



IAEA-ANSN Webinar on Supporting New Nuclear Programmes: IAEA Generic RoadMap Project

**GRM for Establishing the Nuclear
Safety Infrastructure for a First
Nuclear Reactor**

Rania Gomaa

GRM Project Manager

Regulatory Activities Section

Division of Nuclear Installation Safety



Regulatory Activities Section (RAS)/ Nuclear Installation Safety (NSNI)

Rania Gomaa

Expertise areas: Regulatory Framework, Nuclear Safety Infrastructure, Capacity Building, Regulatory Oversight, Regulatory Cooperation



Professional background:

- GRM Project Manager/ Consultant at RAS/NSNI, IAEA (2023- present)
- Acting RCF Secretariat, IAEA (July- Dec. 2024)
- Senior Nuclear Inspector at Egyptian Nuclear and Radiological Regulatory Authority, ENRRA (2021 -2023)
- Associate Professor at Egyptian Atomic Energy Authority, EAEA (Since 2020)
- Head of Quality Management Department, ENRRA (2015 -2020)
- Quality Officer at Central Laboratory of Environmental Isotope Hydrology, EAEA (2003-2015)

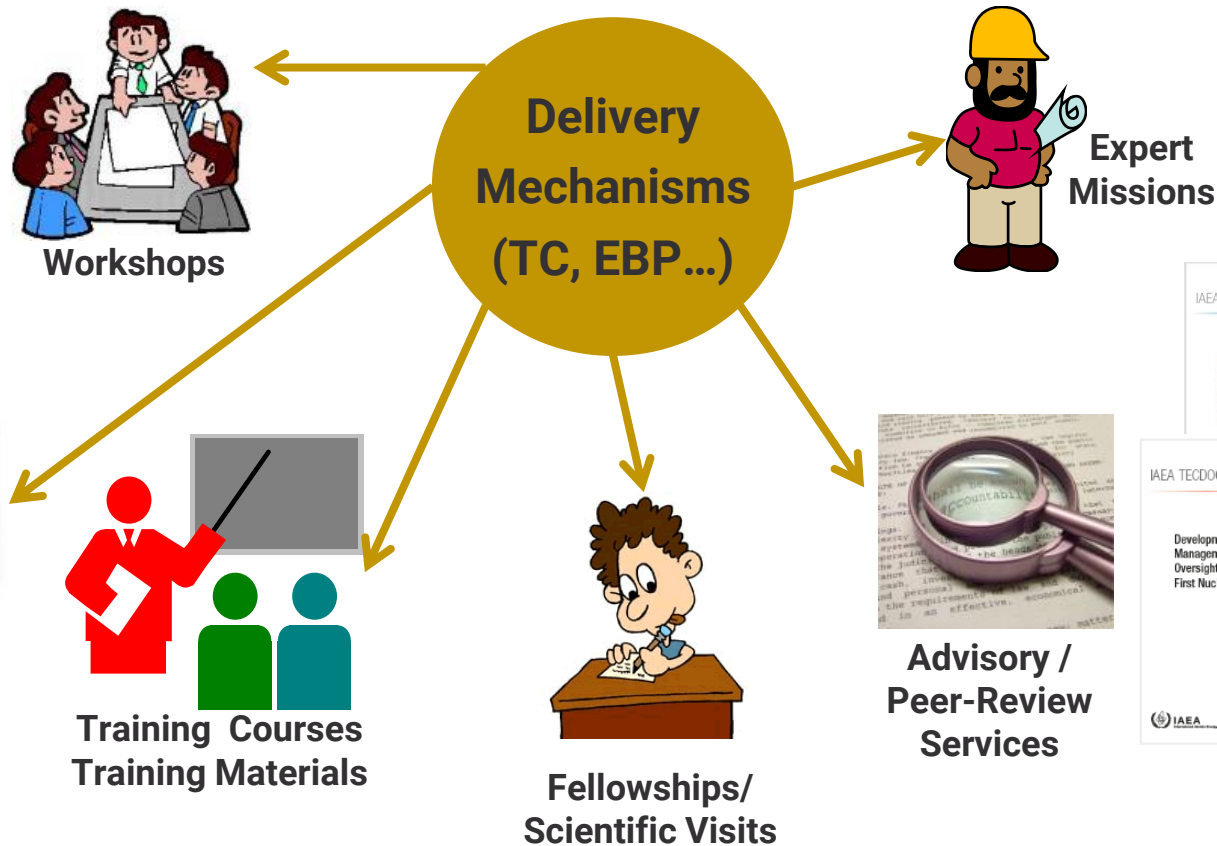
- E-mail : R.Gomaa@iaea.org
- Phone: +4368181165688
- Website: www.iaea.org
- <https://gnssn.iaea.org/regnet/embarking/GRM/Pages/default.aspx>

Contents

- IAEA support to embarking countries for new nuclear programs
- GRM for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor
- Some recent and upcoming events
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- Participants Feedback



IAEA Support for Embarking Countries



IAEA Safety Standards

for protecting people and the environment

Establishing the
Safety Infrastructure
for a Nuclear Power
Programme

Specific Safety Guide

No. SSG-16 (Rev. 1)



Publications

IAEA TECDOC SERIES

IAEA-TECDOC-1940

Experiences of Member States
in Building a Regulatory
Framework for the Oversight
of New Nuclear Power Plants:
Country Case Studies

IAEA TECDOC SERIES

IAEA-TECDOC-2033

Development and
Management of Regulatory
Oversight for Operation of a
First Nuclear Power Plant



SAFETY REPORTS SERIES
No. 129

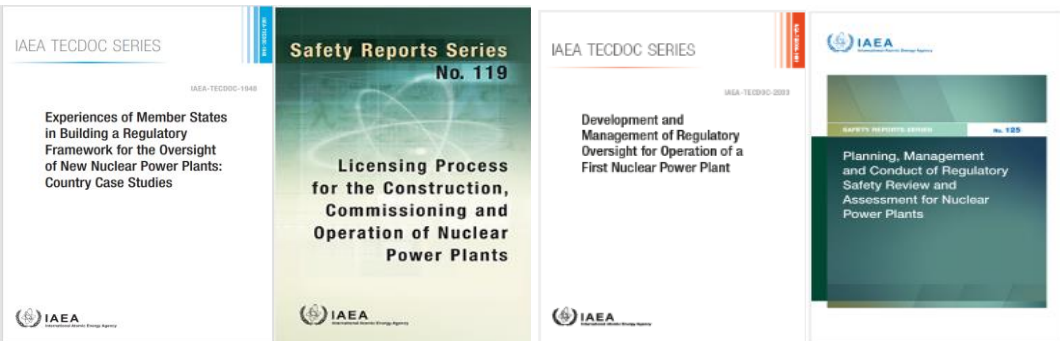
Planning, Management
and Conduct of Regulatory
Safety Review and
Assessment for Nuclear
Power Plants

Publications – Developing regulatory framework in embarking countries

- TECDOC-1948: Experiences of Member States in Building a Regulatory Framework for the Oversight of New Nuclear Power Plants: Country Case Studies (2021)
- Safety Report No.119: Licensing Process for Construction, Commissioning and Operation of Nuclear Power Plants (2023)
- TECDOC-2033: Development and Management of Regulatory Oversight for Operation of a First Nuclear Power Plant (2023)
- Safety Report No. 125: Planning, Management, and Conduct of Regulatory Safety Review and Assessment for NPPs (2025)
- TECDOC: Establishing a Training Programme on the Safety Review of Nuclear Installation Site. A Handbook for Regulatory Bodies in Embarking Countries (2025)
- Many publications related to regulatory capacity building

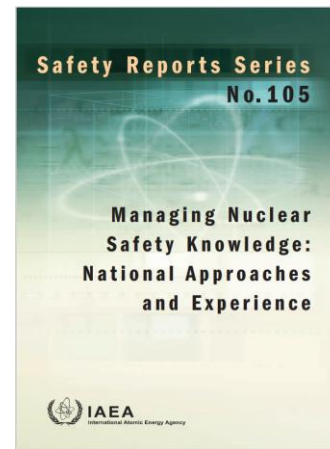
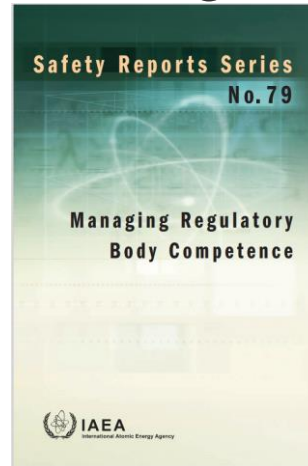
Under development (Roadmap Project):

- Safety Report: Generic Roadmap for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor
- TECDOC: Initiating the Safety Infrastructure for a Nuclear Power Programme
- TECDOC: Handbook on Site Survey and Site Evaluation for Nuclear installations
- TECDOC: Handbook on establishing the Infrastructure and Technical Basis for the Design and Safety Assessment of a Nuclear Power Plant
- TECDOC: Regulatory oversight during construction and commissioning of nuclear reactors for embarking countries: challenges and case studies
- TECDOC: Commissioning of Nuclear Power Plants: Challenges and Lessons Learned



