulatory organizations;
— The types and scale of regulated facilities and activities, and the associated workload based on the application of a graded approach to the execution of the functions of the regulatory body;
— How the regulatory body is structured, including its use of in-house and outsourced competences.

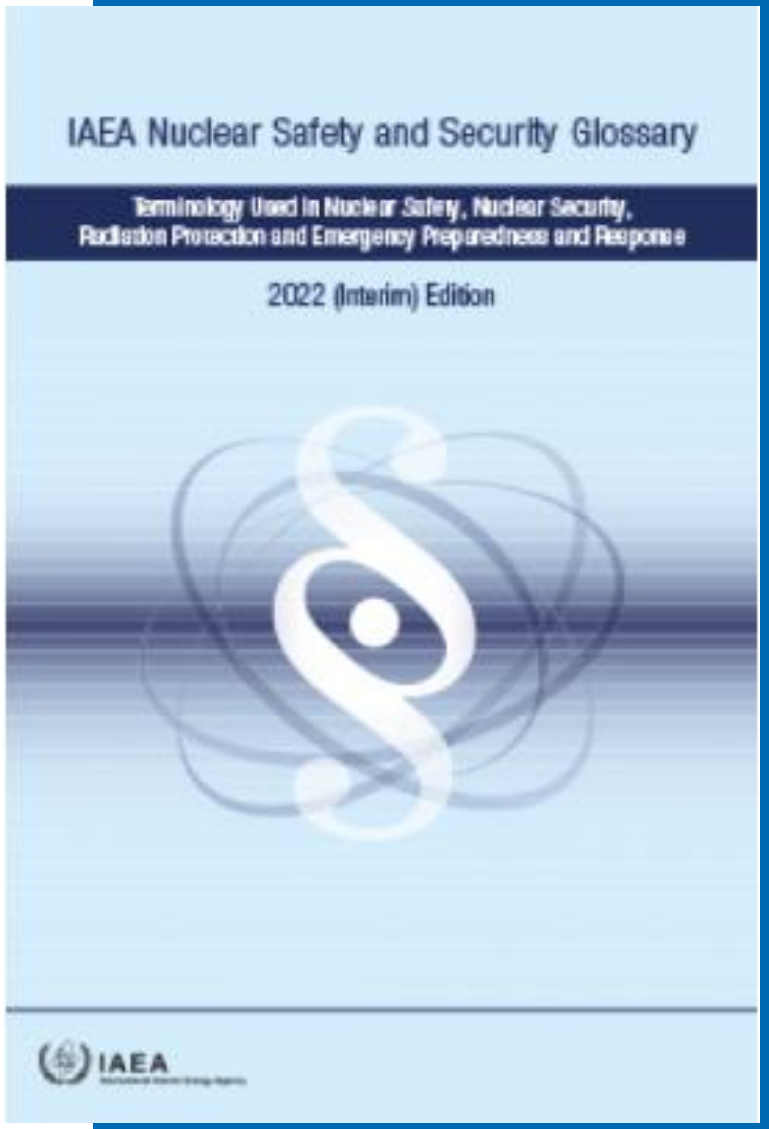
The IAEA Nuclear Safety and Security Glossary, 2022 (Interim) Edition

- Defines and explains technical terms used in IAEA safety standards and IAEA nuclear security guidance and other safety and security related IAEA publications, and provides information on their usage.
- Explains any special meanings ascribed to common words or terms
- Explains the specific meanings of the same technical term in different contexts.
- Recommends terms that should be used in IAEA publications and documents (and those that should not)



The IAEA Nuclear Safety and Security Glossary, 2022 (Interim) Edition (cont.)

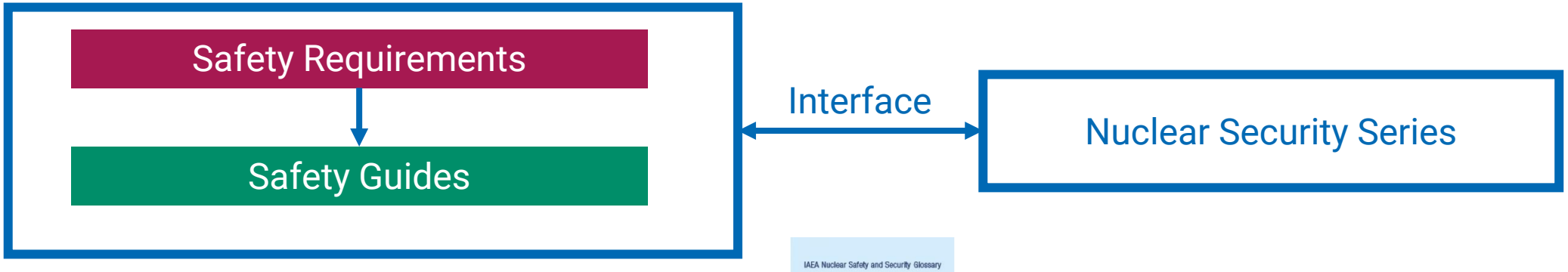
- Promotes consistency of terminology and usage in the safety standards and nuclear security guidance.
- Provides guidance primarily for the drafters and reviewers of safety standards, nuclear security guidance and other publications.
- Is a source of information for users of these publications being aware, however, that terminology and usage may differ in other contexts, such as in the publications of other organizations and in binding international legal instruments.

