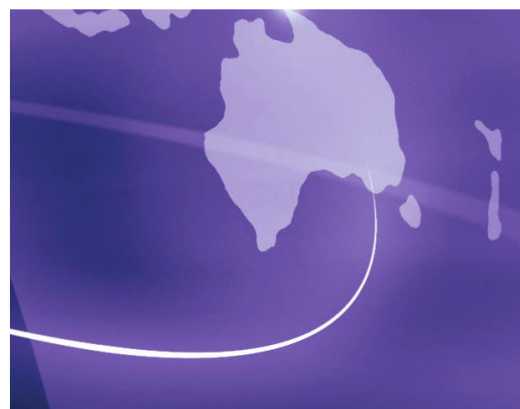




GNSSN Annual Report 2018-2021

Global Nuclear Safety and Security Network



IAEA

60 Years

Atoms for Peace and Development

GNSSN ANNUAL REPORT 2018-2021

Contents

1.	INTRODUCTION	6
1.1.	BACKGROUND	6
1.2.	GOVERNANCE.....	2
1.3.	GNSSN VISION	2
	GNSSN MISSION	2
1.4.	GNSSN OPERATING PRINCIPLES.....	2
1.5.	CURRENT PARTNERS.....	2
1.6.	Global Networks and Forums.....	3
1.7.	Thematic networks.....	4
1.8.	Regional safety networks.....	4
1.9.	Nuclear Security Networks	4
1.10.	Member States with their own national platform	5
1.11.	OBJECTIVE AND SCOPE.....	5
2.	ACCOMPLISHMENTS IN 2018-2021.....	6
2.1.	ASSOCIATION SPECIALLY LINKED TO THE GNSSN- THE IBERO-AMERICAN FORUM OF RADIOLOGICAL AND NUCLEAR REGULATORY AGENCIES.....	6
2.1.1.	Regional Safety Networks and Associations	7
2.2.	THE IMPLEMENTATION OF THE GNSSN ACTIVITIES.....	10
2.3.	ASIAN NUCLEAR SAFETY NETWORK (ANSN)	11
2.3.1.	Summary of Progress and Outcomes	11
2.3.2.	Impact in Member States	19
2.3.3.	Beneficiary countries	19
2.3.4.	Future Project Outlook.....	20
2.4.	BENEFICIARY COUNTRIES.....	20
2.5.	ARAB NETWORK OF NUCLEAR REGULATORS (ANNUR)	22
2.5.1.	Summary of Progress and Outcomes	22
2.5.2.	Outputs in 2018 - 2021.....	22
2.5.3.	Impact in Member States	26
2.5.4.	Beneficiary countries	26
2.5.5.	Future Project Outlook.....	26
2.6.	CAPACITY BUILDING (CB).....	27
2.6.1.	Summary of Progress and Outcomes	27
2.6.2.	Outputs in 2018-2021.....	28
2.6.3.	Impact in Member States	30
2.6.4.	Beneficiary Countries	30
2.6.5.	Future Project Outlook.....	31
2.7.	EUROPEAN AND CENTRAL ASIAN SAFETY NETWORK (EUCAS).....	31
2.7.1.	Summary of Progress and Outcomes	31

