

11th Meeting of the Global Nuclear Safety and Security Network (GNSSN)

17 September 2025, IAEA, Vienna

GNSSN Key Achievements

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GNSSN Chair



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GNSSN Objectives

- **Strengthen Coordination** of regional and interregional efforts to share knowledge, experience, and lessons learned on nuclear safety and security.
- **Support Capacity Building** by identifying and facilitating opportunities for Member States.
- **Enhance Collaboration Tools** through the continuous implementation and improvement of the GNSSN IT platform.
- **Promote IAEA Support** by encouraging Member States to benefit from the Agency's services, standards, and guidances.



IAEA GC68 Resolutions for GNSSN

- Requests the Secretariat to support and coordinate regional and interregional efforts for the sharing of knowledge, expertise and experience on safety-relevant issues.

&

- Encourages Member States to participate in knowledge-sharing platforms such as the Global Nuclear Safety and Security Network (GNSSN) for efficient information sharing and effective cooperation.



Current Membership

Membership: IAEA Member States, International Organizations like EC, OECD-NEA, WINS, UNSCEAR and representatives from regional and thematic networks.

Member States

- Argentina
- Belgium
- Brazil
- China
- Egypt
- Estonia
- France
- Germany
- Japan
- Jamaica
- Morocco
- Norway
- Pakistan
- Russian Federation
- Korea, Republic Of
- Spain
- Türkiye
- United Kingdom
- United States of America

Associated Networks

- Asian Nuclear Safety Network (**ANSN**)
- Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (**FORO**)
- Forum of Nuclear Regulatory Bodies in Africa (**FNRBA**)
- Arab Network of Nuclear Regulators (**ANNuR**)
- European and Central Asian Safety Network (**EuCAS**)
- Caribbean Radiation Safety and Security Network (**CRSSN**)
- Technical and Scientific Support Organizations Forum (**TSOF**)
- Global Nuclear Safety and Security Communication Network (**GNSSCOM**)



GNSSN Capacity Building Initiatives

Key Capacity Building initiatives under GNSSN:

- **TSO self-assessment** of technical and scientific capabilities supporting regulatory functions (**TOSCA**)
- **Self-assessment methodology** for National Nuclear Safety Knowledge Management
- **Model Master's Degree Curriculum** for Nuclear Safety and Security
- **IAEA School of Nuclear and Radiological Leadership for Safety**

TOSCA

A new innovative IAEA on-line tool for self-assessment of national regulatory TSO capabilities

TSO Self-Assessment of Capabilities

Regulatory functions require support by scientific and technical expertise. This can include development and/or provision of regulations and guides, notification and authorization, licensing procedures, regulatory review and assessment, regulatory inspection, enforcement, emergency preparedness and response and communication and consultation with interested parties.

There is no "one size fits all" standard model of regulation for technical support. Requirements in this area (SAR Part 1) are objective and performance oriented only, so there is no universal benchmark to refer to when assessing national TSO capabilities. In this context, ITCRR-VTRTS defines core notions and values, to help Member States reflect on their current and future technical support needs. It also provides some illustrative national examples, the organization and financing of technical support is a responsibility of each member state and should be in line with key values of regulatory processes, to achieve technical competence, sustainability as well as independence from commercial interests.

Is the national approach and practice for technical support in adequation with the current and expected regulatory needs?

The IAEA TSO Forum identified a need to further support member states in the self-assessment of their technical support capabilities. In response, the Agency developed a new web-based tool, called TOSCA, for self-assessment of the technical support capabilities. TOSCA was conceived by IAEA TSO Forum experts, and its web design, in the form of an Oracle® based tool, was produced by GRS, Member of ETSON.



The TOSCA implementation roadmap will lead through the following main steps:

- Select, from a broad menu established on the basis of TECDOC 1815 and of relevant GSR requirements, the fields of technical support expertise which need assessment in your country;
- Define the targets and expectations against which current technical support capabilities will be benchmarked;
- Assess those capabilities in terms of organization and processes, and in terms of performance of the support actually provided;
- Elaborate the main conclusions drawn from the self-assessment, and present them at a national TSO Workshop;
- Develop an action plan to further enhance regulatory capabilities and ensure their sustainability, in line with current and future regulatory needs.