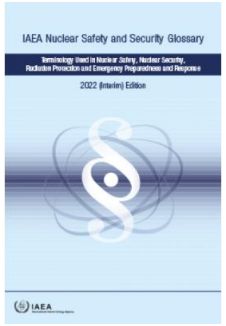


Relationships in the IAEA Safety Standards

The safety standards:

- Are a set of publications.
- Are consistent with one another and interrelated, i.e. Safety Guides provide example recommendations to fulfil the Safety Requirements.
- Interface with the Nuclear Security Series.

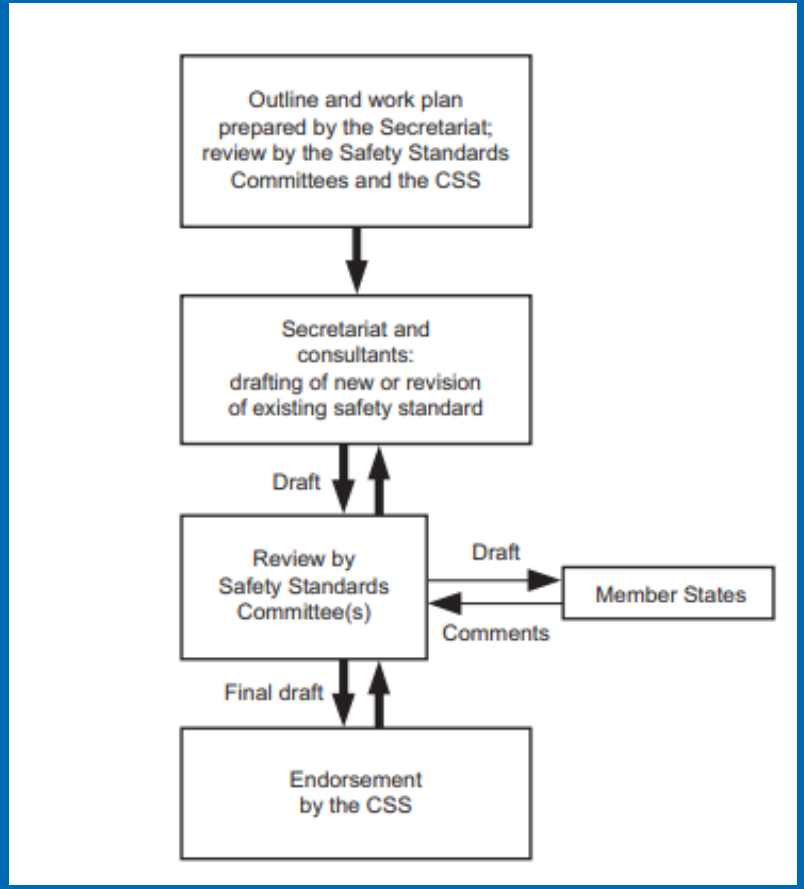




SPESS B:
How the IAEA Safety Standards are developed, established and revised

Establishment of the Safety Standards

- GOV/INF/2001/1 (update to GOV/INF/772) describes the preparation and review process for the safety standards
  - uniform preparation and review process covering all areas
  - describing the background for the development of safety standards, assigning the responsibilities for preparation and review and establishing the Safety Standards Review Committees
- GOV/INF/2015/9 describes the establishment of EPReSC



Who is involved? (1/7)

- The IAEA Secretariat
- Member States
- The Commission on Safety Standards
- The Safety Standards Committees and the Nuclear Security Guidance Committee
- The IAEA's Board of Governors
- The United Nations, its specialized agencies (such as the FAO, ICAO, ILO, IMO, WHO) and other intergovernmental organizations
- International experts

Who is involved? (2/7)

MEMBER STATES

Member States have a formal opportunity to comment on draft standards during a 120 day commenting period.

Who is involved? (3/7)

COMMISSION ON SAFETY STANDARDS

The Commission on Safety Standards comprises senior government officials with national responsibilities for safety; they provide guidance at the strategy and policy level and endorse proposals for new standards and new draft standards for publication.

Who is involved? (4/7)

57th meeting of the Nuclear Safety Standards Committee (NUSSC)

REVIEW COMMITTEES

The Safety Standards Committees and Nuclear Security Guidance Committee comprise senior representatives in the areas of emergency preparedness and response, nuclear safety, radiation safety, transport safety, waste safety and nuclear security. They make recommendations on the safety standards programme and provide feedback and recommendations on areas for improvement.