2.7.2.	Outputs in 2018-2021.....	31
2.7.3.	Virtual 7 th Steering Committee meeting 7-8 July 2021.....	33
2.7.4.	Impact in Member States	35
2.7.5.	Beneficiary Countries	35
2.7.6.	Future Project Outlook.....	35
2.8.	FORUM OF NUCLEAR REGULATORY BODIES IN AFRICA (FNRBA).....	36
2.8.1.	Summary of Progress and Outcomes	36
2.8.2.	Outputs in 2018-2021.....	37
2.8.3.	Impact in Member States	39
2.8.4.	Beneficiary countries	40
2.8.5.	Future Project Outlook.....	40
2.9.	GLOBAL NUCLEAR SAFETY AND SECURITY COMMUNICATIONS (GNSSCOM) –.....	41
2.9.1.	Summary of Progress and Outcomes	41
2.9.2.	Outputs in 2018-2021.....	41
2.9.3.	Impact in Member States	44
2.9.4.	Beneficiary Countries	44
2.9.5.	Future Project Outlook.....	44
2.10.	GLOBAL NUCLEAR SAFETY AND SECURITY NETWORK (GNSSN).....	45
2.10.1.	Summary of Progress and Outcomes	45
2.10.2.	Outputs in 2018-2021.....	45
2.10.3.	Impact in Member States	48
2.10.4.	Beneficiary Countries	48
2.10.5.	Future Project Outlook.....	48
2.11.	TECHNICAL AND SCIENTIFIC SUPPORT ORGANIZATIONS FORUM (TSOF).....	49
2.11.1.	Summary of Progress and Outcomes	49
2.11.2.	Outputs in 2018-2021.....	49
2.11.3.	Impact in Member States	51
2.11.4.	Beneficiary Countries	52
2.11.5.	Future Project Outlook.....	52
2.12.	DIFFICULTIES ENCOUNTERED IN IMPLEMENTATION AND CHANGES INTRODUCED	52
2.12.1.	ANSN.....	52
2.12.2.	CB	52
2.12.3.	EuCAS	53
2.12.4.	FNRBA	54
2.12.5.	GNSSCOM	54
2.12.6.	TSOF	54
2.13.	FINANCIAL OVERVIEW	54
3.	LESSONS LEARNED AND PROPOSED ACTIONS	58
3.1.	LESSONS LEARNED	58

3.2.	RISKS:.....	59
3.3.	WORK PLAN OVERVIEW OF 2022 – 2023.....	60
3.3.1.	ANSN.....	60
3.3.2.	ANNuR	61
3.3.3.	CB	61
3.3.4.	EuCAS	61
3.3.5.	FNRBA	62
3.3.6.	GNSSCOM	63
3.3.7.	GNSSN	63
3.3.8.	TSOF.....	63
4.	Abbreviations.....	65

1. INTRODUCTION

1.1. BACKGROUND

The International Atomic Energy Agency (IAEA)'s Nuclear Safety and Security Programme (Major Programme 3), covers one of IAEA's essential statutory functions: to establish standards of safety. It provides for the application of such standards and for guidance on nuclear security with the aim of achieving high levels of nuclear safety and security, to protect the people, the society, and the environment.

The IAEA assists Member States in building national capacities and competencies. As per its Statute, one of the main functions of the IAEA is "to foster the exchange of scientific and technical information on peaceful uses of atomic energy" (Article III.A.3). In addition, according to Article VIII.C, the IAEA "shall take positive steps to encourage the exchange among its members of information relating to the nature and peaceful uses of atomic energy and shall serve as an intermediary among its members for this purpose". Through dedicated knowledge networks, the IAEA promotes the transfer of knowledge from countries that have mature radiation and nuclear programmes to countries which have only just started embarking on such programmes.

The launch of the Global Nuclear Safety and Security Network (GNSSN) was formally announced at the International Conference on Effective Nuclear Regulatory Systems: Facing Safety and Security Challenges, held in Moscow, Russian Federation, in 2006. It was a step which took into consideration the recommendations contained in the International Nuclear Safety Group (INSAG) report Strengthening the Global Nuclear Safety Regime (INSAG Series No. 21, IAEA, Vienna, 2006).

The GNSSN supports the IAEA's Nuclear Safety and Security Programme (Major Programme 3) by enhancing international cooperation and dialogue in the field of nuclear safety and security with key stakeholders. The stakeholder community includes government agencies and ministries; regulatory authorities; private users of materials and technologies; and international organizations. In addition, GNSSN as a knowledge network, is part of the comprehensive IAEA methodology for capacity building and demonstrates the potential value of networking and sharing experiences towards enhancing nuclear safety and security globally. The initial development of the GNSSN was carried out jointly by IAEA and the G8 Nuclear Safety and Security Group in 2007 and since then it has evolved into a strong human and information technology (IT) platform supporting the establishment and continued efforts of global

regional, and thematic nuclear safety and security associations, forums and networks. Recognizing the continued importance of networking and international cooperation, sharing experiences, and preserving knowledge, Member States have routinely called upon the IAEA to continue maintaining and developing the GNSSN, most recently in GC Resolution GC(64)/RES/9. Considering this mandate, the IAEA Secretariat has supported the GNSSN since its inception and continues to provide technical and secretariat support for a wide range of activities.

