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The Role of the Integrated Regulatory Review Service (IRRS) in improving nuclear and radiation safety in Indonesia and worldwide

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International Atomic Energy Agency

Contents

- Introduction: IAEA Safety Standards and their Application
- Integrated Regulatory Review Service
  - MS's needs
  - Objectives, Structure, Process
  - Role in improving Safety worldwide

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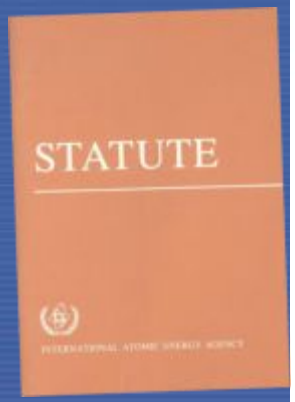
The International Atomic Energy Agency (IAEA)

The 3 Pillars:

- **Promotion of peaceful uses** of nuclear science and technology
- **Promotion of safety** and protection of people and environment in all applications
- **Non proliferation**



The IAEA Mission Statement

The International Atomic Energy Agency:

- is an independent intergovernmental, science and technology-based organization, in the United Nations family, that serves as the global focal point for nuclear cooperation;
- assists its Member States, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing Member States;
- develops nuclear safety standards and, based on these standards, promotes the achievement and maintenance of high levels of safety in applications of nuclear energy, as well as the protection of human health and the environment against ionizing radiation;
- verifies through its inspection system that States comply with their commitments, under the Non-Proliferation Treaty and other non-proliferation agreements, to use nuclear material and facilities only for peaceful purposes.

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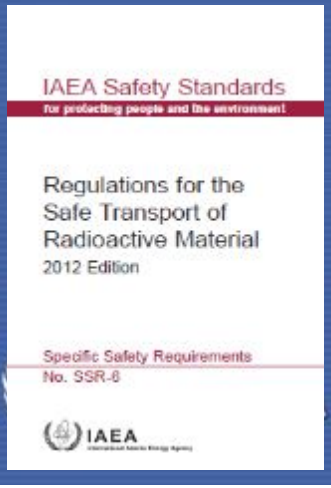
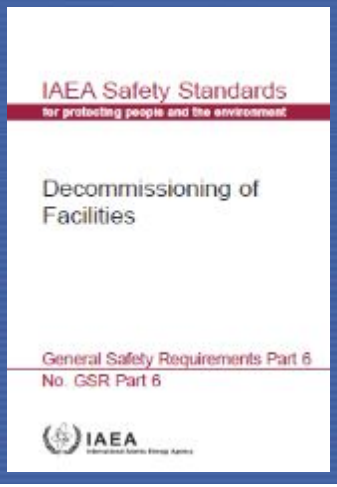
IAEA Statutory Safety Functions

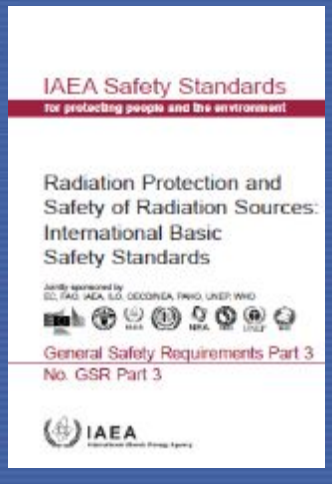
IAEA Functions in Radiation & Waste Safety (Article III.A.6)

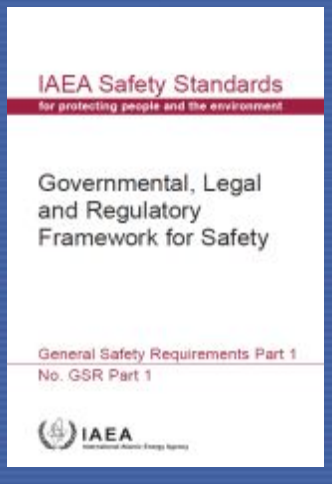
To establish standards of safety

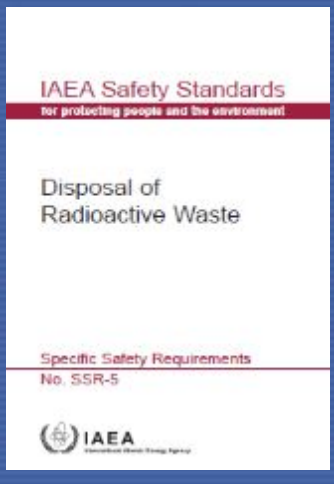
To provide for the application of the standards







