

# IAEA SAFETY STANDARDS

Nuclear Safety and Security Programme



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“ The IAEA safety standards are the global reference for protecting people and the environment from harmful effects of ionizing radiation. ”



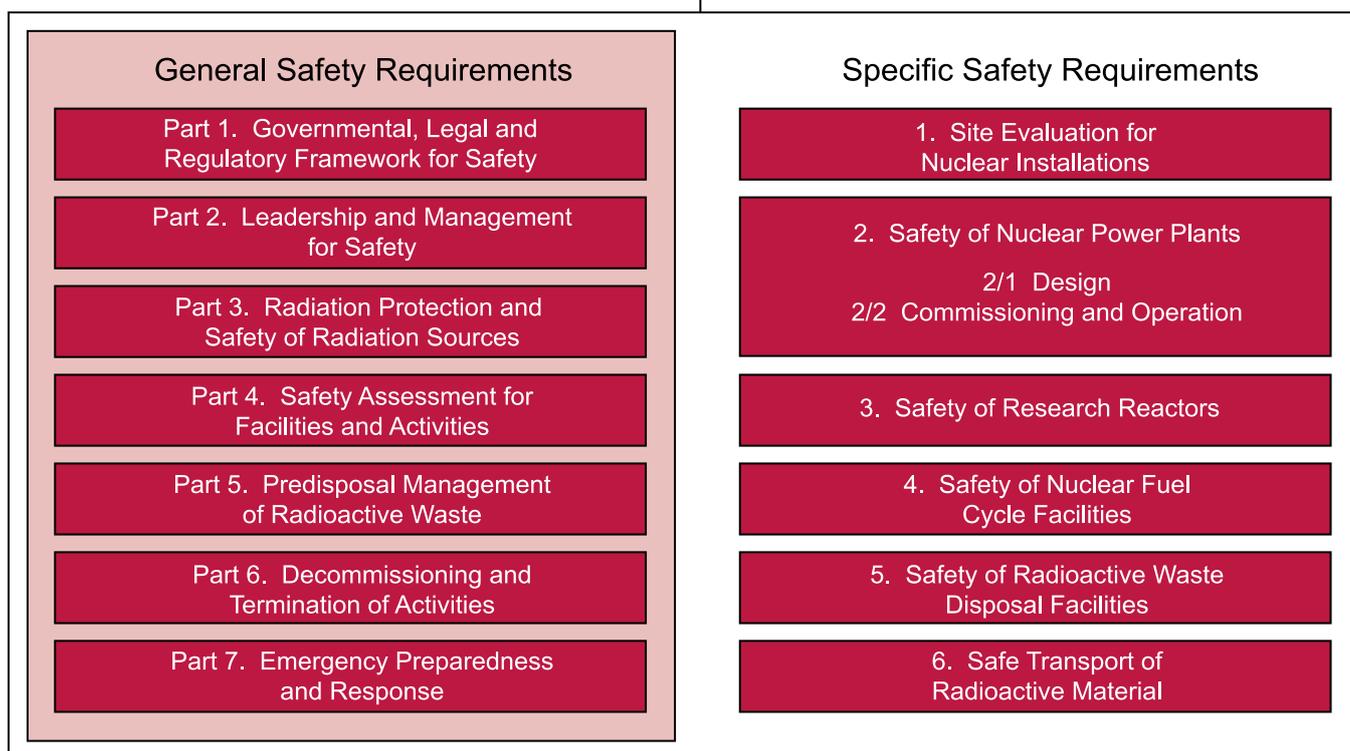
*The IAEA Safety Standards*

Radioactivity is a natural phenomenon and natural sources of radiation are features of the environment. Radiation and radioactive substances have many beneficial applications, ranging from power generation to uses in medicine, industry and agriculture. The radiation risks to workers, patients, the public and the environment that may arise from these applications have to be assessed and, if necessary, controlled. Therefore, activities such as medical uses of radiation, the operation of nuclear installations, the production, transport and use of radioactive material, and the management of radioactive waste must be subject to standards of safety. The prime responsibility for safety must rest with the person or organization responsible for these activities. Regulating safety is a national responsibility. However, radiation risks may transcend national borders, and international cooperation serves to promote and enhance safety globally by exchanging experience and by improving capabilities to control hazards, to prevent accidents, to respond to emergencies and to mitigate any harmful consequences. The IAEA is required by its Statute to promote international cooperation.