Publications – Regulatory capacity building

- **Safety Report Series No.79:**
Managing Regulatory Body Competence (2013)
- **IAEA-TECDOC-1757:**
Methodology for the Systematic Assessment of the Regulatory Competence Needs (SARCoN) for Regulatory Bodies of Nuclear Installations (2014)
- **IAEA-TECDOC-1794:**
Guidelines on Devising a Programme for Competence Acquisition and Development among Nuclear Regulators (2016)
- **Safety Reports Series No.105:**
Managing Nuclear Safety Knowledge: National Approaches and Experience (2021)

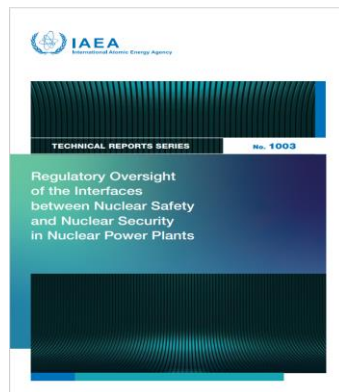
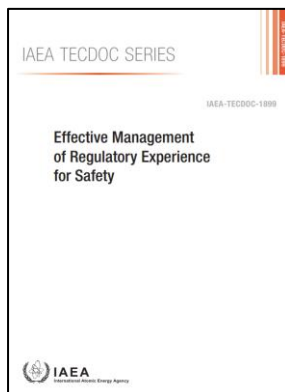
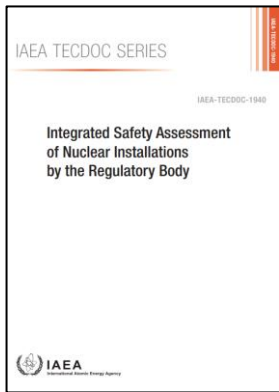
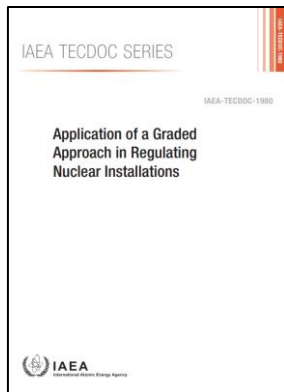


Publications – Regulatory functions

- **IAEA-TECDOC-1980:** Application of Graded Approach in Regulating Nuclear Installations
- **IAEA-TECDOC-1940:** Integrated Safety Assessment of Nuclear Installations by the Regulatory Body
- **IAEA-TECDOC-1867:** Handbook for Regulatory Inspectors of Nuclear Power Plants (2019)
- **IAEA-TECDOC-1899:** Effective Management of Regulatory Experience for Safety – new safety guide (DS547) under development
- **Technical Report Series No. 1003:** Regulatory Oversight of the Interfaces Between Nuclear Safety and Nuclear Security in Nuclear Power Plants (2024)
- **IAEA-TECDOC-2089:** Regulatory Enforcement Policy Development and Implementation (2025)

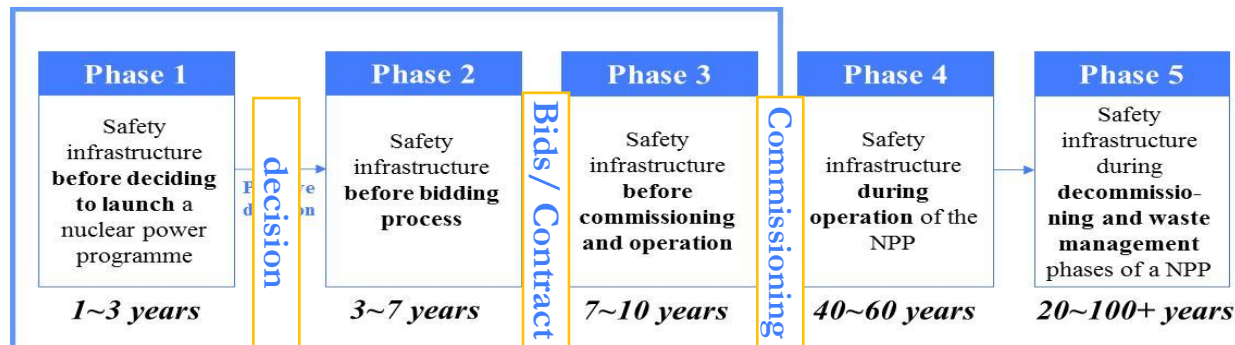
Under development:

- **TECDOC - National Policy and Strategy for Safety and Security**
- TECDOC - National Strategies on Capacity Building for Nuclear Safety
- TECDOC - Regulatory Enforcement Policy and Procedures
- TECDOC - Resourcing and Organizing the Regulatory Body to Enable Effective Independence



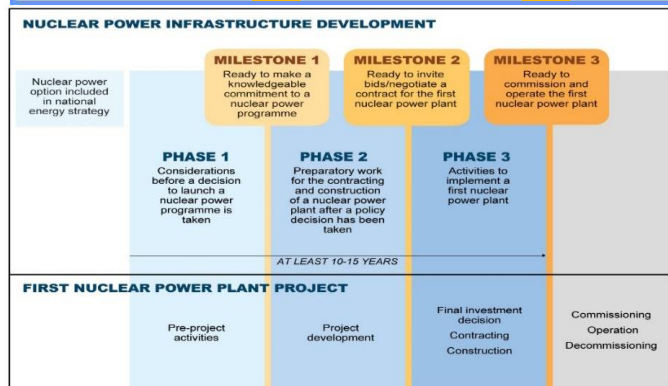
Objective of Generic RoadMap (GRM)

IAEA Phases Approach



GRM designed to answer:

What is important?
 What are the must-haves? **When** is it important to have?
Why is it important to achieve our end goal?
How do we implement it in most efficient and effective way?

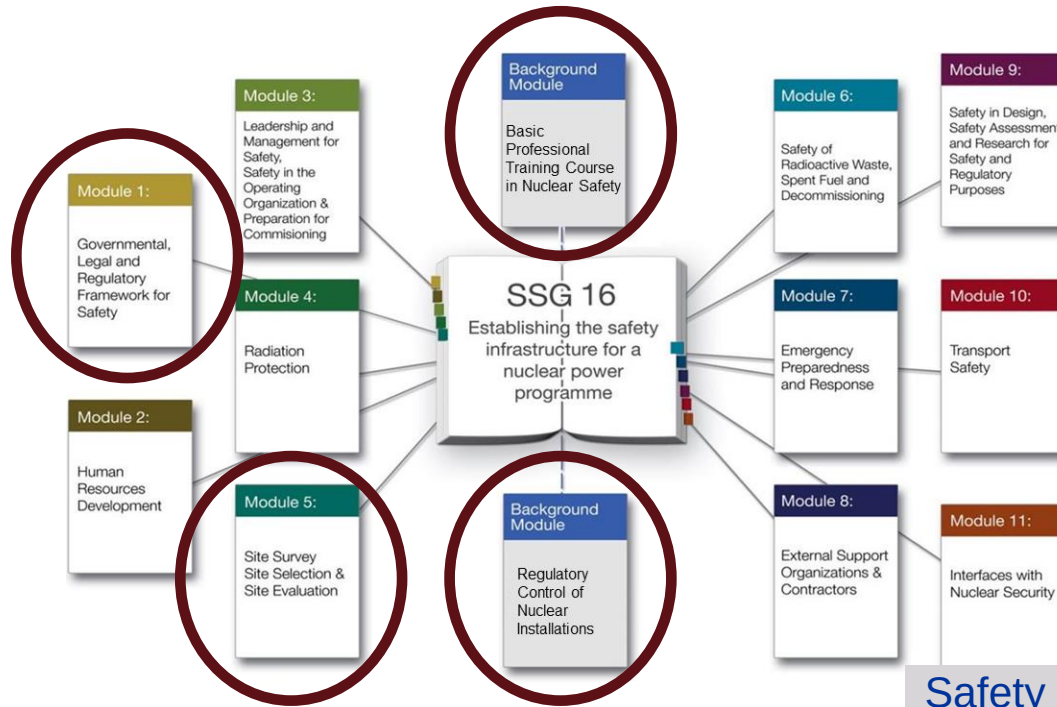


IAEA Milestones Approach

Generic RoadMap for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor



SSG-16 Modules: standardized workshops



IAEA Safety Standards

for protecting people and the environment

Establishing the
Safety Infrastructure
for a Nuclear Power
Programme

Specific Safety Guide
No. SSG-16 (Rev. 1)