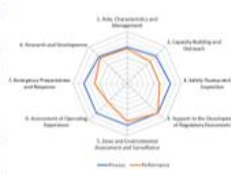
The TOSCA tool is user friendly, and allows all stakeholders concerned (government bodies, regulatory authorities, technical support providers, including those embedded in regulatory bodies) to contribute and exchange through the self-assessment process. TOSCA provides visual displays to synthesize the results of the self-assessment and support analysis.

TOSCA and its supports will help member state authorities, through this process, to include a preliminary mission of IAEA experts in the member state, and later of a national TSO workshop, gathering all key stakeholders with the result of a national TSO action plan.

Interested in the TOSCA approach and self-assessment tool?

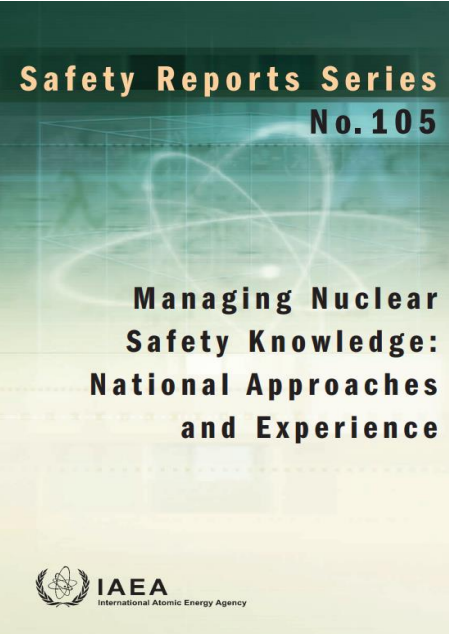
TSCOF_Contact-Point@iaea.org

Visit: <https://gnssn.iaea.org/main/tsf>



Safety Reports Series
No. 105

Managing Nuclear Safety Knowledge: National Approaches and Experience



1. Introduction
2. Master's Degree Program with description of modules
3. Notional path
4. Methodology
5. Challenges

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GNSSN Capacity Building Initiatives

TSO self-assessment for technical and scientific capabilities supporting regulatory functions (TOSCA) :

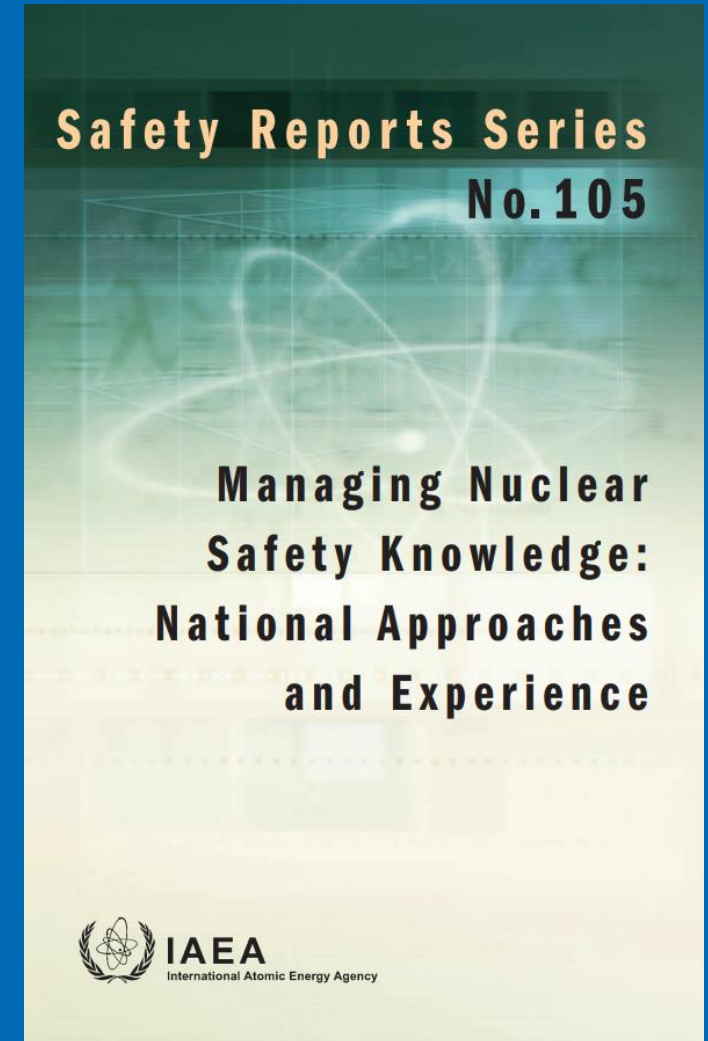
- Self-assessment methodology based on **IAEA TECDOC-1835**, and corresponding IT tool has been successfully launched by the IAEA TSO Forum in close cooperation with ETSON.
- More and more IAEA Member States have requested IAEA missions (TSO national workshops) for the period 2025-2026.
- IAEA Secretariat successfully hosted the **5th International TSO Conference** in Dec 2024 at the IAEA, Vienna and the event was well attended with 370 participants from 88 Member States and 7 International Organizations. Special session on TOSCA was conducted during the Conference.
- Close collaboration with **associated regional networks of GNSSN and Regulatory Cooperation Forum (RCF)** for further promotion of TOSCA and thereby provide necessary support to embarking countries for development of their technical and scientific capabilities, supporting regulatory functions