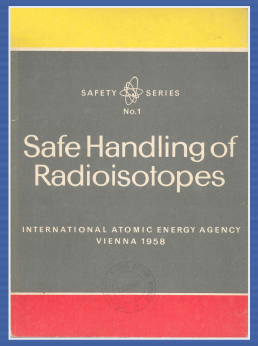


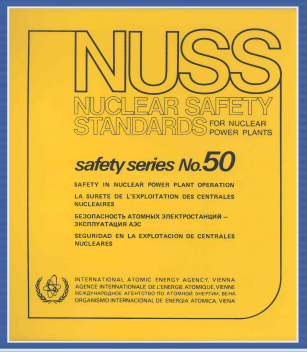


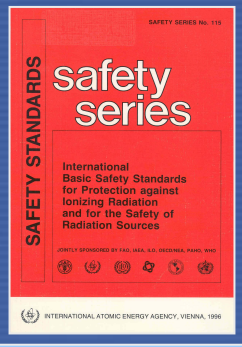
IAEA Safety Standards

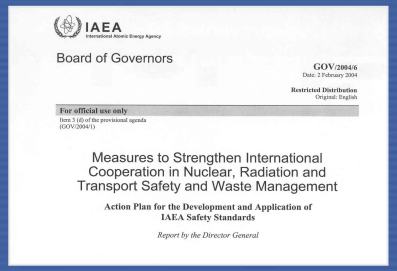
Introduction

IAEA Safety Standards









1958 1974 1996 2004 2006

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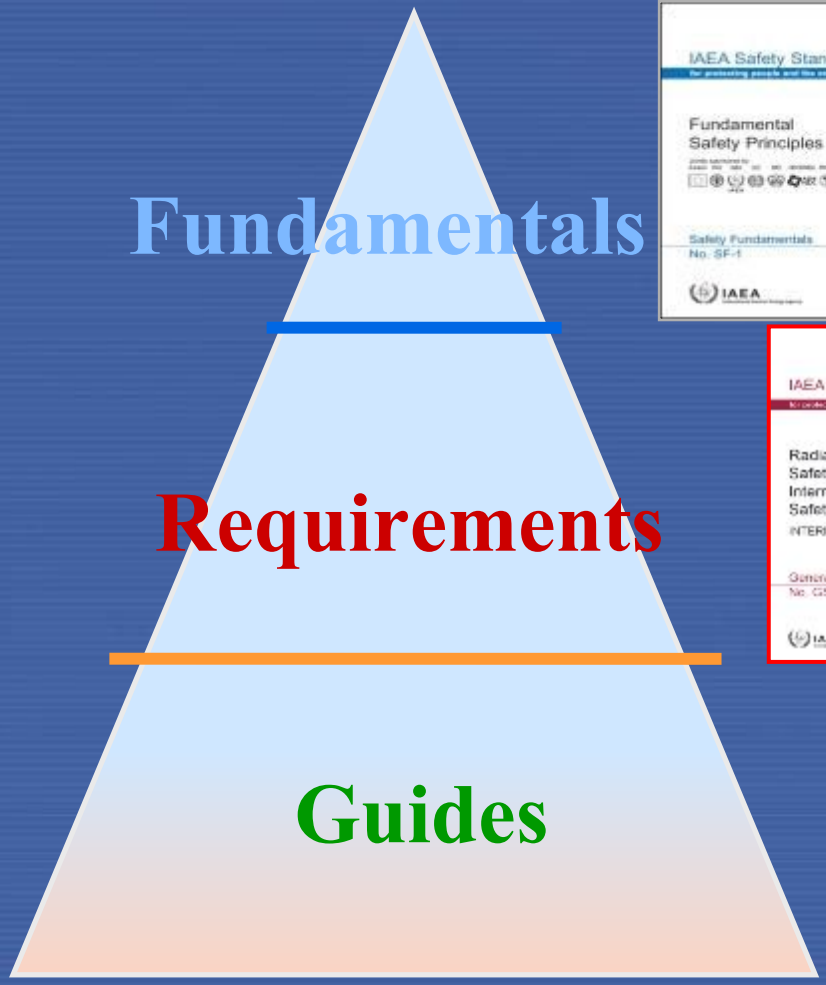
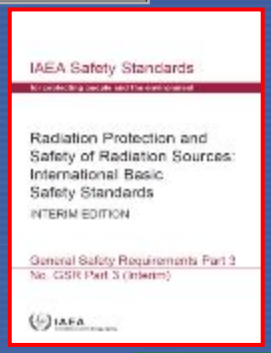
Hierarchy of Safety Standards