Commission & Committees

Commission on Safety Standards (CSS)

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

Who is involved? (5/7)

BOARD OF GOVERNORS

The IAEA's Board of Governors approves Safety Requirements and Safety Fundamentals.

Who is involved? (6/7)

UNITED NATIONS AGENCIES

The United Nations, its specialized agencies (such as the FAO, ICAO, ILO, IMO, WHO) and other intergovernmental organizations are represented as observers on the Safety Standards Committees relevant to their area and may be invited to co-sponsor standards in their field of competence. By cosponsoring a standard, the organization commits to applying the standard in its work and in its advice to Member States. Co-sponsorship also ensures that the United Nations provides consistent advice and assistance to all its Member States.

Who is involved? (7/7)

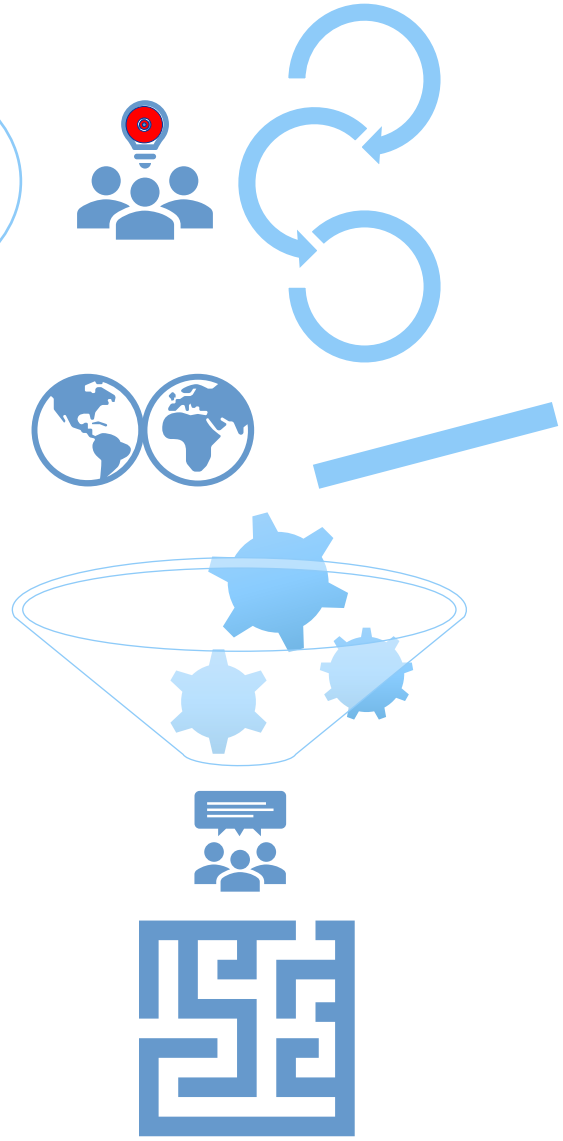
INTERNATIONAL EXPERTS

International experts are involved in the drafting of standards. Users are invited to provide feedback on the standards, thereby contributing to their review. The users of standards include regulatory bodies, operating organizations, State officials, governments, health sector, manufacturers, vendors, technical and scientific support organizations, designers, suppliers and relevant non-governmental international organizations such as ISO, ICRP.

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

Prepared by Secretariat and experts
Reviewed by the Committees and Commission on Safety Standards

