



Terms of Reference

Small Modular Reactor (SMR) Regulators' Forum (SMR RF)

July 2023

I. Purpose

To identify, enhance understanding of, and address key regulatory challenges in emerging SMR regulatory discussions. This will help enhance safety, security, efficiency in SMR regulation, including licensing, and enable regulators to inform changes, if necessary, to their requirements and regulatory practices.

II. Background

The idea of establishing an international forum for regulators to discuss issues associated with regulation of SMRs was first raised in mid-2012 after bilateral discussions between the U.S. and Canada. At the INPRO Dialogue Forum on Licensing and Safety Issues for Small and Medium-sized Reactors (SMRs), held in Vienna in July-August 2013, there was explicit interest expressed by a number of the International Atomic Energy Agency (IAEA) Member States to evaluate and discuss the benefits of forming a regulators' forum that would specifically address regulatory issues in safety and licensing of SMRs.

The IAEA was considered due to its ability to provide a long term vision to maximize Member States' participation and to provide an efficient means to apply lessons learned from discussion into the IAEA global safety framework. The intent was to work cooperatively with other regulatory forums investigating the impacts of new reactor technologies on regulation.

As a result, consultancy meetings, facilitated by the IAEA, were held in Vienna 18-20 February 2014, and 22-24 July 2014. The outcome of these consultancy meetings was an agreement to organize a Small Modular Reactor Regulators' Forum (SMR RF/Forum) on a 2-year pilot basis. A draft Terms of Reference (ToR) and draft Pilot Project Plan, including the scope of the working groups, were also produced and were subsequently accepted by the members of the Forum at the initial meeting.



A Pilot Phase of the Forum was conducted from March 2015 to May 2017, with the objective of addressing different issues for both light-water and non-light-water SMR designs. The Second Phase of the Forum was conducted from May 2017 to December 2020, and the Third Phase of the Forum is being conducted from January 2021 to December 2023.

III. Scope / Definitions

1. The scope of the Forum is to identify, enhance understanding and address key regulatory challenges that are emerging in SMR regulatory and licensing discussions to develop common regulatory positions and inform changes, if necessary, to requirements and regulatory practices. The Forum will distinguish itself from existing fora/organizations, such as OECD/NEA (e.g. MDEP, GIF, CNRA) and WNA/CORDEL, whose focus lies more on specific technical issues or particular designs. Issues covered by the Working Groups of this Forum would be cross-cutting in nature, covering common SMR issues.

2. For the purposes of this Forum, SMRs are Nuclear Power Plants that typically have several of these features:

- Nuclear reactors typically <300 MWe or <1000 MWt per reactor;
- Designed for commercial use (include prototypes or demonstration plants), i.e., electricity, production, desalination, process heat (as opposed to research and test reactors);
- Designed to allow addition of multiple reactors in close proximity to the same infrastructure (modular reactors);
- May be water- or non water-cooled;
- Use novel designs that have not been widely analysed or licensed by regulators.

3. The IAEA publications serve as references for the discussion and as a benchmark for developing common positions.



IV. Objectives and Outcomes

1. Objectives

Share SMR regulatory knowledge and experience among the members and other stakeholders to:

- Facilitate efficient, robust and thorough regulatory decisions;
- Encourage enhanced nuclear safety and security;
- Facilitate international cooperation among regulators performing SMR-related assessments;
- Identify and discuss common safety issues that may challenge regulatory reviews associated with SMRs and, if possible, recommend common approaches for resolution; and
- Advise IAEA on the need for revision or development of new IAEA publications on Safety and Security of SMRs.

2. Outcomes

- Position statements¹ on regulatory (policy and technical) issues;
- Suggestions for revisions of or drafting of IAEA documents and especially on potential enhancements to the IAEA Safety Standards with regard to SMRs;
- Generation and sharing of information that regulators may use to enhance their regulatory framework and regulatory activities;
- Description of regulatory challenges and discussion on paths forward; and
- Suggestions for high level issues to be raised to international codes and standards organizations for dispositioning.