underlying principles
– aimed at politicians and regulatory authorities

obligations and responsibilities
("shall" statements)

recommendations to support requirements
("should" statements)

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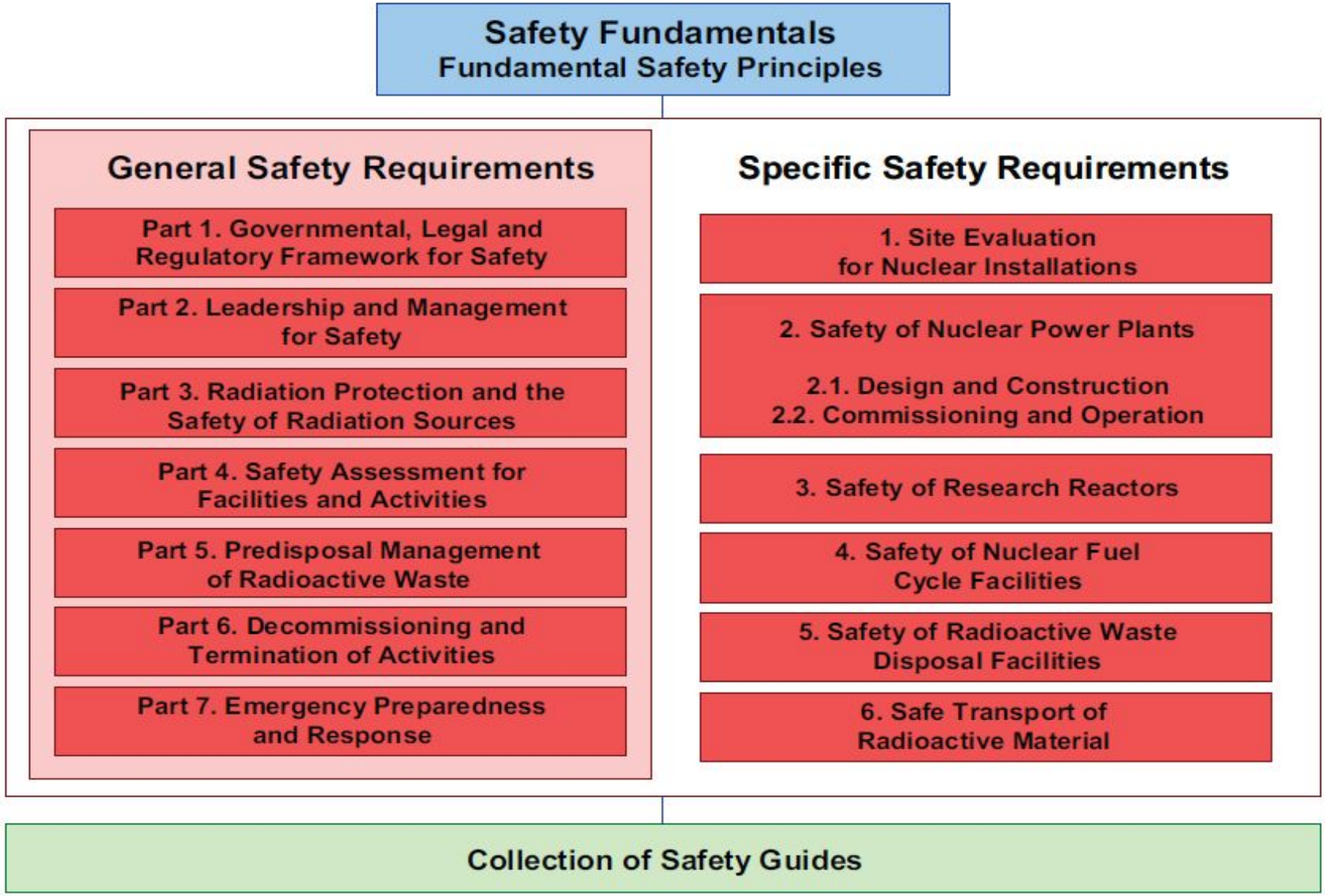
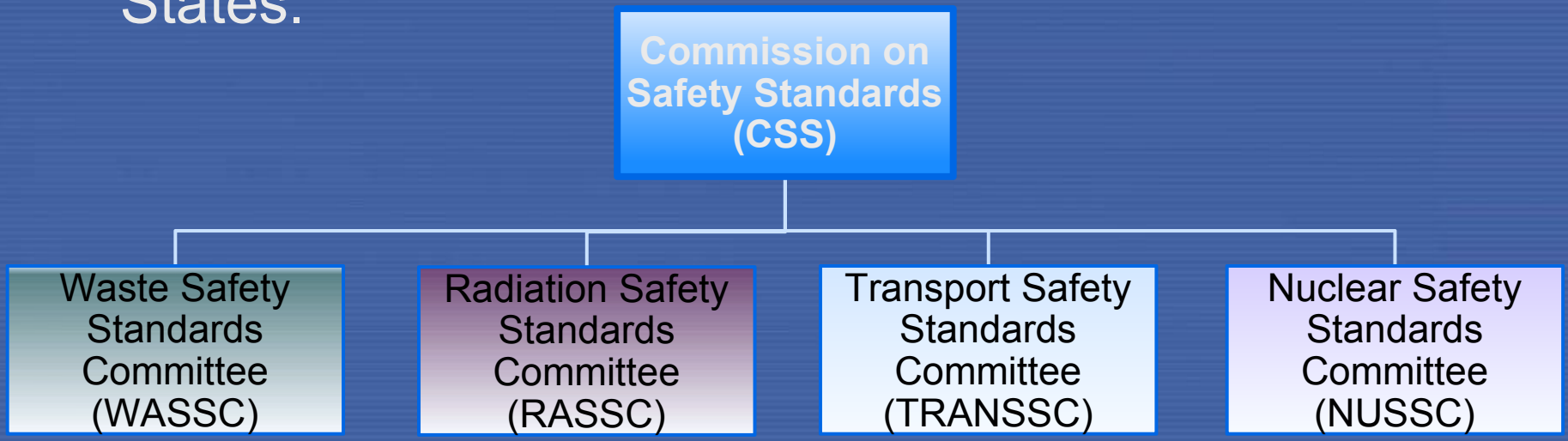
Structure of Safety Standards



Committees for SS Development

- **One commission** and **four safety standards committees** (SSCs) oversee the development and approval.
- CSS members appointed by the DG
- Committee members are nominated by Member States.



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Need for International Safety Standards

While **radiation protection and safety is a national responsibility**, **international standards and approaches:**

1. promote **consistency;**
2. help to **provide assurance** that nuclear and radiation related technologies are used safely; and
3. facilitate **international technical cooperation and trade.**

Basic Facts : Safety Standards

- The IAEA “maintains” about 130 safety standards.
- Programme initiated 31 March 1960 (INFCIRC/18).
- Covers **nuclear**, **radiation**, **transport** and **waste safety**.
- **Not legally binding to the Member States**, but MSs can adopt them at their own discretion.
- **Legally binding to the IAEA Secretariat**.
- Published as the “**IAEA Safety Standards Series**”, and can be purchased as hardcopy, or be downloaded free-of-charge.