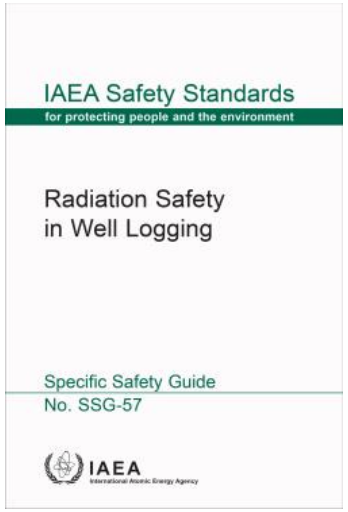
Reviewed
by the Member States



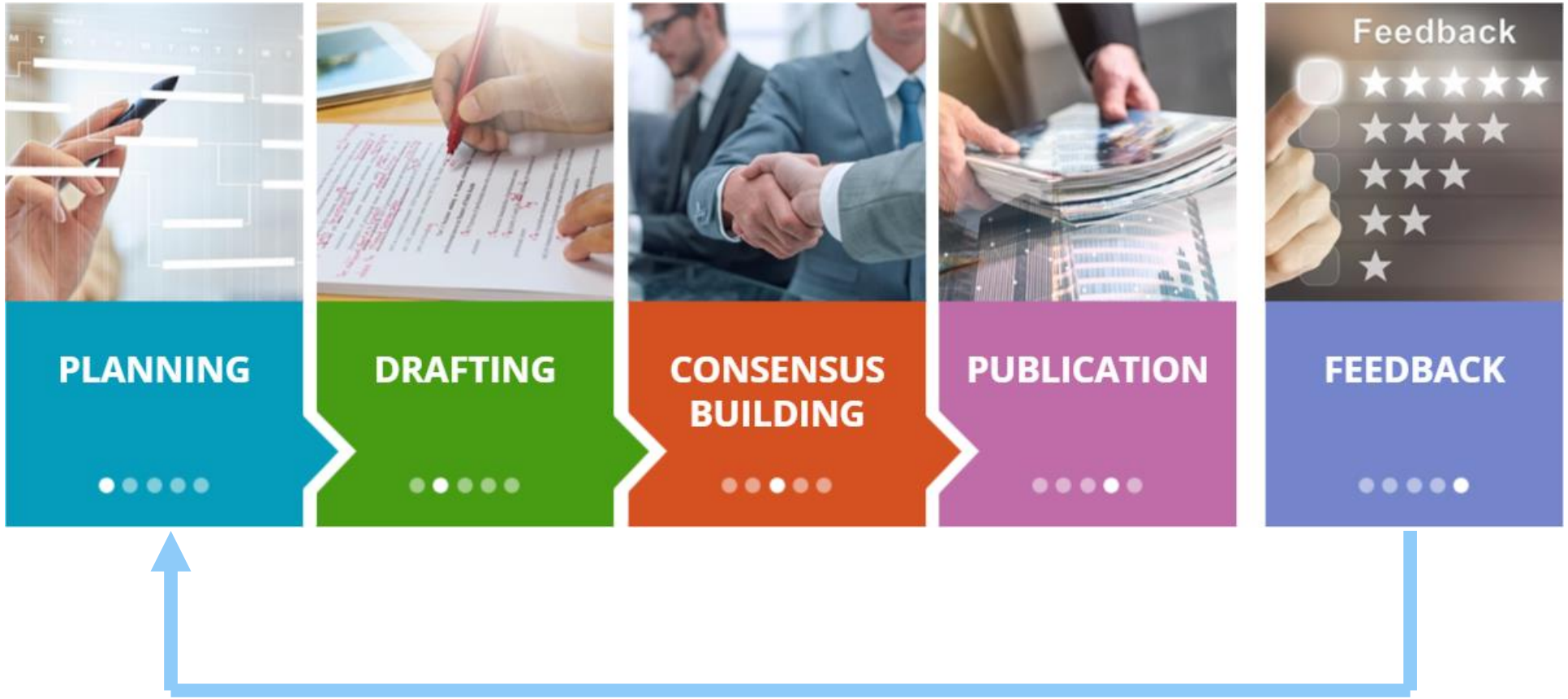
Reviewed for consistency

Reviewed by the Committees and Commission on Safety Standards

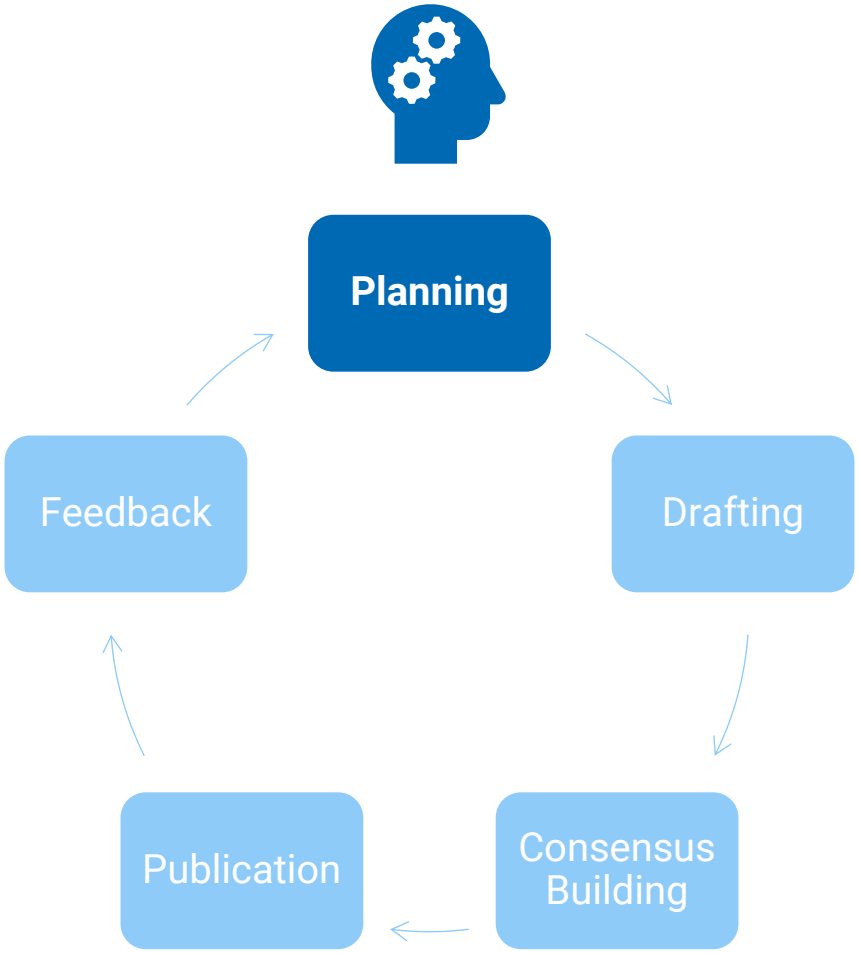
Endorsement by the IAEA's Director General or BoG