V. Guiding Principles

The outcomes of this Forum shall not replace national regulators' responsibility for making regulatory decisions, and the following guiding principles shall apply:

- The Forum is a regulator-to-regulator² forum driven by its Members;
- Each Forum Member shall supply the appropriate expertise to contribute effectively to Forum activities and ensure that the views of the regulatory body are represented;
- Each Forum Member will make best endeavours to share its regulatory experiences and lessons learned within the scope of the Forum;
- Within the scope of confidentiality agreements, information can be shared;
- The Forum will appropriately control proprietary information;
- Forum Members may, for the purposes of completing research, seek assistance from other Forum Members;
- The Forum activities shall be periodically assessed for continuous improvement according to the project plan;
- The issues to be addressed in the Forum may be proposed by any Forum Member;
- The Forum will strive to maintain awareness of other organizations' work and align its own tasks accordingly;

¹ These can take the form of reports or formal position statements as necessary and do not necessarily represent the position of the IAEA.

² The regulator may choose to be represented by a TSO.



- The Forum will attempt to develop consensus-based documents on technical and regulatory issues of interest to forum members;
- The Forum will take into account IAEA Safety Standards and safety objectives from other organizations, such as WENRA, for new reactor designs;
- The Forum will strive to avoid duplication of work done by other organizations and fora;
- The Forum will seek to draw information from existing sources where possible, including specific information discovered during design reviews by Member States and international organizations;
- This Forum will establish and maintain relationships with other organizations working on topics relevant to the Forum. The Forum may, on occasion, invite selected representatives of these organizations to participate in its activities.

VI. Membership

1. Membership of the Forum was originally limited to the IAEA Member States who participated in the initial sessions of this Forum: Canada, China, Finland, France, Republic of Korea, Russian Federation and the United States. The United Kingdom and Saudi Arabia joined in 2018 for Phase 2. South Africa joined in March 2021. Japan Joined in March 2022. Saudi Arabia withdrew in March 2022The Czech Republic joined in June 2022.

2. Following the pilot phase, membership of the Forum is now open to all IAEA Member States who are able to contribute in a meaningful manner to the work of the Forum’s Working Groups. The work being conducted is generally of a complex nuclear safety nature with a focus on SMRs that requires experience in:

- Multidisciplinary technical assessment across multiple areas of safety;
- Application of defence in depth in design and safety analysis;
- Use of risk informed methodologies in regulatory decision making.

3. In particular, if a Member State is a SMR technology holder or developer, has operating experience or already has commitments³ for new build or firm plans to have commitments for licensing in the near future, it may apply for the membership of the Forum , which will then be subject to an approval process.

4. As a rule, Forum members are representatives of the regulatory body of a Forum Member or of a TSO providing services to the regulator. As an exception, and provided there is no conflict of interest, a Forum Member can nominate other government officials if they participate as support to an expert from the regulatory body. Such nominations are subject to the approval by the SMR RF Steering Committee.

5. Membership presupposes a commitment to devote adequate resources, with appropriate experience and knowledge base, to ensure that the Forum’s purpose and objectives can be fully accomplished [See Section XI. Finances].

³ Commitments should be considered to be pre-licensing discussions between the regulator and the vendor.



VII. Participation

1. International and regional organizations that have expressed an interest may be granted the status of observer by decision by the SMR RF Steering Committee. Observers may participate in the Forum's Working Groups and are granted a read-only access to the Forum's restricted website. Their participation in the Steering Committee's activities is limited to the Steering Committee Plenaries only.
2. IAEA Member States can participate as observers to a single combined meeting of the Steering Committee and Working Groups prior to submitting a request to join the Forum. A positive decision by the Forum's Chairperson and Vice-Chairperson is considered sufficient for allowing such participation.
3. The list of Forum Members and Observers shall be made publicly available.

VIII. Structure

1. This Forum is comprised of:

1.1. The SMR RF Steering Committee

- 1.1.1. Every Forum Member should provide a representative to the SMR RF Steering Committee capable of fully representing their regulatory body's position in technical matters and decision-making.
- 1.1.2. The Chairperson and the Vice-Chairperson shall be elected by the SMR RF Steering Committee from its membership for the three-year term, which shall be automatically extended for three-year intervals, unless: a) the Chairperson or the Vice-Chairperson decides to step down; or b) the Chairperson or the Vice-Chairperson is leaving the Forum; or c) a Steering Committee Member suggests a new candidature.
- 1.1.3. The Chairperson or Vice-Chairperson is considered elected if their candidature has received the support of the majority of the SMR RF Steering Committee members.
- 1.1.4. In the case of the Chairperson or the Vice-Chairperson leaving the Forum, an interim Chairperson or Vice-Chairperson from the same country will be appointed automatically until elections are held at the next biannual meeting.
- 1.1.5. Candidatures for the position of Chairperson or Vice-Chairperson will be accepted up until the moment of the elections at the biannual meeting.
- 1.1.6. As Scientific Secretariat, the IAEA is considered part of the SMR RF Steering Committee.