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IAEA services and tools

- **IAEA Services**
  - Integrated Regulatory Review Services
  - Advisory expert missions
  - Training courses and materials
- **Tools and D-Bases**:
  - Self-Assessment methodology and Tool (SAT)
  - Regulatory Authority Information System (RAIS)
  - Radiation Safety Information Management System (RASIMS)

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MS's needs of services and tools

- **Regulators face significant challenges** given the complexity and diversity of activities and practices.
- **Each State is responsible for the safety of all facilities and activities** involving ionizing radiation on its own territory.
- On-going **needs to support and strengthen national regulatory bodies** and **to consider** the broader policy implications presented by these challenges, responsibilities and emerging issues.

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What is IRRS ?

IRRS: an integrated service

- **Review of the regulatory infrastructure** unique to each State, but comprehensive, covering the entire national regulatory framework for safety.
- **Review regulatory oversight** of all facilities and activities in the State
- **Established in 2006**, built on the experience gained from previous similar but more specific services

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Roles of SSs in IRRS

- The IAEA's **safety objective** and **fundamental safety principles** described in **SF-1** relating to nuclear and radiation risks **provide the basis** for the IAEA Safety Standards and safety related programmes.
- The IAEA has established SSs in the area of governmental, legal and regulatory framework for safety, **GSR Part1** and **associated safety guides.**
- **These SSs provide guiding principles** for every national regulatory body's authority, independence and competence.

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The IAEA Integrated Regulatory Review Service

What it is

- **International Peer Review of the national regulatory infrastructure** for safety against IAEA standards
- An **exchange of professional regulatory experiences**
- A **sharing of lessons learned and good practices** among senior regulators

What it is not

- Individual judgments or opinions
- Regulatory inspection
- Licensees review

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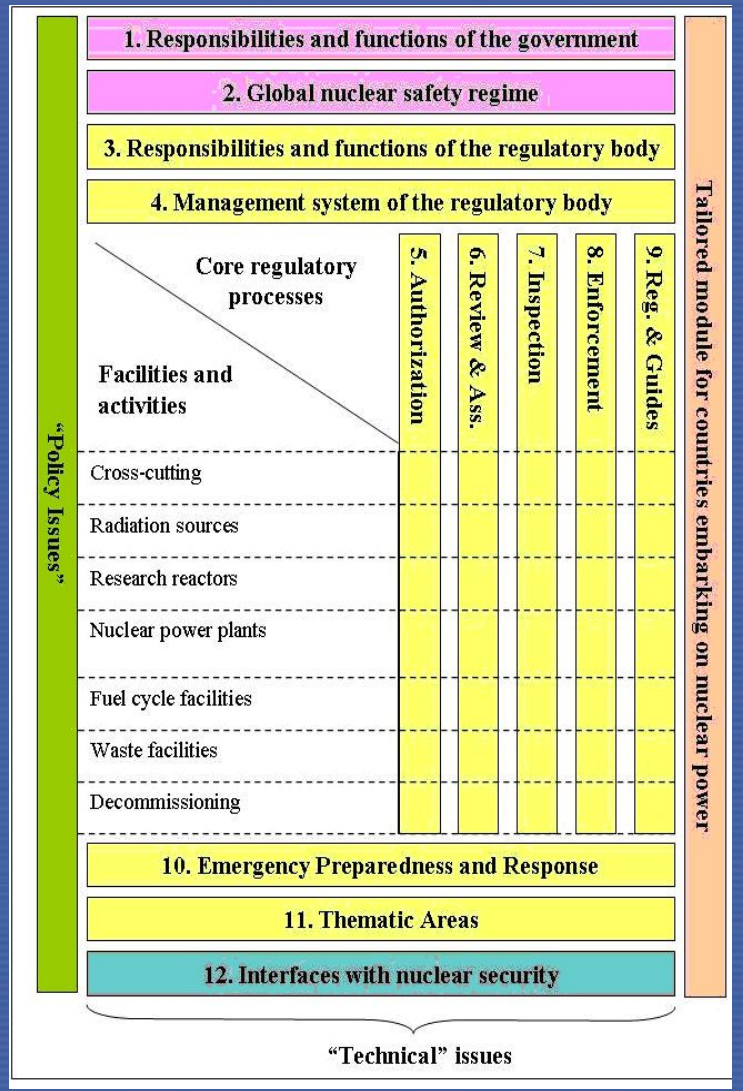
IAEA Integrated Regulatory Review Service IRRS