## Safety through International Standards

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## Safety Fundamentals Fundamental Safety Principles



## Collection of Safety Guides

*The long term structure of the IAEA Safety Standards Series*

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### The IAEA Safety Standards

The IAEA safety standards have a status derived from the IAEA's Statute, which authorizes the IAEA "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 (including such standards for labour conditions), and to provide for the application of these standards". The IAEA safety standards provide a robust framework of fundamental principles, requirements and recommendations to ensure safety. They are developed through an open and transparent

process for gathering, integrating and sharing the knowledge and experience gained from the use of technologies and from the application of the safety standards, including emerging trends and issues of regulatory importance. They contribute to the establishment of a harmonized high level of safety worldwide by serving as the global reference for protecting people and the environment.

### Hierarchy

#### *Safety Fundamentals*

As the primary publication in the IAEA Safety Standards Series, the publication Fundamental Safety Principles (SF-1) establishes the fundamental safety objective and principles of protection and safety.

#### *Safety Requirements*

An integrated and consistent set of Safety Requirements publications establish the requirements that must be met to ensure the protection of people and the environment, both now and in the future. The requirements are governed by the objectives and principles of the

Safety Fundamentals. If the requirements are not met, measures must be taken to reach or restore the required level of safety. Their format and style facilitate their use by Member States for the establishment, in a harmonized manner, of their national regulatory framework.

### *Safety Guides*

IAEA Safety Guides provide recommendations and guidance on how to comply with the requirements. They indicate an international consensus that it is necessary to take the measures recommended (or equivalent alternative measures). The Safety Guides present international good practices, and increasingly they reflect best practices, to help users striving to achieve high levels of safety.

## **The safety and security interface**

Safety and security both require continued vigilance. Safety measures and security measures for facilities and activities must be designed and implemented in an integrated manner, so that security measures do not compromise safety and safety measures do not compromise security. International safety standards and security guidelines and recommendations provide practical advice to States on how to meet their international obligations in this regard. The Nuclear Security Guidance Committee (NSGC) reviews drafts for publication in the IAEA Nuclear Security Series.

## **Main users of the IAEA safety standards**

The users of safety standards in Member States differ depending on the category of safety standards. The principal users are the regulatory bodies and other relevant national authorities. The safety standards are also used by joint sponsoring organizations, by organizations that design, manufacture and operate nuclear facilities, as well as by organizations involved in the use of radiation related technologies. The standards are used by the IAEA itself in its safety reviews and for developing education and training courses.

## **Development process**

The preparation and review of safety standards involves the IAEA Secretariat and the review committees for nuclear safety (NUSSC), radiation safety (RASSC), the safety of radioactive waste (WASSC), the safe transport of radioactive material

(TRANSSC) and emergency preparedness and response (EPRReSC), and also, in the case of an interface of safety with security, the NSGC. The Commission on Safety Standards (CSS) oversees the safety standards programme. The members of the CSS are appointed by the Director General and include senior government officials having responsibility for establishing national standards and regulations. All IAEA Member States may nominate experts for the safety standards committees and are consulted at the drafting stage. Another important aspect of the development process is interaction with other international organizations.

## **Scope and application**

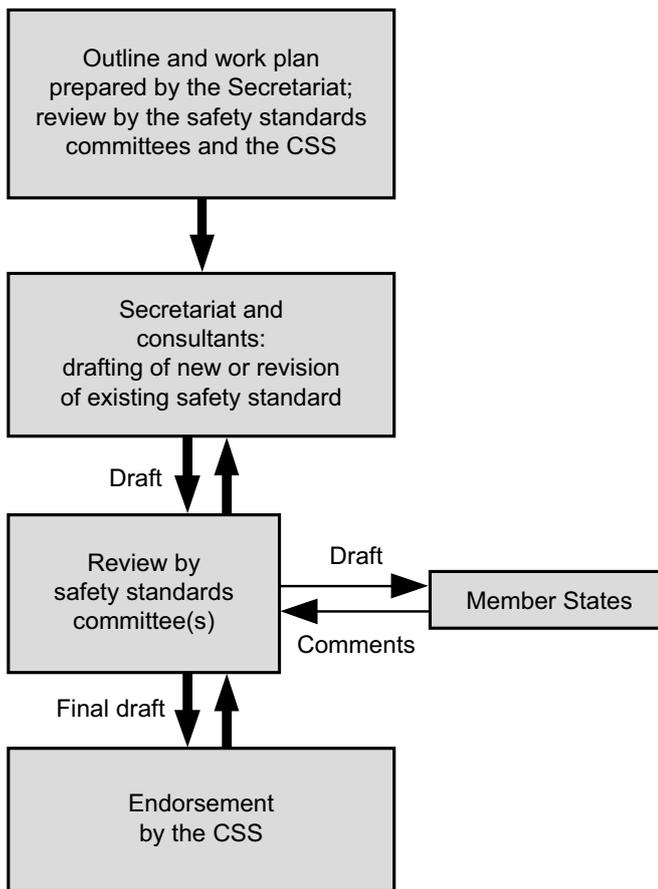
The IAEA safety standards are applicable, as relevant, throughout the entire lifetime of facilities and activities — existing and new — utilized for peaceful purposes and to protective actions to reduce existing radiation risks. The scientific considerations underlying the IAEA safety standards provide an objective basis for decisions concerning safety; however, decision makers must also make informed judgements and determine how best to balance the benefits of an action or an activity against the associated radiation risks.