Safety Packages of IAEA Assistance for
Establishing Safety Infrastructure

<https://gnssn.iaea.org/regnet/embarking/ssg16/Pages/safety-packages.aspx>

IAEA Assistance for Embarking Countries

– Specific Workshops under the Module 1

- WS1: Workshop on Developing National Infrastructure including Governmental, Legal and Regulatory Infrastructure for Safe Implementation of Nuclear Power Programme
- WS2: Regulatory Framework
- WS3: Safety Regulations
- WS4: Licensing Process
- WS5: Safety Review and Assessment by the Regulatory Body
- WS6: Regulatory Inspection and Enforcement
- WS7: Interactions with the Public and Other Interested Parties in Regulatory Activities
- WS8(a): Workshop on Leadership and Management System for the Regulatory Body
- WS8(b): Workshop on Safety Culture for the Regulatory Body
- WS9: Staffing, Competence Development and Use of External Support Organizations



IAEA Support for Embarking or Expanding Countries: Regulatory Framework

Other Workshops

- Workshop on Knowledge Management
- Workshop on Safety-Security Interface
- Workshop on Integrated Safety Assessment
- Workshop on NPP Construction and Commissioning Oversight
- Workshop on Inspection of Long Lead Items for Nuclear Power Plants
- Workshop on IAEA Self-Assessment Methodology (IRIS, SARIS)
- Workshop on Assessment of Safety Culture by the Regulatory Body

Basic Professional Training Course in Nuclear Safety

(BPTC)

Objectives

- To provide training on basic safety concepts and their application to NPP, Research Reactors and Fuel Cycle Facilities
- To present the basic principles and key issues of nuclear safety

Content

- Design and operational characteristics of a nuclear reactor
- Safety principles applied in the design of a nuclear reactor
- Safety classification of structures, systems and components
- Radiation protection in nuclear facilities
- Deterministic accident analysis
- Probabilistic safety analysis
- Siting and environmental impact assessment
- Siting and environmental impact assessment
- Safety and security interface
- Operational safety, including operational feedback
- Limiting conditions for operation;
- Public communication
- Etc.

Regulatory Control Course

(RCC)

Objectives

- To gain a comprehensive understanding of the regulatory infrastructure of safety, required when start operating a nuclear installation
- To provide an overview of the potential nuclear safety issues a country may encounter when implementing a nuclear power programme

Content

- Regulatory Framework
- Regulatory Organisation
- Regulatory Guidance
- Licensing and licensing document
- Safety in the Construction Phase
- Safety in Operation

School on Drafting Nuclear Safety Regulations

Objectives

- To improve understanding on how to consider IAEA safety standards when drafting or reviewing national regulations
- To consider regulatory approach when determining what should be embedded as regulatory requirements
- During the workshop, to review of existing regulations, identify gaps against the IAEA safety standards, then revise and draft regulations

Content

- Introductory presentations on Legal and Regulatory Frameworks
- Presentations on specific IAEA SSs
- Gap analysis vs. IAEA Safety Requirements
- Drafting, reviewing or revising
- Peer/Cross review of national regulations

Areas: Licensing process, Design, Construction, Commissioning and Operation, Management of safety...



School of Drafting Regulations on Nuclear Safety and Security

Regulatory Inspection Workshops

Purposes

- To familiarize the participants with the fundamentals of regulatory inspections of NPPs
- To provide hands-on training for inspection skills and methods using real-life examples in a classroom setting and at a nuclear facility

Two platforms: in the classroom in Vienna and in the field at Zwentendorf NPP site in Austria



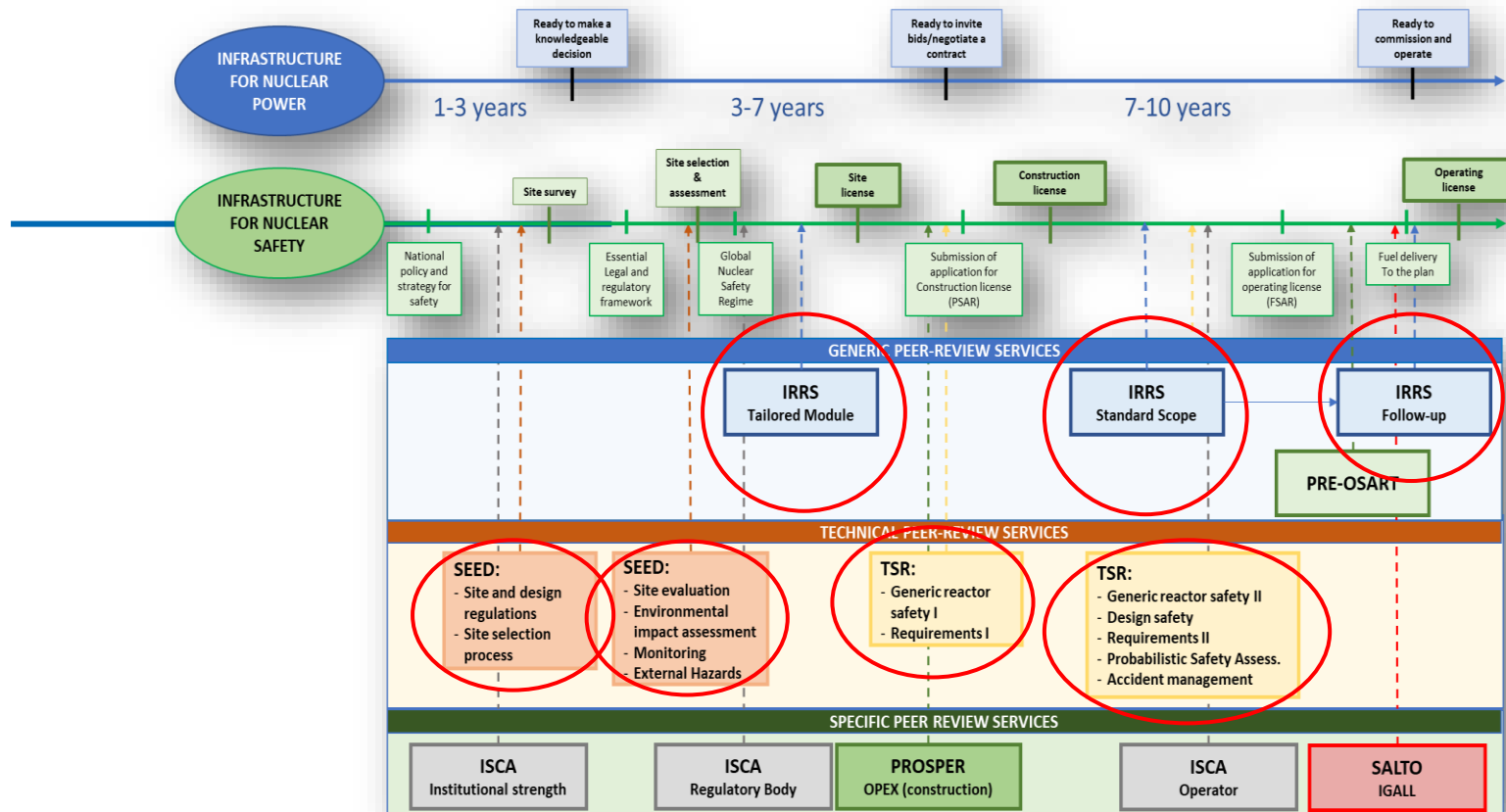
IAEA Safety Review Services



	Generic	Specific/Topical	
General Peer-Review Services	Integrated Regulatory Review Service (IRRS) Review of the national regulatory infrastructure for safety	Emergency Preparedness Review (EPREV) To appraise preparedness for nuclear and/or radiological emergencies in Member States	
Technical Peer-Review Services	Technical Safety Review (TSR) Review of design safety and safety assessment of nuclear power plants	• Design Safety • Generic Reactor Safety • Safety Requirements	• Probabilistic Safety Assessment • Accident Management • Periodic Safety Reviews
	Site and External Events Design (SEED) Review of site and nuclear power plant design safety against external events	• Site and Design Regulations • Site Selection Process • Site Evaluation Review	• Environmental Impact Assessment • External Hazards • Site Monitoring