GNSSN Capacity Building Initiatives

National Nuclear Safety Knowledge Management:

- Nuclear Safety Knowledge Management is an integral part of **IAEA's approach to Capacity Building** and IAEA Secretariat has been committed to support IAEA Member States with all necessary services to enhance knowledge management at individual, organizational and national level.
- Self-assessment methodology for nuclear safety knowledge management **at national level**, based on **SRS-105** has been implemented by the IAEA Secretariat in close cooperation with the Department of Nuclear Energy of the IAEA as well as technical divisions within the department.
- Implementation of corresponding IT tool is in progress in close cooperation with NSC, China.
- IAEA is committed to launch this self-assessment methodology and corresponding IT tool in Q1 2026.
- GNSSN and its associated networks are encouraged to acknowledge this IAEA service and create awareness among intended audience within their respective organizations and at national level.



GNSSN Capacity Building Initiatives

Model Academic Curriculum for a Master's Degree Programme in Nuclear Safety and Nuclear Security :

- Objective of the Master's Degree Curriculum is to assist and provide guidance to universities, academic institutions and other relevant stakeholders to **develop their higher-level educational programmes** to address their needs.
- Each academic institution to **develop its own unique programme tailored** to suit the State's needs for E&T in nuclear safety and security.
- Development of draft curriculum completed in close cooperation and with guidance of international experts (professors) from esteemed universities.
- IAEA Secretariat intends to make this curriculum available to IAEA Member States in Q3 2025.

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GNSSN Capacity Building Initiatives

IAEA School of Nuclear and Radiological Leadership for Safety

- Intended audience for this School is **junior and mid-career professionals** .
- Methodology incorporates experiential learning, case studies, group dynamics, role play, lectures and is based on **IAEA Safety Standards (GSR-Part 2)**.
- The School's program can range from **2-week to 3 days** and can be **tailored** to **national needs** or shared **regional approach**.
- Till date, **26 Schools** have been conducted with participation of **800+ individuals** from **108+ IAEA Member States**.