Processes for developing IAEA Safety Standards



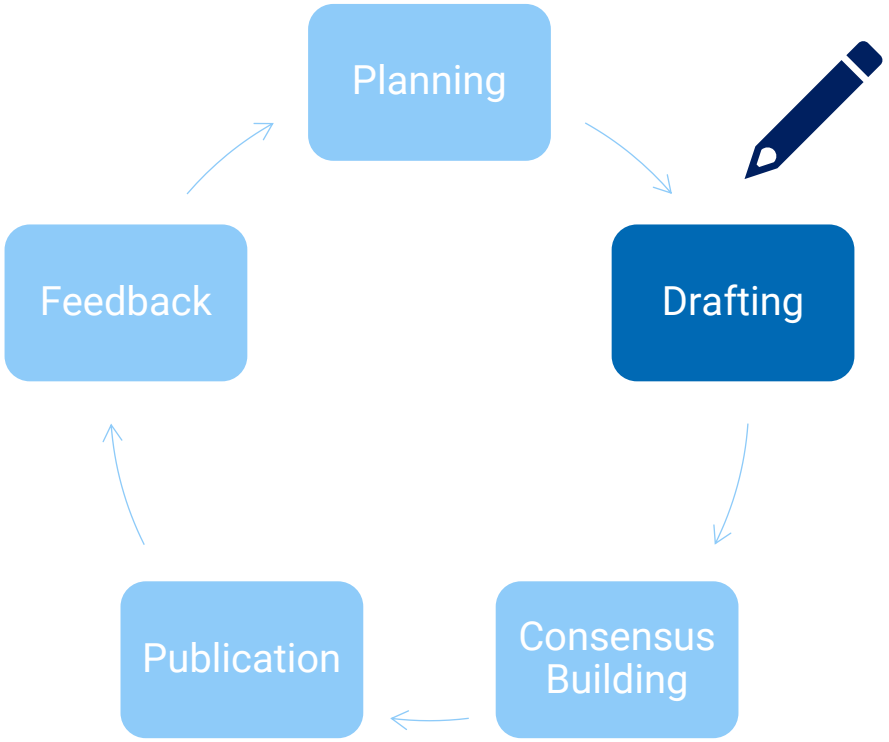
Processes for developing IAEA Safety Standards



Planning

- The need for a new or revised standard is identified.
- A Document Preparation Profile (DPP) is prepared.
- The relevant Committees review the DPP.
- The CSS reviews the DPP and confirms its place in the Safety Standards Series.

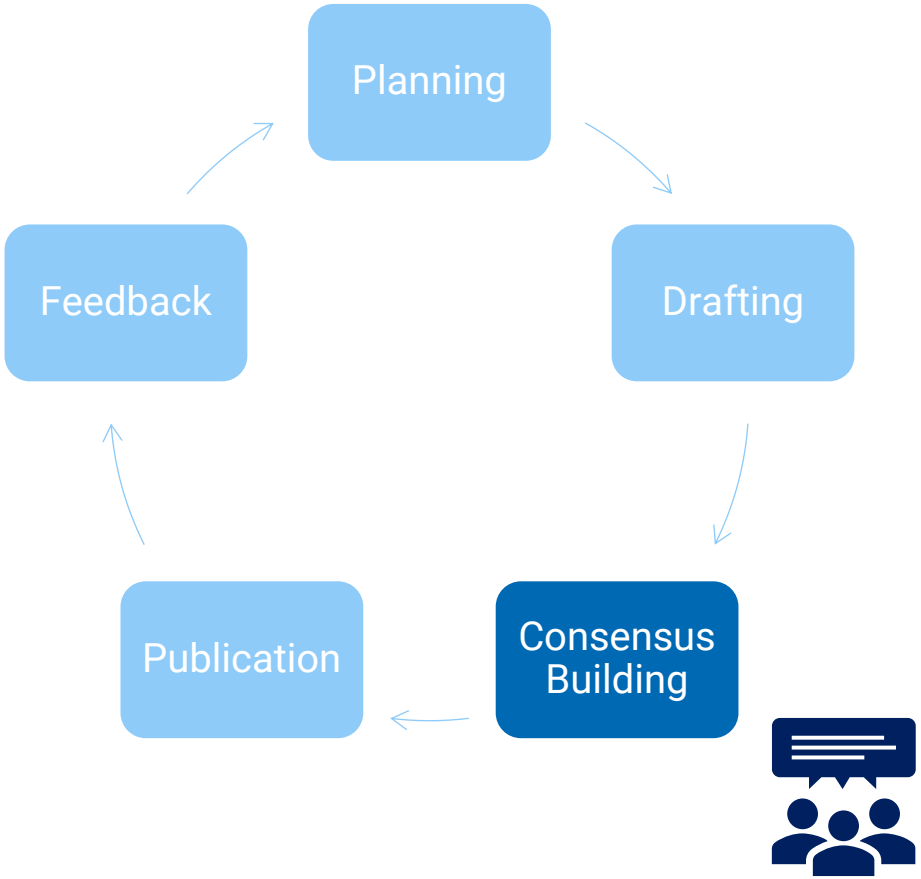
Processes for developing IAEA Safety Standards