Timing of Safety Review Services

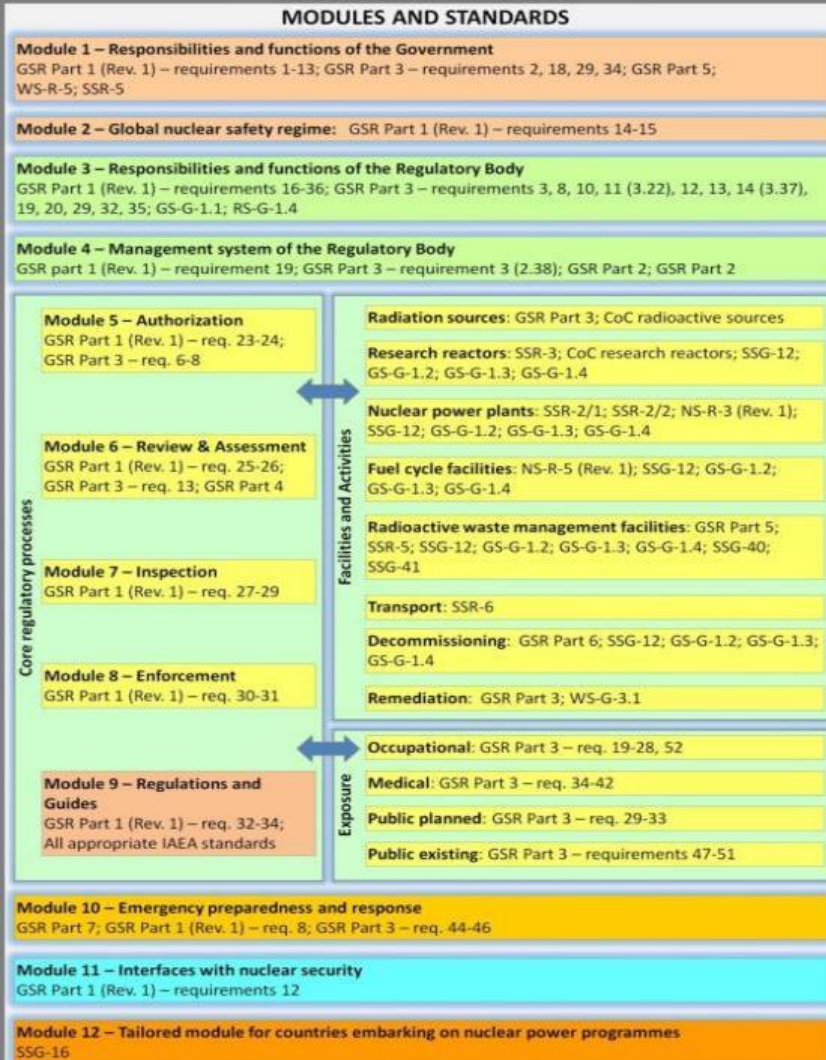


Regulatory Infrastructure

- **IRRS** covers all regulatory infrastructure aspects
 - Modules 1 – 10 and ‘Policy Issues’ represent the core areas of every IRRS mission

Additional areas:

- Module 11: Interface with nuclear security
- **Module 12**: Tailored module for Embarking Countries in NPP programme



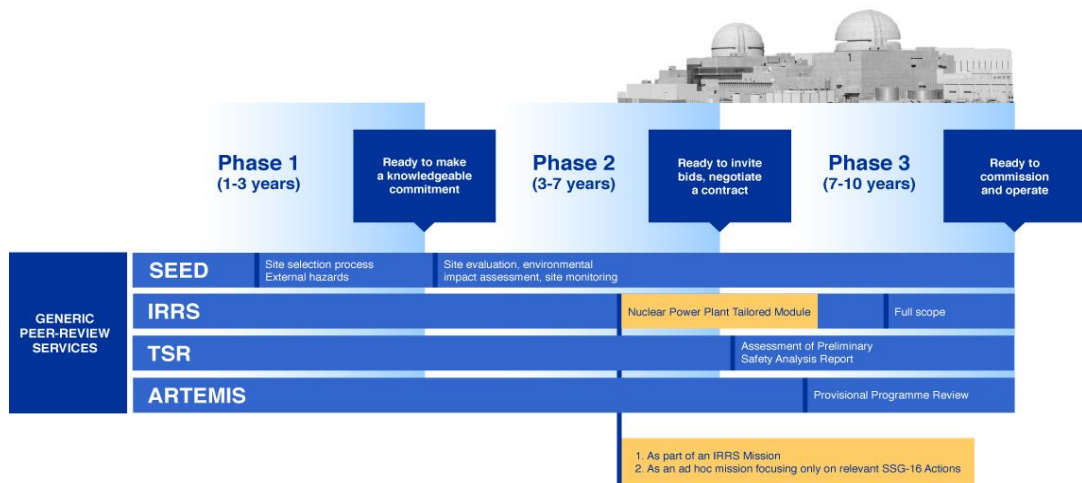
Standalone Mission to Review Regulatory Infrastructure

Countries in Phase 2

- 1) To host an IRRS mission with Module 12;
or
- 2) To host a specific Expert Mission (Preliminary Regulatory Review Mission) for the review of the Regulatory Infrastructure for Safety covering all relevant Actions outlined in SSG-16

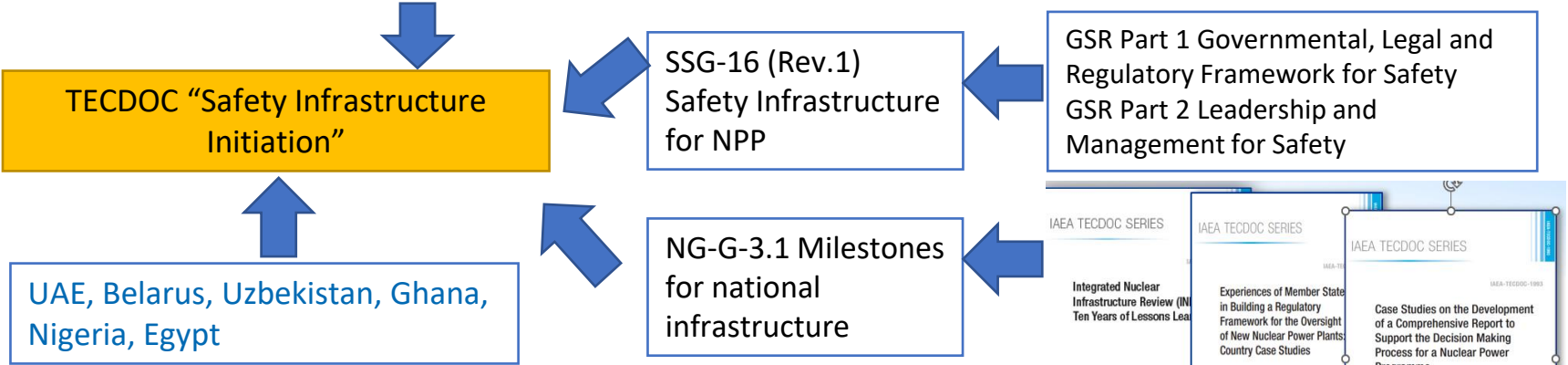
Countries in Phase 3

- To host an IRRS full scope mission, including NPP

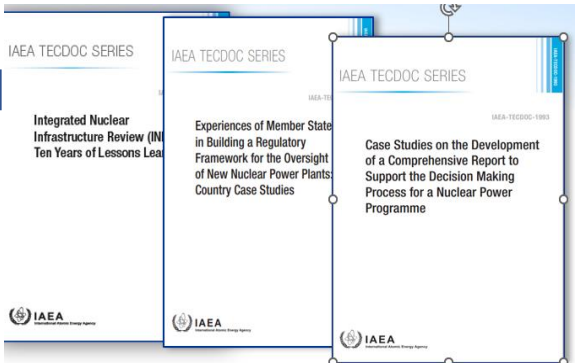


Phase 1– TECDOC on Initiating the Safety Infrastructure for a Nuclear Power Programme

Related Safety Infrastructure	Priorities	Self-Assessment Tools, Peer Review Services
SST16 Elements for phase 1	- Identify leaders for safety infrastructure assessment and planning. - Identify the safety infrastructure considerations for the nuclear power programme. - Conduct site survey and identify candidate sites. - Consult with public and other interested parties - Develop a plan to establish or expand the national strategy and policy for safety - Plan to build research, technical, educational competencies for the safety infrastructure	IRRS / SST-16 tailored Module