1.2. Task-specific technical SMR RF Working Groups (WGs)

- 1.2.1. The SMR RF Steering Committee will appoint a group's Chair (and Co-chair(s)), who will coordinate the group's activities;
- 1.2.2. Any Forum's member may participate in the SMR RF WGs; however, they should be capable of fully representing their regulatory body's position in technical matters.
- 1.2.3. Issues covered by the SMR RF WGs will be cross-cutting in nature, covering common issues of selected technologies.
- 1.2.4. Temporary taskforce(s), including inter-WG taskforce(s), may be established subject to the approval of the SMR RF Steering Committee, to address in a timely manner emergent issues and/or issues the examination of which requires additional



expertise. The membership of such taskforces may include experts from the Forum's Members, who are not its regular members and whose participation is limited to the specific taskforce(s).

- 1.2.5. With the approval of the SMR RF Steering Committee, IAEA staff may contribute expertise to support the SMR RF WGs in accomplishing their aims. Their role in the WGs is twofold:
 - to support the WG experts by bringing to their attention information either existing in the IAEA publications or being developed by other IAEA programmes that may be useful for the discussions at hand; and
 - to learn from the WG experts of their needs and the gaps they identify in the IAEA standards and guidance. This will serve as an input into the planning of future IAEA activities.

1.3. The Scientific Secretariat

- The IAEA will serve as the Scientific Secretariat for the Forum, appointed by the Regulatory Activities Section of the Division of Nuclear Installation Safety of the Department of Nuclear Safety and Security (RAS NSNI).

IX. Roles and Responsibilities

1. The SMR RF Steering Committee will:

- 1.1. Manage and approve the detailed programme of work, including defining topics and working methods, establishment and closure of WGs and appointment of WGs Chairs and Co-chairs;
- 1.2. Approve reports and position statements developed by the WGs;
- 1.3. Establish interfaces with other international organizations to benefit from available work and avoid duplication [see Annex I];
- 1.4. Review progress on a periodic basis to ensure that WGs and the Forum as a whole are achieving their goals according to the programme plan;
- 1.5. Decide upon the working topics for each Phase after consultation with all members and the Scientific Secretariat;
- 1.6. Based on suggestions from the WGs, make recommendations to the Scientific Secretariat, such as, for example, revisions to IAEA documents or drafting of new IAEA documents; and
- 1.7. Approve membership and observer applications.

2. The SMR RF Working Groups will:

- 2.1. Implement their specific portion of the project plan depending on the Phase;
- 2.2. Report progress to the SMR RF Steering Committee;
- 2.3. Draft a report on their dedicated portion of the project plan; and
- 2.4. Document suggestions and recommendations for consideration to the IAEA, such as specific areas of work to pursue, revisions to IAEA documents or drafting new IAEA documents.

3. Subject to the availability of extra-budgetary resources, the Scientific Secretary will:



- 3.1. Promote and facilitate the Forum;
- 3.2. Provide general and professional support staff to facilitate open collaborative meetings;
- 3.3. Develop and maintain dedicated communication platforms;
- 3.4. Provide advice on the IAEA Safety Standards;
- 3.5. Ensure timely distribution of the recommendations of the Forum concerning IAEA documents and Safety Standards to the relevant IAEA departments;
- 3.6. Support the SMR RF Steering Committee in establishing interfaces with other international organizations to benefit from available work and avoid duplication;
- 3.7. Support the SMR RF Steering Committee in reviewing progress by the SMR RF WGs on a periodic basis, to ensure that the Forum, as a whole, is achieving their goals according to the programme plan;
- 3.8. Manage, on behalf of the authors, third parties' requests to use the Forum's content; To this purpose, the authors grant the Scientific Secretary a non-exclusive, world-wide, free-of-charge licence to use and publish the aforementioned content; and
- 3.9. Perform any other activities related to the Forum requested by the SMR RF Steering Committee.