The IAEA Statute makes the safety standards binding on the IAEA in relation to its own operations. Any State entering into an agreement with the IAEA concerning any form of IAEA assistance is required to comply with the requirements of the standards that pertain to the activities covered by the agreement.

The IAEA safety standards also form the basis for all of the IAEA safety services, such as the Integrated Regulatory Review Service, the Operational Safety Assessment Review Team and other review services.

International conventions contain requirements similar to those in the standards, and make them binding on Contracting Parties. The safety standards, supplemented by international conventions, industry standards and detailed national requirements, establish a consistent basis for protecting people and the environment.

However, there will also be special aspects of safety that need to be assessed case by case. At the national level, for example, the safety standards addressing planning or design aspects of safety are intended to apply primarily to new facilities



*The process for developing a new safety standard or revising an existing standard.*

and activities. The requirements specified in the IAEA safety standards might not be fully met at some facilities built to earlier standards. The way in which the safety standards are to be applied to such facilities is a decision for individual States.

## Interpretation of the text

The Safety Requirements use ‘shall’ statements for all requirements. Many requirements are not addressed to a specific party, the implication being that the appropriate party or parties are required to be responsible for fulfilling them. Recommendations are provided in Safety Guides and are expressed as ‘should’ statements, indicating an international consensus that it is necessary to take the measures recommended (or equivalent alternative measures) for complying with the requirements. Safety related terms are to be understood as defined in the IAEA Safety Glossary, available in Arabic, Chinese, English, French, Russian and Spanish (<http://www-ns.iaea.org/standards/safety-glossary.htm>).

## IAEA safety standards webpage

The safety standards web page at <http://www-ns.iaea.org/standards/> provides general information on the IAEA safety standards and the processes for their establishment and approval.

A status list is provided and updated regularly. It provides information on published safety standards and the status of those under development. It includes links to the available publications in English and in the IAEA’s other official languages (Arabic, Chinese, French, Russian and Spanish).

The Safety and Security Series Online User Interface (NSS-OUI) provides direct access to the IAEA Safety Standards and Security Guidance publications and facilitates the navigation within the series, in particular the identification of the guidance material established to support the implementation of requirements or recommendations (<https://nucleus-apps.iaea.org/nss-oui/>).

For providing feedback or seeking additional information, please refer to the web page under ‘How are the Safety Standards developed?’ or contact the Department of Nuclear Safety and Security. The members of the CSS and of the safety standards committees may also be contacted as national sources of information on the IAEA safety standards.

## Consultation and collaboration with international organizations

The findings of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the recommendations of international expert bodies, notably the International Commission on Radiological Protection (ICRP), are taken into account in developing the standards. Some standards are developed in cooperation with other international organizations, including the European Commission (EC), the Food and Agriculture Organization of the United Nations (FAO), the International Labour Organization (ILO), the International Maritime Organization (IMO), the OECD Nuclear Energy Agency (OECD/NEA), the Pan American Health Organization (PAHO), the United Nations Environment Programme (UNEP) and the World Health Organization (WHO).



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## **MORE INFORMATION & POINT OF CONTACT**

For further information or for providing feedback on the IAEA Safety Standards, please visit: <http://www-ns.iaea.org/standards/>

Contact: [Safety.Standards@iaea.org](mailto:Safety.Standards@iaea.org)

Or write to:

Office of Safety and Security Coordination, Department of Nuclear Safety and Security, International Atomic Energy Agency, Vienna International Centre, PO Box 100, 1400 Vienna, Austria





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