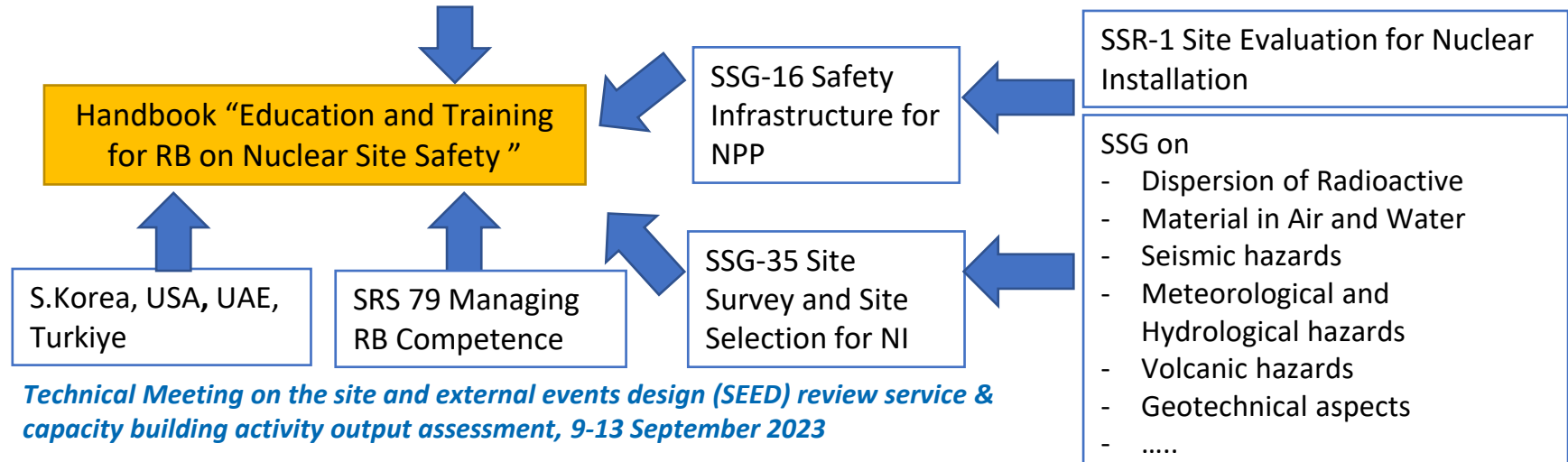


2^{od} Consultancy Meeting to review the TECDOC
4-7 October 2022



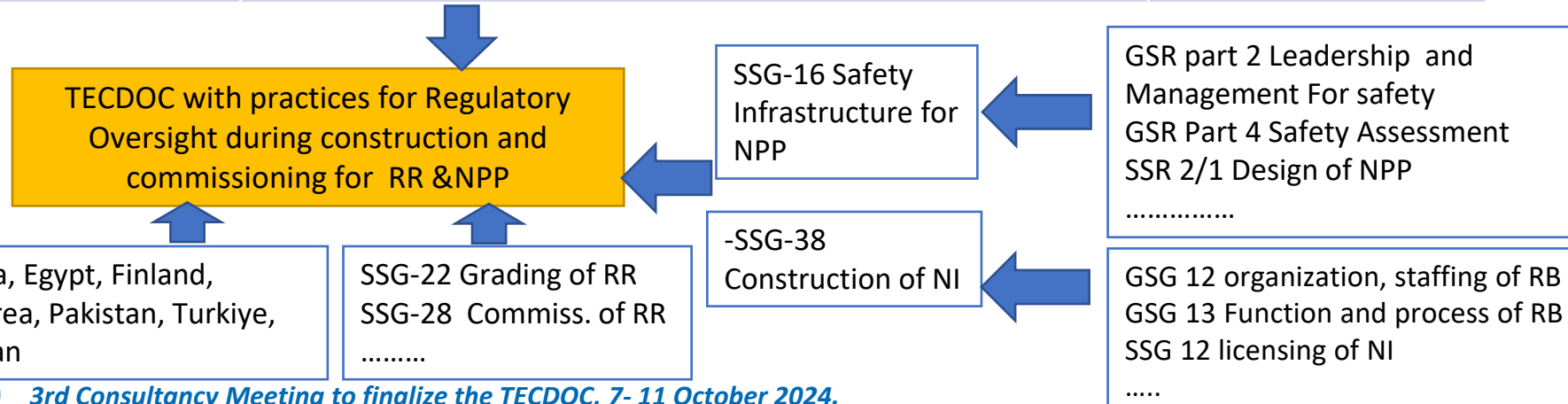
Phase 2 – Establishing a Training Programme on the Safety Review of Nuclear Installation Sites: A Handbook for Regulatory Bodies in Embarking Countries (IAEA-TECDOC-2083)

Related Safety Infrastructure	Priorities	Self-Assessment Tools, Peer Review Services
Site Selection and authorization	- Select and evaluate candidate site and apply for site authorization - Update environmental impact assessment - Building Capacity needed to authorize site	SEED IRRS / SSG-16 tailored Module



Phase 3- TECDOC on Regulatory Oversight during Construction and Commissioning for the first Nuclear Reactor: Experience and Lessons learned

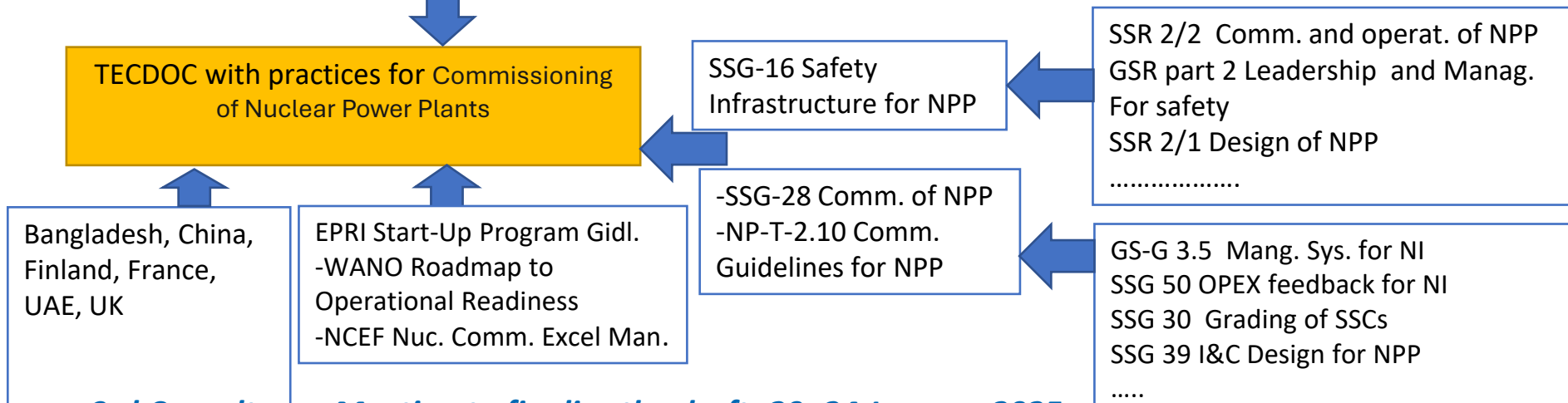
Related Safety Infrastructure	Priorities	Self-Assessment Tools, Peer Review Services
Construction and commissioning safety elements	- Operator submit the application and safety documents for Licence to Construct - RB conduct comprehensive review and independent verification of SAR - Decide to issue the construction authorization within transparent process with engagement of stack holders - Implement compliance program, inspection and enforcement.	IRRS TSR



- *3rd Consultancy Meeting to finalize the TECDOC, 7- 11 October 2024.*
- *TM on on Experience of Member States in the Construction and Commissioning of New Nuclear Reactors (Generic RoadMap), 10-14 March 2025*

Phase 3- TECDOC on Commissioning of Nuclear Power Plants: Challenges and Lessons Learned

Related Safety Infrastructure	Priorities	Self-Assessment Tools, Peer Review Services
Commissioning	- RB Implement effective regulatory oversight, inspection and enforcement. - Ensure validation and verification of the design and its SSCs - Ensure completion of construction and commissioning in accordance with design bases and licensing conditions.	IRRS TSR Pre OSART



3rd Consultancy Meeting to finalize the draft; 20- 24 January 2025

Lessons Learned During Licensing, Construction and Beyond

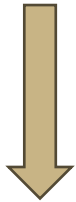
TECDOCs Structure

X.X.1 –The Issue

X.X.2 –Point of Interest (Questions to drive the discussion)

X.X.3 –Discussion

X.X.4 –Challenges Faced and Lessons Learned



Lessons learned
analysis was based
on the identified
phases in SSG16
(Rev.1)

COUNTRY A – NUCLEAR COUNTRY	
<i>Experience of Member States in Commissioning of Nuclear Power Plants</i>	1. Nuclear Power Program and Current status [Click here and type the body of your report] <i>Points to be considered:</i> • Nuclear Program • Status of nuclear power plant • Project phases and timelines • Regulatory framework and authorization 2.1 Commissioning Strategy [Click here and type the body of your report] <i>Points to be considered:</i> • Organizational Model • Functional Organization Chart • Establishing the Commissioning Organization • Readiness for Commissioning • Challenges and applied solutions. 2.2 Integrated Management System and transition between phases [Click here and type the body of your report] <i>Points to be considered:</i> • Establishing the Integrated management System • Commissioning Organization Management System Documents • Challenges and applied solutions. 2.3 Involved organizations in the commissioning phase and interface arrangements. [Click here and type the body of your report] <i>Points to be considered:</i> • Supplier main Contractor • Contractor • Regulator • Local Authority • Designer • Investors • Third party • External and public relations Communications • Environmental Agency • Grid operators • Environmental Agency • Commissioning and Engineering • Commissioning and Operations • Commissioning and design • Commissioning and Licensing • Challenges and applied solutions.
	COUNTRY A – NUCLEAR COUNTRY 1. Nuclear Power Program and Current status [Click here and type the body of your report] <i>Points to be considered:</i> • Nuclear Program • Status of nuclear reactors (SHRs and RHs) • Project phases and timelines • Regulatory framework and status of regulatory body 2. READINESS OF THE REGULATORY BODY 2.1 Co-operation with the regulatory body of vendor country [Click here and type the body of your report] <i>Points to be considered:</i> • The scope of the bilateral agreement between the of recipient country and the of vendor country. • Share information and lessons learned, especially for reference plant. • Technical support of the of vendor country during construction and commissioning phases. • Official agreement to apply regulations and guides of vendor country. • Conducting joint inspections • Challenges and applied solutions. 2.2 Human resources and Capacity building [Click here and type the body of your report] <i>Points to be considered:</i> • Strategy for human resources (national/international, seniors/juniors, experience in the field/ industrial field,...) • Identification of human resources needed for the based on functions of regulatory body and activities of each phase. • Offer attractive packages to compete with governmental or private sectors to maintain employee's sustainability. • Recruitment process including participation of consultants. • Methodology / tool for the competency gap analysis • Pool of capacity building • Challenges and applied solutions. 2.3 Management System [Click here and type the body of your report] <i>Points to be considered:</i> • Overview of the management system • Briefing on the processes of the management system (core, management and support processes, the internal procedures, and guidelines, etc.) • Assessment, monitoring and improvement (support of IAEA, ISO, external experts, peer reviews, certification, etc.) • Challenges and applied solutions. 2.4 Knowledge management [Click here and type the body of your report] <i>Points to be considered:</i>