Drafting

- IAEA staff and experts from regulatory bodies, industry and other interested parties in Member States draft the standard.
- The Safety Standards Committees review the draft standard to ensure it meets the specifications of the DPP and that it is of sufficient quality to be sent to Member States for comment.

Processes for developing IAEA Safety Standards



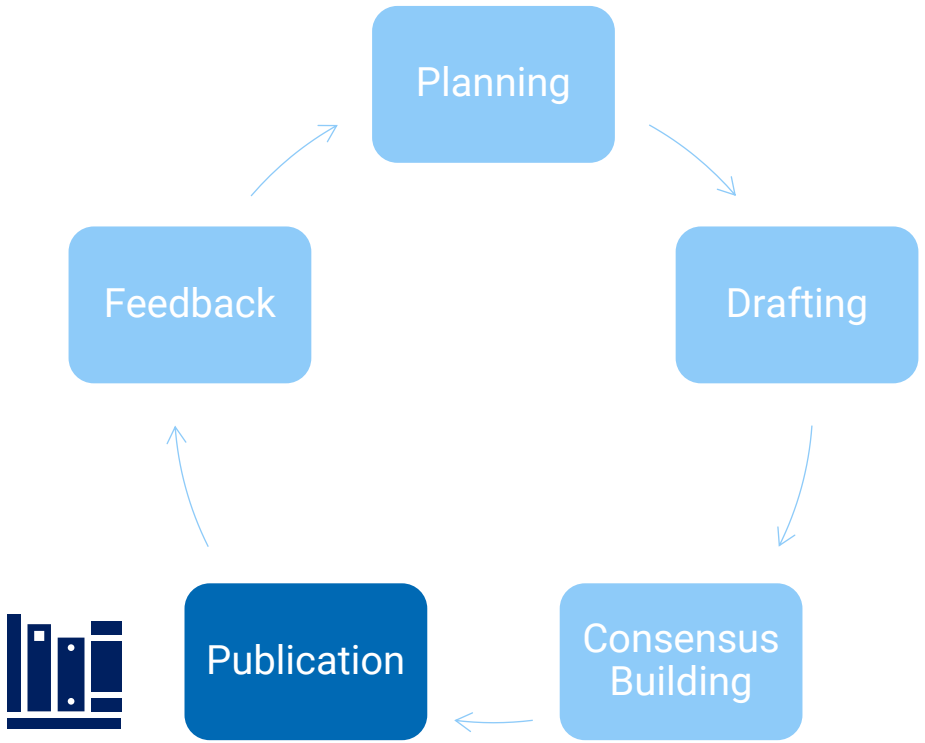
Member States Review

- Member States have 120 days to review the draft standard and provide comments.

Standardization and refining

- The Secretariat carries out a comprehensive review of the text of the draft standard.
- The Safety Standards Committees review the resolution of Member State comments and the revised draft.
- The IAEA's professional editors edit the draft.
- The final edited draft is presented to the CSS for their endorsement for publication.