Areas of IRRS

‘Core’ and ‘Additional’ Areas of the IRRS

- **Modules 1 – 10** and **‘Policy Issues’** represent the **core areas of every IRRS mission**.
- **Modules 11 and 12** and **‘Tailored Module’** represent **additional areas** which may be included in accordance with the scope of regulatory oversight in the host country.



Tailored Module of IRRS

Tailored Module for Countries Embarking on Nuclear Power

- The IRRS is **generally structured to review existing regulated facilities or activities.**
- A separate and **unique module has been developed for countries embarking on nuclear power programme** (to review the status of national preparedness)**. SSG16 forms the basis of this module.**
- IAEA **SSG16** "***Establishing the Safety Infrastructure for a Nuclear Power Programme***" has been developed to provide guidance to countries **preparing to embark on a national nuclear power programme**.

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Scopes covered by IRRS

Technical Issues

- **Systematic** approach
- **Within the scope of** the IAEA **Safety Standards**
- Decided **before the conduct of the mission**
- Review against the IAEA Safety Standards

Policy Issues

- **Tailored** approach
- **High-level discussions** which can **go beyond the IAEA Safety Standards**
- Can be decided/adapted **in the course of the mission**
- **Learning process** among the experts (round tables, presentation of national practices, etc.)

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The IAEA Integrated Regulatory Review Service

IRRS Process starts with Self-Assessment : an integral part of the IRRS process.

- Documented in Safety Requirement **GS-R-3** "**Management System for Facilities and Activities**".
- Based on **the concept of continuous assessment and improvement** (Ch.6 of GS-R-3) relative to known standards for measurable improvements.
- The completed self-assessment report and associated evidence forms part of the **advance reference material (ARM) for the IRRS mission**.

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The IAEA Integrated Regulatory Review Service

IRRS Team will, as appropriate, comprise:

- IRRS **Team Leader**, recruited from a Member State
- IRRS **Deputy Team Leader**, recruited from a MS
- IAEA **Team Coordinator**, an IAEA staff
- IAEA **Deputy Team Coordinator**, an IAEA staff
- **Review Experts**, drawn from Member States
- IAEA **Review Area Facilitator** (for unusually large or complex review missions) drawn from IAEA staff
- IAEA **Administrative Support**
- **Observers** from other states may participate with the agreement of the host state

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IRRS Review Methodology

- Reviewers use **three methods to acquire sufficient information** for **objective review of regulatory effectiveness** and **the identification of important regulatory technical and policy issues**:
  - **A review of written material**
  - **Interviews with personnel**
  - **Direct observation of inspections (Site Visits)**
- **Regulatory practices are reviewed against relevant IAEA Safety Standards**, together with **due attention to policy issues** beyond the Safety Standards or having an overall significant impact on aspects of regulatory work

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Development of the mission report

- **Recommendations:** **When key aspects relative to the IAEA Safety Requirements** are missing, incomplete, or inadequately implemented

- **Suggestions:** Address regulatory technical and policy issues, primarily **to make** the regulatory body's performance more effective or efficient, **to indicate** useful expansions of existing programmes and **to point out** possibly superior alternatives to current work

- **Good Practices:** **In recognition of** an outstanding organization, arrangement, programme or performance superior to those generally observed elsewhere and **is worthy of the attention** of other regulatory bodies **as a model** in the general drive for excellence

All of these are agreed at the end of the mission

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IRRS Follow-Up Mission

- **Supports the continuing improvement** of regulatory effectiveness by reviewing the State's progress in response to IRRS recommendations or suggestions
- **Review progress in implementing improvements** resulting from IRRS mission recommendations or suggestions
- **Review areas of significant change**
- **An integral part of the process**: it takes place about 2-4 years after the initial mission