Generic RoadMap for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor

Phase	Timeline	Priorities
1 — Safety infrastructure considerations before a decision to launch a nuclear programme is taken	Early	- Identify leaders for nuclear safety infrastructure assessment and planning. - Identify the nuclear safety infrastructure considerations for the nuclear programme.
	Middle	- Conduct site survey and identify potential candidate sites. - Consult with public and other interested parties.
	Late	- Draft or revise the national policy and strategy for safety. - Plan to build research, technical, educational competencies for the nuclear safety infrastructure.
2 — Safety infrastructure preparatory work for the construction of a nuclear reactor after a policy decision has been taken	Early	- Develop legal and regulatory framework. - Establish or identify key organizations.
	Middle	- Develop management systems and foster safety culture at the key organizations. - Implement the strategy to recruit and train the needed human resources in a systematic way. - Enhance international cooperation on nuclear safety and establish mechanism for external technical support.
	Late	- Issuance of relevant safety regulatory requirements. - Conduct site evaluation and environmental impact assessment. - Adhere to the international legal instruments.
3 — Safety infrastructure activities to construct a first nuclear reactor	Early	- Include the safety related issues during bidding and contracting. - Conduct design review and safety assessment. - Implement cooperation programme with the vendor country for pre-licensing.
	Middle	- Submit the application and supporting safety demonstration for the construction authorization. - Verify the compliance with the regulatory requirements and expectations and issue the construction authorization. - Properly coordinate the timing of regulatory approvals for nuclear reactor components. - Conduct regulatory oversight, inspections and enforcement. - Complete, at the appropriate time, the set of regulatory requirements and guides for commissioning and operation.
	Late	- Submit the application and supporting safety demonstration for commissioning authorization - Verify the compliance with the regulatory requirements and expectations for the approval of commissioning. - Ensure the compliance with the regulatory requirements and expectations at the identified hold points including fuel loading, first criticality, power increase, trial operation and commercial operation - Submit the application and associated safety demonstration for operation license. - Verify the compliance with the regulatory requirements and expectations during commissioning.

**Bangladesh, Poland,
Saudia Arabia, Kenya,
Estonia**
**External experts from
France and Canada**

***1st Consultancy Meeting to
develop the GRM guidelines 22- 26
April 2024***

Generic RoadMap for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor

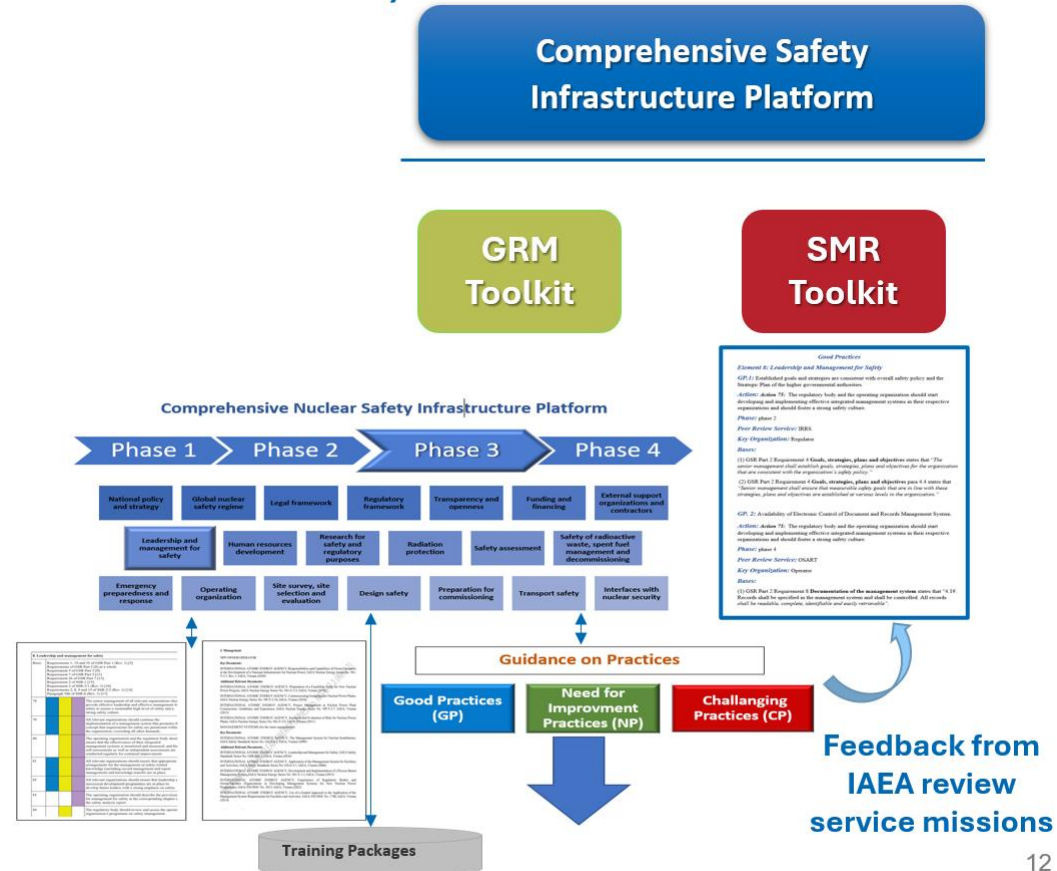


Typical timeline of the priorities for the development of comprehensive nuclear safety infrastructure

2nd Consultancy Meeting to review the GRM guidelines 22- 25 April 2025

Comprehensive Safety Infrastructure Platform (CSIP) and Toolkits (GRM toolkit and SMR toolkit)

- CSIP is a unified user-friendly platform, with comprehensive resources to support the decision-making process and the development of nuclear safety infrastructure in Embarking Countries.
- First level** include high-level mapping of IAEA Safety Standards, bridge to training packages, and feedback from IAEA review service missions.



Comprehensive Safety Infrastructure Platform (CSIP) and Toolkits

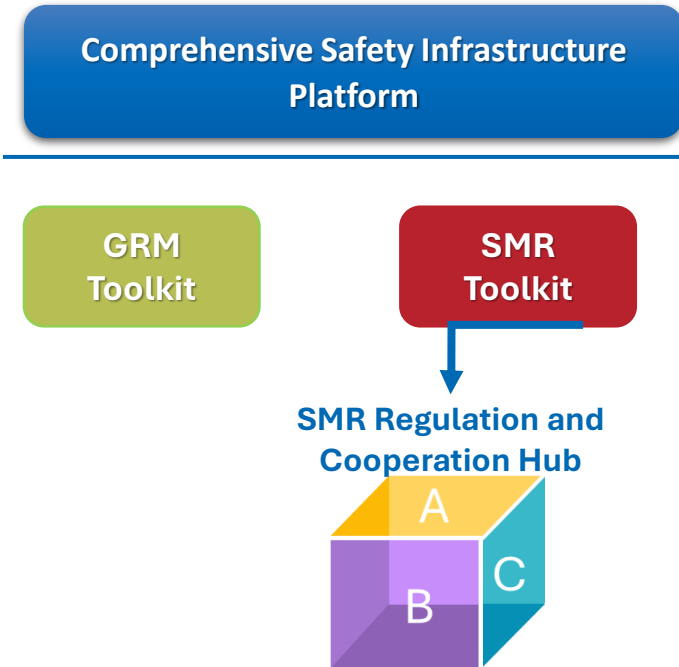
Second level provides

-GRM Toolkit: practical information based on Member State case studies and recent experiences including good practices, challenges faced and implemented solutions during different phases.