experiential learning



case studies



group dynamics



role play



lectures

GSR Part 2

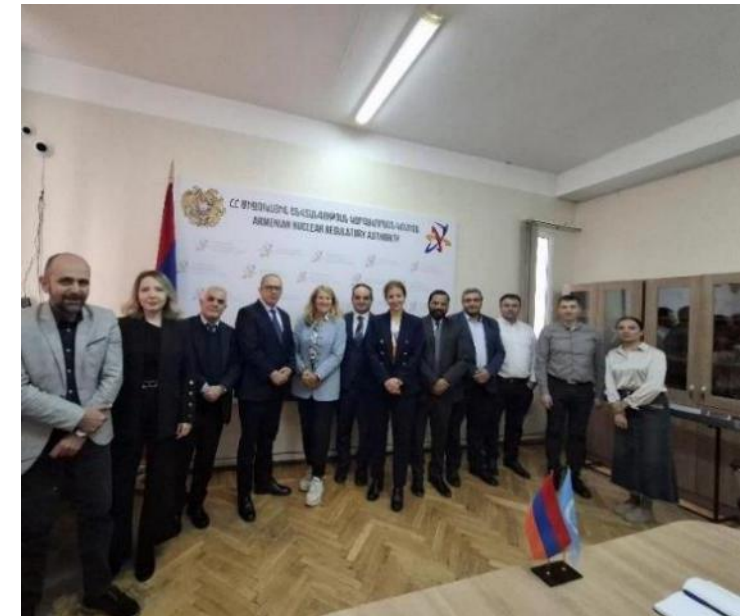
GNSSN Interregional Cooperation

- **A joint interregional project** on Decommissioning, Remediation and NORM is being considered under the GNSSN framework, based on feedback from the survey among GNSSN and its associated networks and discussions at the 20th Steering Committee Meeting and continued last April during the 22nd Steering Committee Meeting.
- **The translation of the IAEA–FORO TECDOC-1995** on Safety Culture is in progress, aiming to make this important reference more widely accessible across regional networks.
- **GNSSN continues to actively promote gender balance** in the nuclear community through initiatives of its associated networks.

GNSSN Recent Achievements (since July 2024)



- Active participation from all regions.
- Enhanced collaboration with thematic networks.
- Expanded use of GNSSN platform as a knowledge hub.
- Continued cooperation with IAEA and key partners.



GNSSN Recent Achievements (since July 2024)

- Continued support to development and maintenance of IT platforms for SMR Regulators' Forum, Generic Roadmap for First Nuclear Reactor, ...
- Restructuring of websites for associated networks such as ANSN and ANNuR..



Quick Links

% SMR RF Terms of Reference (ToR)

% SMR RF Newsletter

• Edition 4

• Edition 3

• Edition 2

• Edition 1

• Newsletter Subscription

% SMR RF Webinars

• Licensing Working Group/ NHST RT WG3 report

• Phase 3 DSA Working Group report

• Phase 3 MCCO Working Group report

% SMR RF (restricted area)

% SMR RF Promotional Material

• SMR RF Poster

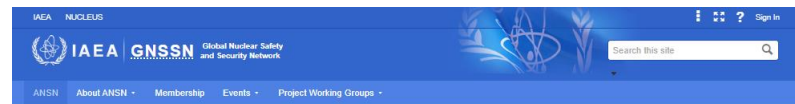
• SMR RF Rollup Poster

• SMR RF Phase 3 Poster

• SMR RF Leaflet

• SMR RF Card

✉ Contact SMR Forum Team



The Asian Nuclear Safety Network (ANSN) serves as a sustainable platform for regional cooperation, with the goal of achieving high level of nuclear safety, radiation safety, and nuclear security in line with the IAEA Safety Standards and Nuclear Security Guidance across East and South Asia. The ANSN provides 1) A platform for collaboration and development of regional strategies to address challenges in the region; 2) Forums for sharing experiences and knowledge to identify best practices applicable to the region; 3) Coordination and implementation of activities, including capacity-building initiatives; 4) Development and pooling professionals in relevant areas within the region

News

ANSN revived to best support the needs of its Member Countries: Completely revised Terms of Reference in effect.
(Please find detailed information at [ANSN ToR](#))

Join ANSN as a member: The ANSN is open to national regulatory bodies, technical and scientific support organizations, and other organizations involved in nuclear and/or radiation safety and security from countries in the East and South Asian regions. Each ANSN member can propose various types of activities based on its technical needs through the national ANSN Steering Committee member for the network's future activities and nominate professionals for various ANSN activities. Please click [here](#) for further information on ANSN Membership

Join the new ANSN collaboration projects: In addition to its traditional role in supporting the capacity building efforts of ANSN Member Countries, the ANSN is launching collaboration projects on the three most relevant topics in the region. The projects will be managed by respective working groups composed of professionals nominated by ANSN members.