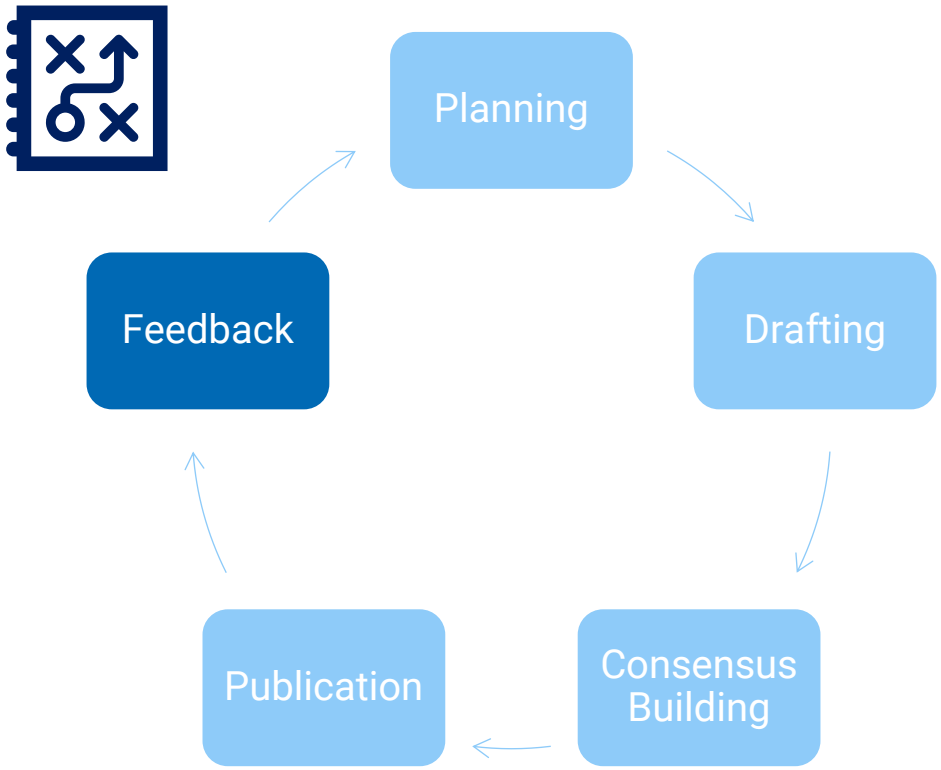
Processes for developing IAEA Safety Standards



Publication

- The IAEA Board of Governors approves Safety Requirements and Safety Fundamentals for publication.
- The IAEA Director General approves Safety Guides for publication.
- New standards are published online and in printed format.
- New standards are included in the online user interface NSS-OUI.

Processes for developing IAEA Safety Standards

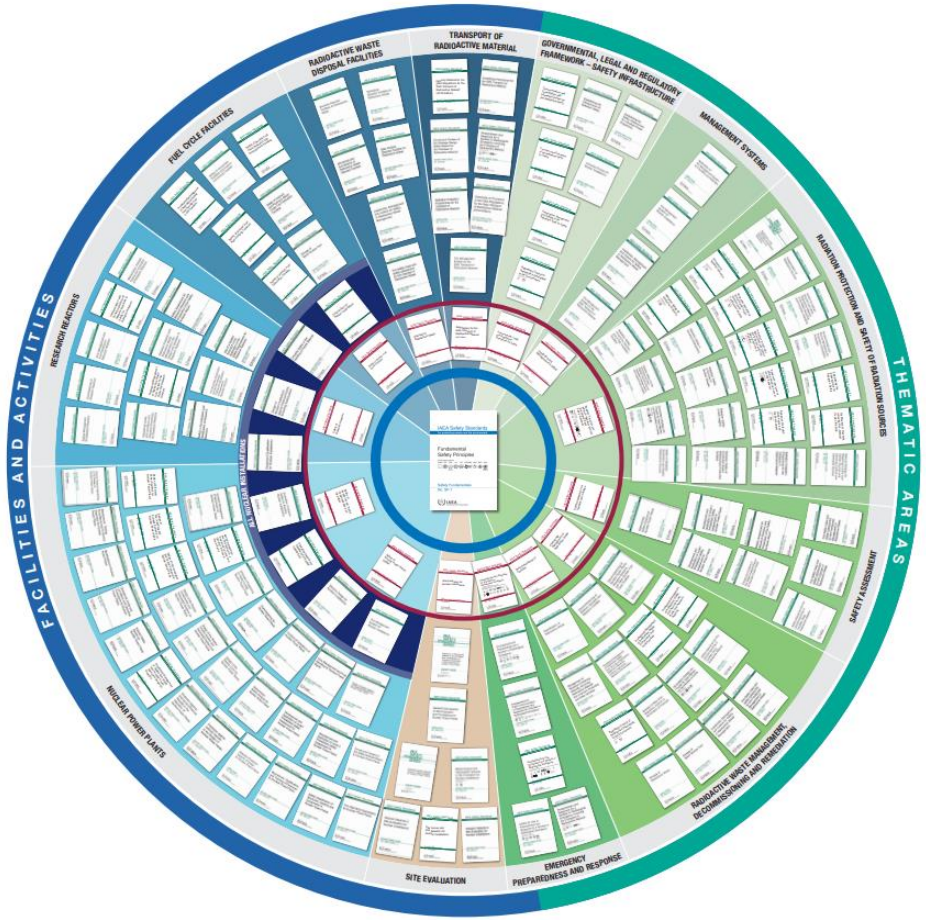


Feedback

- Feedback is used to identify areas where new standards need to be developed or where improvements are needed.
- The IAEA Secretariat collects feedback from safety review missions, lessons learned from events, and experience in the use and application of the safety standards.
- The NSS-OUI tool enables users to easily and quickly provide feedback.