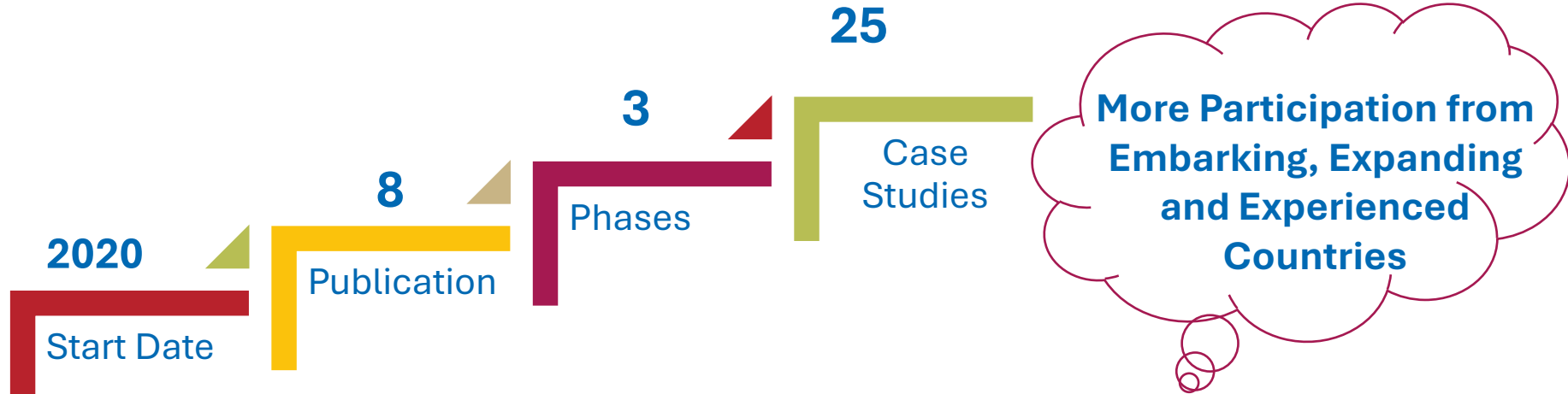
-SMR Regulation and Cooperation Data (part of the Hub): centralized information on SMR designs, focused on publicly available SMR design information from vendors and associated regulatory reviews.

Progress is underway based on the feedback received from Embarking Countries via the (2023 and 2024).

Coordination with NHSI- Regulatory Track (Nov. 2024)



Generic RoadMap Key Figures



Upcoming Event

Technical Meeting on Generic RoadMap (GRM)
for Establishing Nuclear Safety Infrastructure for
a First Nuclear Reactor
1- 5 September 2025
Vienna, Austria

Bangladesh, Belarus, China, Egypt, Estonia, Finland,
France, Ghana, Jordan, Kenya, Nigeria, Pakistan,
Poland, Saudia Arabia, S. Korea, Türkiye, UAE, UK,
US, and Uzbekistan.

<https://gnssn.iaea.org/regnet/embarking/GRM/Pages/default.aspx>



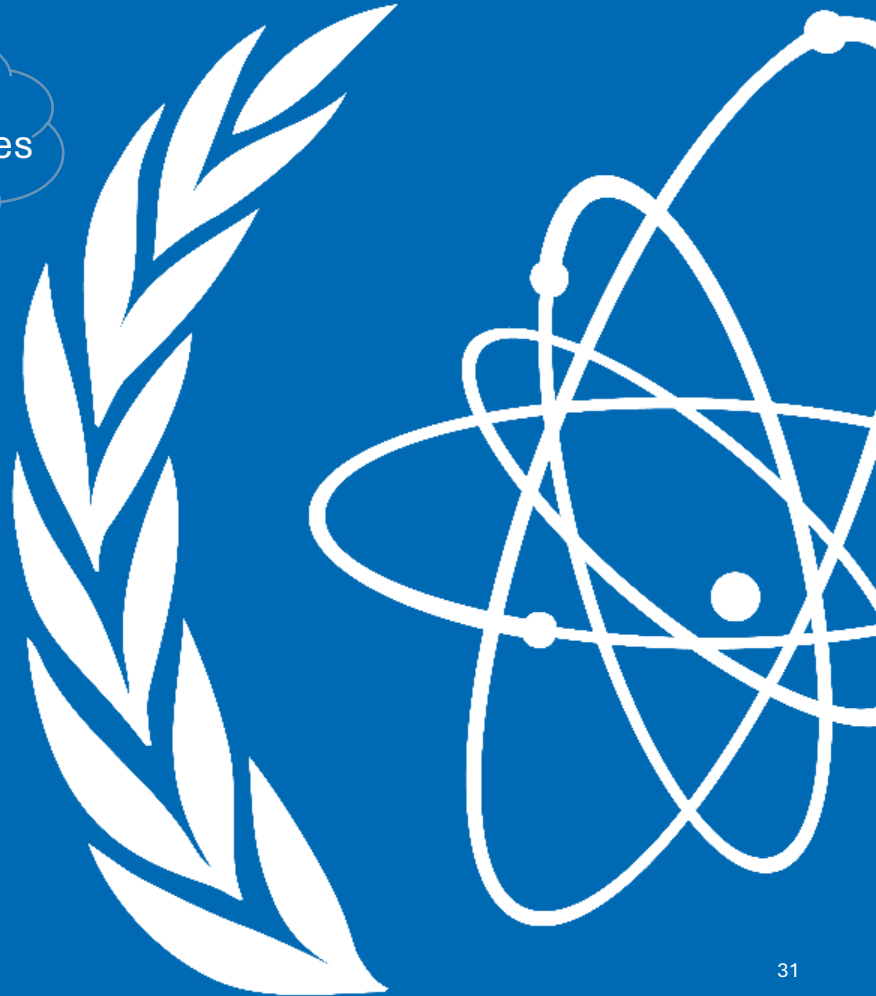
New deployment
models



New design features

SMRs require the same level of safety infrastructure than a large Nuclear Power Plant, including the establishment of a legal and regulatory framework for safety

**Other IAEA support activities to embarking
countries for New Nuclear Programmes**



Regulatory Cooperation Forum (RCF)



❑ RCF objectives

- To improve coordination of support to regulatory infrastructure development
- To optimize resources among RCF members and avoid unnecessary support duplication through improved coordination
- Experience-sharing among the RCF active recipient counties and the RCF provider countries

❑ 26 RCF members

- **14 providers:** Belarus, Canada, China, Egypt, Finland, France, Japan, Korea, Pakistan, Russia, UK, USA, EC and IAEA
- **14 recipients:** **Jordan** (2010 active), **Viet Nam** (2012 active), **Poland** (2014 active), Belarus, **Bangladesh** (2018 active), Chile, Egypt, Iran, **Nigeria** (2018 active), South Africa, **Sudan** (2018 active), UAE, **Ghana** (2017 active), **Morocco** (2017 active), **Kenya** (2024 Active)
- **4 observers:** Germany, Philippine, Belgium and OECD/NEA

❑ Upcoming events:

- **Meeting of the Steering Committee and Support Meeting, Vienna 24-27 June 2025**
- Plenary meeting during the IAEA General Conference week in Vienna (15-19 September 2025)
- Workshop on Knowledge Management and Management System, Cairo 27-31 July 2025
- Workshop on Experience of Cooperation between Regulators of the Recipient and Technology Providers, Q4/2025
- RCF Workshop on Safety Culture considering the interface with security, Q2/2026
- Two workshops planned with TSOE on the TOSCA methodology in Vienna and Japan, 2026

Convention on Nuclear Safety (CNS)

➤ Organizational Meeting (OM) for the 10th Review Meeting, 5 September 2024

- OM elected President (Faizan Mansoor / Pakistan) and Vice-Presidents (Per Strand / Norway and Naoto Ichii / Japan) and Country Group Officers (7 country groups)

➤ 10th Review Meeting will be held 13- 24 April 2026

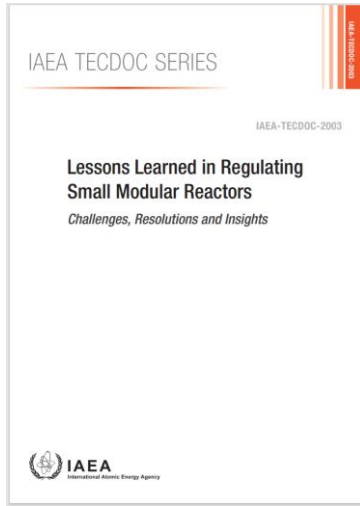
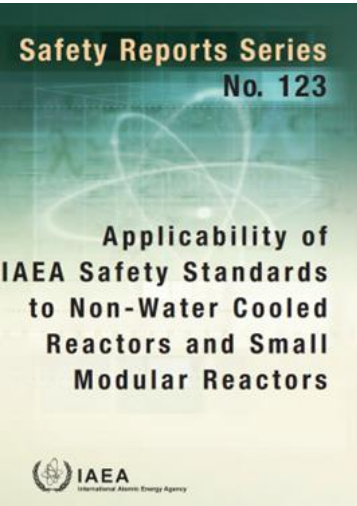
- Deadline for submitting National Report: 1 September 2025
- Deadline for submitting written questions and comments: 15 December 2025
- Deadline for providing answers to written questions: 16 March 2026
- CNS officer's turnover meeting was held 4-6 March 2025 to foster the exchange of knowledge between outgoing and incoming CNS Officers as they prepare for the 10th CNS Review Meeting.