X. Meetings and Phases

1. Each Forum's Phase should last between two and three years. New working topics for each SMR RF WG are defined when a new Phase starts. Each Phase is concluded by the publication of a summary report reflecting the work of all SMR RF WGs.
2. The SMR RF Steering Committee and WGs meet twice a year during combined Meetings. These combined Meetings are organised by the Scientific Secretariat.
3. The SMR RF WGs and the Steering Committee are encouraged to meet in-between combined Meetings, using online virtual meetings or calls.
4. The quorum for the SMR RF Steering Committee meetings shall be half of its members plus one, including the Chairperson or the Vice-Chairperson. Decisions of the SMR RF Steering Committee shall be adopted by consensus of the members present at the meeting, whereby consensus is considered reached in the absence of substantiated objections.
5. Minutes of combined Meetings and list of actions shall be prepared and kept by the Scientific Secretariat.

XI. Finances

1. This extra-budgetary effort will be financed by required annual contributions of approximately 30,000 – 40,000 euros from each Forum Member. The annual contributions should be received by the Scientific Secretariat by 31 December of each year, and the SMR RF Steering Committee will follow up on those contributions.
2. Overdue contributions should be subject to a further decision by the SMR RF Steering Committee.
3. The IAEA will use these funds to provide the following support services:
 - 3.1. IAEA staff member costs, both salary and travel needed to participate in the Forum (both general and professional staff) and promote the Forum's activities;



- 3.2. Support for specific activities as necessary, such as consultants from academia to support SMR RF WG research;
- 3.3. Support for communications, including the website support required to maintain and update the Forum’s public webpages and its restricted website; and
- 3.4. Support the organisation of workshops to promote the work of the Forum.
4. Forum Members will finance their own participation in the Forum Meetings.
5. In case the financial extra-budgetary contribution constitutes a burden for a specific contributing Forum Member due to legal restrictions, the SMR RF Steering Committee may accept, on a case-by-case basis, proposals from respective Forum Members, with the agreement of the Scientific Secretariat, of contributions in-kind. These contributions in-kind should be in the format of assignment of a cost-free expert to the IAEA for one year per year of contribution, from the respective Forum Member, to work in the NSNI/RAS on tasks assigned by the RAS Section Head.
6. Every three years, an evaluation should take place to assess the Forum’s performance and to determine its further financial support.

XII. Communications (Internal / External)

1. A structured web space within the Global Nuclear Safety and Security Network (GNSSN) (maintained by the IAEA) will be used and shall include a restricted, password protected part to share information among the SMR RF Steering Committee members or WG participants.
2. Dissemination of relevant information important to other stakeholders and the public will be handled through the dedicated public IAEA webpages and other channels.
3. Representation of the Forum at relevant international conferences and meetings will be handled as needed.
4. Organizations the Forum expects to interface with include:
 - i. Regulator forums:
 - Organisation for Economic Co-operation and Development (OECD)/ Nuclear Energy Agency (NEA)
 - EU SMR Pre-Partnership
 - Regulatory Cooperation Forum (RCF)
 - European Nuclear Safety Regulators Group (ENSREG)
 - Western European Nuclear Regulators Association (WENRA)
 - ii. Industry forums:
 - Generation IV International Forum (GIF)
 - World Nuclear Association (WNA) - Cooperation in Reactor Design Evaluation and Licensing (CORDEL)
 - International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)
 - European Utility Requirements (EUR)

The Forum may, on occasion, invite selected representatives of these organizations or any other relevant ones to participate in its activities.

XIII. Use of Information Produced by the Forum



The content produced by this Forum is protected by copyright. The Forum strives to make information concerning its activities available in the public domain. However, where external parties seek to use this information, in part or in its entirety, for their own purposes, the Forum requires the parties to seek authorization from the Scientific Secretary at: SMR-RF-Contact-Point.Team@iaea.org Any inquiries may be authorized by the Secretariat using the following template:

The SMRRF SC is pleased to grant you the permission to reproduce excerpts from “_____ Report” to the extent and for the purposes detailed in your e-mail (or letter). We request that you kindly give credit to the SMR RF for the reproduction of its material in your publication.

XIV. Amendment of the Forum’s Terms of Reference

Any member of the Forum, as well as the Scientific Secretariat, may propose an amendment to these Terms or Reference (ToR). Proposed amendments shall be considered and agreed upon by consensus by the SMR RF Steering Committee.