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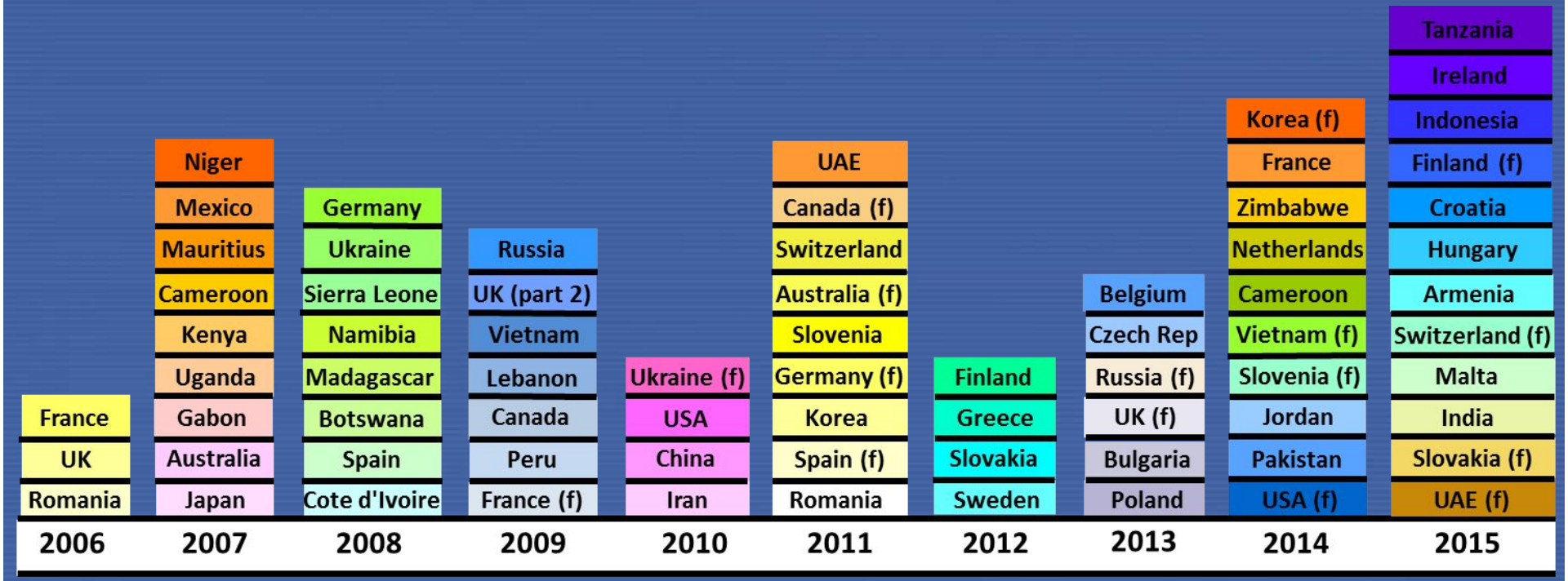
The IAEA Integrated Regulatory Review Service

72 IRRS Missions and Follow up since 2006



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The IAEA Integrated Regulatory Review Service

Missions planned for 2016-2018 :

Argentina, Bangladesh, Belgium, Belarus, Bulgaria, Chile, China, Estonia, Ethiopia, Guatemala, Italy, Japan, Kenya, Lithuania, Luxembourg, Macedonia, Malaysia, South Africa, Sweden…

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Main Function of IRRS

IRRS as a tool to harmonize and raise the global level of safety

- States and Regulatory Bodies are **encouraged to share the results** of their own IRRS mission
  - Make the report public
  - Report on mission and action plan at the CNS or JC review meetings
  - Participate in the periodic IRRS Lessons learned Workshops
- "**Comparisons of numbers** between IRRS reports from different countries **should not be attempted**"

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Integrated
Regulatory
Review Service

IRRS

Thank you