Publications in the IAEA Safety Standards Series

Current Status of the Safety Standards



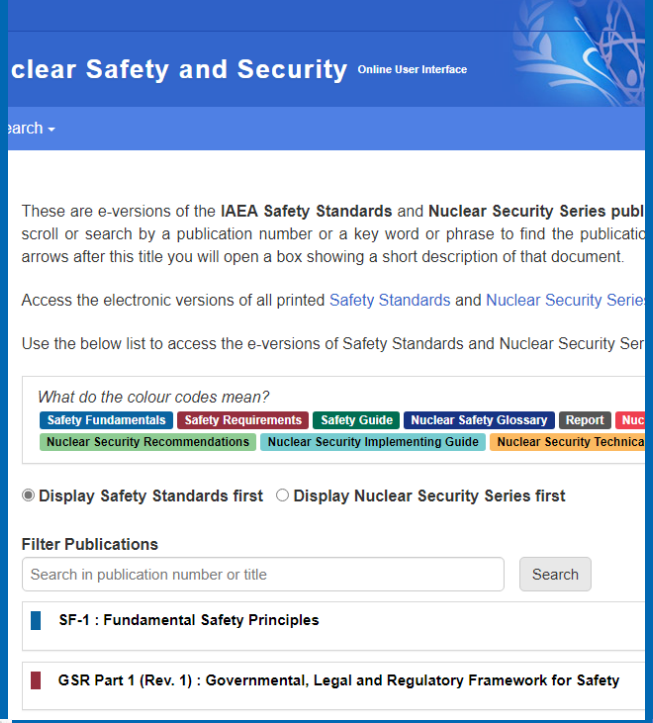
133 safety standards published

Fundamentals and Requirements issued in all official languages

About 20% of standards are under revision

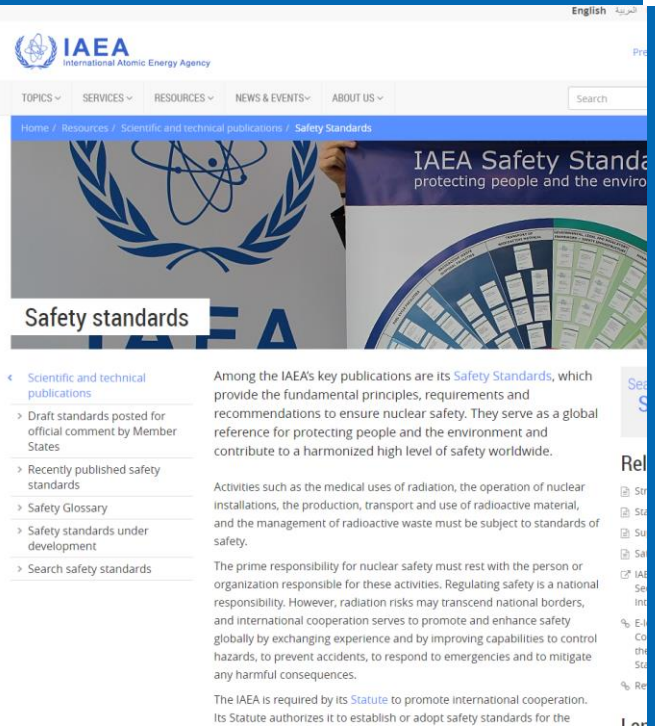
The expected total number of standards is 145

Other Resources



[NSS-OUI]

[IAEA Nuclear Safety and Security Glossary]



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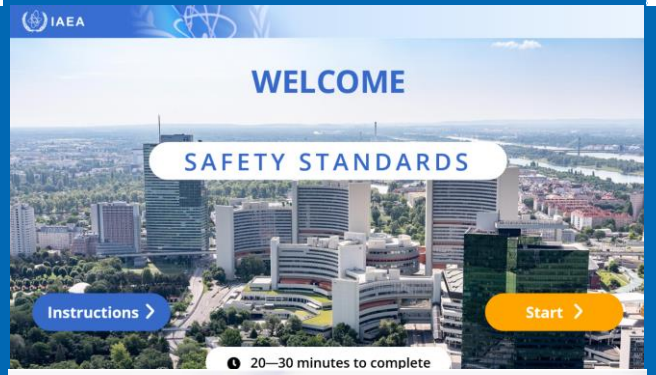

E-learning:

[IAEA Safety Standards Overview]

[Guidance for External Contributors on Drafting IAEA Safety Standards]

Thank you!

Safety-Standards.Contact-Point@iaea.org