Annex I_ Other activities under SMR RF co-ordination or with the Forum’s participation or contribution

Article 1. General Provisions regarding Other Activities under the Forum’s Co-ordination or with the Forum’s Participation or Contribution

- 1.1. Upon a proposal from an international organisation or by the Forum’s Steering Committee or individual Forum’s member(s), the Forum can be involved in activities carried out under its co-ordination or with its participation or contribution in the form of independent expert advice. Such activities shall not contradict the Forum’s stated objectives and shall contribute to its stated outcomes.
- 1.2. The decision regarding such involvement shall be made by the Forum’s Steering Committee by consensus, whereby consensus is considered reached in the absence of substantiated objections within a specified period of time.
- 1.3. The detailed modalities of the Forum’s involvement in such activities shall be decided upon and be subject to the approval by the Forum’s Steering Committee by consensus (see 1.2). These modalities shall be included in this Annex as subsequent articles.

Article 2. Forum’s Contribution to the IAEA Nuclear Harmonization and Standardization Initiative (NHSI).

- 2.1. The IAEA NHSI, launched by the IAEA DG Rafael Mariano Grossi in March 2022, aims at harmonizing and standardizing regulatory and industrial approaches in support of the effective global deployment of safe and secure advanced nuclear reactors. In its Letter to the IAEA of 6 June 2022 ([smr_rf_letter_to_iaea_on_nhsi .pdf](#)), the Forum emphasised that the Initiative was closely aligned with its objectives and its past and present programme of work and expressed its willingness and readiness to contribute to the Initiative, in particularly with respect to harmonization of regulatory approaches.
- 2.2. At the 1st NHSI Meeting, held 23-24 June 2022 at the IAEA HQ, three workstreams were agreed upon for the regulatory track, namely:
 - NHSI-RT-WG1: Building a framework for sharing of technical information among regulators
 - NHSI-RT-WG2: International pre-licensing regulatory design review process for a generic design
 - NHSI-RT-WG3: Process for leveraging other regulatory bodies’ reviews

At the same Meeting, it was suggested that the Forum should play a key role with respect to the NHSI-RT-WG3; this was reaffirmed during the Meeting between the IAEA and Forum’s Chairs held on 5 July 2022. The IAEA proposed that the Forum lead NHSI-RT-WG3 through the participation of the Forum’s WG 1, with the Chair of the Forum’s WG 1 serving as the Chair of the NHSI-RT-WG3. In line with the NHSI-RT-WG 1 and 2, the main output of NHSI-RT-

WG3 would be a draft IAEA TECDOC. To preserve the Forum's independence, the common positions of the Forum included in the draft TECDOC would not be modified by the IAEA, which is consistent with the overall TECDOC development process. The Chairs agreed to take this proposal to the Steering Committee for a decision, taking into consideration the existing workload and provisions of the Terms of Reference. The decision will be reflected by the inclusion of the text in this Annex in the Terms of Reference.

2.3. At the ad-hoc Meeting of the Forum's Steering Committee held on 13 July 2022, the Forum's participation in the IAEA NHSI was approved by consensus and the following framework was agreed:

- a. The Forum's WG 1 will serve as the main organisational modality for the **NHSI-RT-WG3: Process for leveraging other regulatory bodies' reviews**, with its focus and schedule adjusted accordingly and a draft IAEA TECDOC as a key output. This IAEA TECDOC shall follow the standard IAEA publication process.
- b. The Forum's WG 1's Chair will serve as the Chair of the NHSI-RT-WG3, while its composition will be expanded to include other participants nominated by Member States to the IAEA.
- c. The Forum shall not bear direct additional costs associated with external NHSI-RT-WG3 participants.
- d. The Forum's Steering Committee will be regularly appraised of the NHSI-RT-WG3 activities, its overall progress, and outputs.
- e. The leading role of the Forum in the NHSI-RT-WG3 does not preclude participation of the Forum's Members in the other two NHSI-RT-Working Groups (1 & 2), which may be required by the Forum Members' organizations. Moreover, such participation is encouraged.
- f. In the outputs, produced as a result of the Forum's participation in the NHSI, the Forum's contribution will be acknowledged.

2.4 Any changes to the above framework shall be agreed by the Forum's Steering Committee by consensus.