Creating country groups in the Organizational Meeting for the 10th CNS Review Meeting

Publications related to advanced reactors

Published



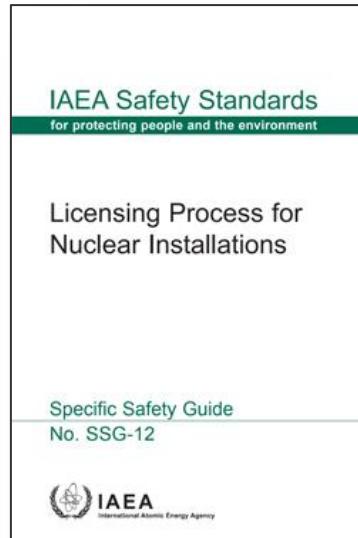
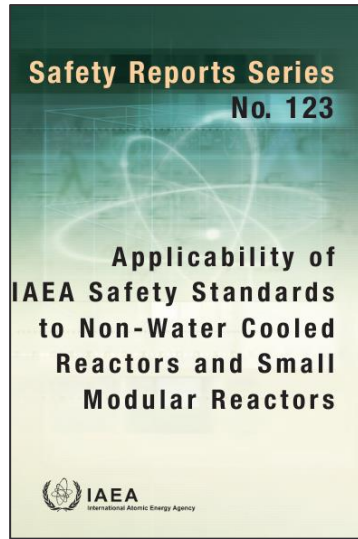
Comprehensive plan to update IAEA safety standards

Under development

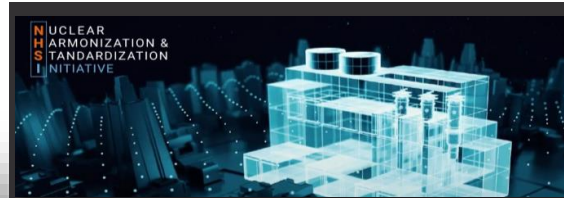
- Safety Guide SSG-12, Licensing Process for Nuclear Installations (revision, new appendix giving guidance on licensing SMRs)
- New safety guide: Safety Demonstration of Innovative Technology in NPPs
- Safety Report: Application of Graded Approach for Site Evaluation of Nuclear Installations including SMRs
- Several TECDOCs on safety of different non-water-cooled reactors
- TECDOC: Qualification of Advanced Manufacturing and Materials in SMRs and Non-Water-Cooled Reactors
- Safety Report: Fusion Facilities' Safety and Regulation

Available tools to address SMR regulatory specific issues

Next revision of SSG-12 will consider SMR aspects



Regulatory Cooperation



Three Technical Documents :

1. Information Sharing Framework for Regulatory Reviews of Advanced Reactors
2. Multinational Pre-Licensing Joint Regulatory Review
3. Collaborative Reviews and Effective Leveraging



Available Events for Capacity Building on SMRs Safety and Regulation

The Agency is developing training and workshops on SMR specific safety and security issues

Interconnected workshops, training courses with hands-on exercises and interactive sessions on SMR Safety and Security

Available for interregional and regional TC projects



Available Events for Capacity Building on SMRs Safety and Regulation: SMR Regulating School

- ✓ Three modules with hands-on exercises and interactive sessions based on **knowledge** and **tools** used by **established regulatory bodies** to regulate SMRs
- ✓ To help the development of regulatory, as well as technical, capacity-building, support to current and future regulators in Member States considering SMRs.

**Launch
in 2025**

Basic Module

To improve practical knowledge on SMR safety characteristics and challenges.

Particularly relevant to embarking countries with no background in nuclear power.



1 week

Intermediate Module

To improve practical knowledge on how to conduct regulatory design reviews of SMRs based on a selected number of MS case studies.

In cooperation with the Regulatory Cooperation Forum.



1 week



Advanced Module

To improve participants' practical knowledge on advanced licensing challenges for SMRs.

In cooperation with SMR Regulators' Forum.



1 week





SMR Regulation and Cooperation Hub

- **The Hub is a centralized online repository** providing:

- ✓ Key information on completed national or multinational regulatory reviews of SMRs and information on regulatory preparedness for SMRs
- ✓ Lessons learned and practices on regulatory cooperation
- ✓ A map of regulatory commonalities and differences

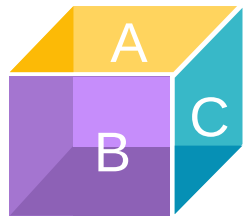
First phase (end of 2025) Initial version of the hub based on limited amount of publicly available information

- ✓ Define and prove concept (February 2025 - May 2025)
- ✓ Explore use of computing tools to summarize and compare information
- ✓ Hub development

Second phase (end of 2026)
Consolidation of the hub

- ✓ Pilot testing and feedback
- ✓ Plans to expand the scope with additional information (beyond end 2026)

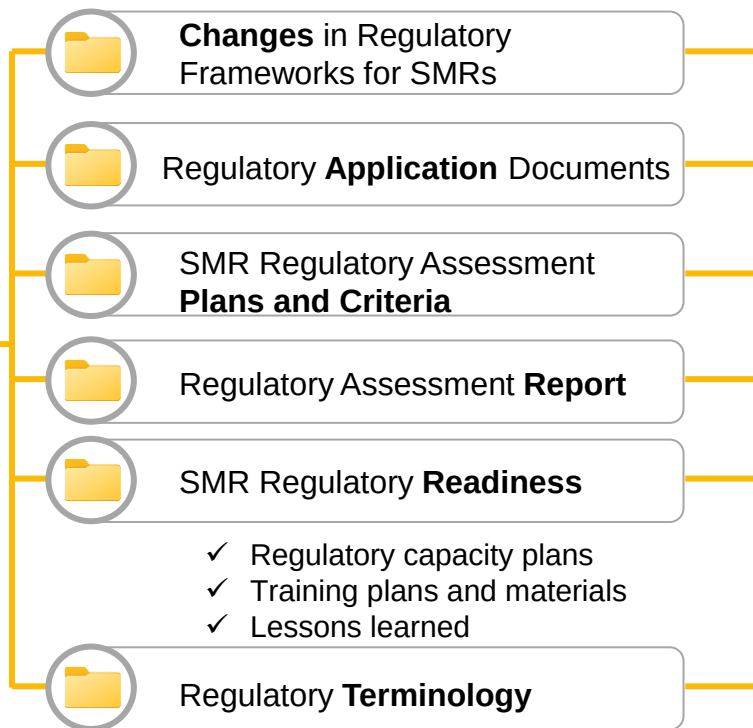
SMR Regulation and Cooperation Hub



A SMR Regulation Data

B Regulatory Cooperation Data

C Regulatory Framework Map



Use the following information to filter:



SMR Designs

SMR A
SMR B
SMR C
SMR ...

Technical Topics

- Topic 1
- Topic 2
- Topic 3
- Topic 4
- Topic 5

Status

- Early engagement
- Pre-licensing
- Licensing review
- Construction
- Commissioning
- Operation

Countries

- Argentina
- Canada
- China
- France
- Republic of Korea
- Russian Federation
- United States
- United Kingdom
- ...

Initially, will only include information available in the public domain.

Conferences

➤ *International Conference on Small Modular Reactors and their Applications, 21-25 October 2024, Vienna:*

The aim of this conference was to provide an international forum to discuss the opportunities, challenges and enabling conditions for the development and safe and secure deployment of SMRs among all possible stakeholders for SMRs.

The conference attracted over 1200 participants from 95 Member States and 17 International Organizations and included 44 technical sessions in 17 distinct technical tracks, in addition to various plenary discussions and side events, covering all aspects of SMRs.

➤ **Conferences in 2025:**

- The International Conference on Resilience of Nuclear Installations against External Events from a Safety Perspective, Vienna, October 2025
- International Conference on Stakeholder Engagement for Nuclear Power Programmes, International Conference on Stakeholder Engagement for Nuclear Power Programmes, Vienna, 26-30 May 2025

➤ **Conferences in 2026:**

- **International Conference on Effective Nuclear and Radiation Safety Regulatory Systems (RegCon), Vienna, April 2026**
- International Conference on Topical Issues in Nuclear Installation Safety: Learning from the Past to Accelerate the Future, Vienna 29 June- 3 July 2026.



International Conference on SMRs and their Applications, Vienna, October 2024 (Photo:IAEA)



International Conference on Research Reactors, Vienna, November 2024 (Photo:IAEA)

GRM Next Steps

- **Encourage more Member States to take part in GRM project for knowledge preservation and sharing and continue assisting the countries embarking on nuclear power.**
- **Publishing GRM-related technical documentation including the two drafted TECDOCS presented during the TM on Experience of Member States in the Construction and Commissioning of New Nuclear Reactors (Generic RoadMap) after incorporating the feedback received from regulators and operators of more than 20 Member States and Experts from International Organizations on 10-14 March 2025, Vienna- Austria (EVT2404277)**
- **Develop the CSIP, GRM toolkit, and SMR toolkit in coordination with SMR Regulation and Cooperation Hub under NHSI Regulatory track.**
- **Technical Meeting on Generic RoadMap Guidelines for Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor, 1-5 September 2025, Vienna- Austria (EVT2404278)**

Q&A



Thank you