Highlights

% ANSN Factsheet

% ANSN Annual Report (2024)

% ANSN Activity Concept Paper (2025)

% GNSSN Newsletter | January 2024

Relevant Links

Global Nuclear Safety and Security Network (GNSSN)

Forum of Nuclear Regulatory Bodies in Africa (FNRA)

Arab Network of Nuclear Regulators (ANuR)

European and Central Asian Safety Network (EuCAS)

Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO)

Technical and Scientific Support Organizations Forum (TSOF)

Global Nuclear Safety and Security Communication Network (GNSSCOM)

IAEA Safety Standards

✉ Contact us

Establishing the Nuclear Safety Infrastructure for a First Nuclear Reactor

Home

About GRM

GRM Outline

Target Beneficiaries

Related Publications

SSG-16 Training Material (20 Elements)

Comprehensive Safety Infrastructure Platform (CSIP)

Upcoming Events

"The IAEA assists Member States embarking on nuclear installation projects by providing the Generic Road Map (GRM), which supports the establishment of the nuclear safety infrastructure for a first nuclear reactor. The GRM offers guidance and practical information on implementing the actions recommended in SSG-16 (Rev.1) "Establishing the Safety Infrastructure for a Nuclear Power Programme."

The GRM helps articulate strategic thinking through a phased approach towards the commissioning and operation of a first nuclear reactor. It integrates a wide range of information, including the sequence of major steps in each phase along with the priorities to progress through these steps, navigation to the training modules, the relevant IAEA safety standards and related publications, guidance on self-assessment tools and safety review missions. The GRM also encompasses case studies from experienced, expanding, and embarking countries.

At last, the GRM facilitates effective communication among organizations establishing nuclear safety infrastructure by defining clear goals, promoting coordination, maintaining consistent messaging and fostering transparency and openness."

To assist Member States embarking on nuclear installation projects, the IAEA launched the Generic RoadMap (GRM) project in 2020 for the establishment of the nuclear safety infrastructure for a first nuclear reactor. The GRM provides guidance and practical information for implementing the actions recommended in SSG-16 (Rev.1) "Establishing the Safety Infrastructure for a Nuclear Power Programme". Alongside existing IAEA safety standards and peer review services, the GRM provides training materials and a series of topical publications. These resources incorporate experiences and lessons learned from new build projects in countries that are embarking on, expanding, or have experience with a nuclear reactor programme.



Quick Links

% RCF Plenary Meeting

% Review Missions and Advisory Services (RRMS)

% Integrated Review of Infrastructure for Safety (IRIS)

% Integrated Nuclear Infrastructure Review (INIR)

% Site and External Events Design Review Service (SEED)

% Technical Safety Review (TSR)

% Operational Safety Review Team (OSART)

Related Resources

Establishing the Safety Infrastructure for a Nuclear Power Programme – No. SSG-16 (Rev. 1)

Milestones in the Development of National Infrastructure – No. NG-G-3.1 (Rev. 1)

GRM leaflet

GRM Members' Area

✉ Contact GRM Team

Conclusions

- **GNSSN continues to play a central role** in strengthening coordination among regional and thematic networks.
- Through close cooperation, it supports regional and interregional initiatives that **promote the sharing of knowledge, expertise, and experience** on safety-related issues.
- Member States are encouraged to **actively participate in GNSSN platforms** for more effective information exchange and collaboration.
- GNSSN also promotes wider use of the IAEA's technical support, services, standards, and guidance to help Member States **enhance their nuclear safety and security** frameworks.



Thank you!

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