GNSSN continued supporting the work of its encompassing regional and thematic networks from 2018-2021. With the Asian Nuclear Safety Network (ANSN), over 61 activities on regional and national level involving over 500 participants were implemented to support the Member States' capacity building in the area of nuclear safety. The Forum of Nuclear Regulatory Bodies in Africa (FNRBA) implemented 8 meetings from 2018-2021. Two meetings were held to enhance the coordination between the thematic working groups, partner countries and the Secretariat. The Arab Network of Nuclear Regulators (ANNuR) carried out 11 capacity building activities, involving more than 90 participants from 15 participating countries, and the public interface of the ANNuR website was restructured and made available to the global community. Finally, the newly established European and Central Asian Safety Network (EuCAS) held 8 events covering waste management, waste legacy and environmental remediation.

Additionally, the Secretariat continued supporting the work of Global Nuclear Safety and Security Communication Network during 2018-2021. Different meetings were held within the framework of the Global Nuclear Safety and Security Communication Network (GNSSCOM) to review the IAEA Communicator's Toolbox and to exchange challenges and good practices in safety and security communication during non-emergency situations. GNSSCOM meetings highlighted the importance of improving communication effectiveness and building public trust.

The IAEA Secretariat provided all necessary administrative and technical support for the Technical and Scientific Support Organizations Forum (TSOF) and successfully published the IAEA publication TECDOC-1835 in 2018, as well as implemented a new self-assessment methodology for TSOs to develop and further enhance their technical and scientific capabilities for supporting regulatory functions.

In an effort to support the establishment and enhancement of national regulatory infrastructures for nuclear safety, the IAEA further developed the International Regulatory Network (RegNet). RegNet provides a platform for information on and links to IAEA guidance, resources and services for Member States considering establishing or further developing their safety infrastructure for a nuclear power programme in line with IAEA safety standards.

The number of networks and forums under the GNSSN has increased. The current status of Networks, Forums and Portals included under the GNSSN is as follows:

1.2. GOVERNANCE

Effective GNSSN governance is critical to achieve the GNSSN mission and the commitment to effective and efficient resource management. GNSSN is governed by the GNSSN Steering Committee

1.3. GNSSN VISION

A connected and vibrant global community of nuclear safety and security professionals and organizations utilizing modern technology to share experience and preserve knowledge to facilitate capacity building.

GNSSN MISSION

To achieve this vision, the GNSSN's mission in the scope of nuclear safety and security is to:

- Share relevant knowledge, experience, and lessons learned, in an organized and targeted manner.
- Identify and promote the use of knowledge, experience, and best practices across organizations and networks.
- Facilitate and support collaboration and networking between organizations at the national, subregional, regional, and international levels.
- Promote and disseminate information on the Agency's activities related to nuclear safety and security and how they benefit Member States.

1.4. GNSSN OPERATING PRINCIPLES

The activities and focus of the GNSSN programme are guided by three principal documents:
GNSSN Strategic Plan

- The Strategic Plan provides background on the GNSSN, identifies the mission and objectives, and lays out an action plan to accomplish the objectives with corresponding performance indicators to gauge success.

GNSSN Steering Committee Terms of Reference

- The Terms of References establish the GNSSN Steering Committee and highlight its role and main functions within the broader GNSSN programme.

GNSSN IT Governance Plan

- The Governance Plan is intended to guide the IAEA Secretariat in how to maintain, and use, the IT infrastructure associated with the GNSSN.

1.5. CURRENT PARTNERS

- Arab Atomic Energy Agency (AAEA);

- AREVA, France;
- Argonne Laboratories (ANL), USA;
- Autorite de Surete Nucleaire (ASN), France;
- Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz/
Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety,
Germany;
- Canadian Nuclear Safety Commission (CNSC), Canada;
- Consejo de Seguridad Nuclear (CSN), Spain;
- European Commission (EC),
- European Union (EU);
- Department of Foreign Affairs, Trade and Development, Canada;
- Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany;
- Institut de Radioprotection et de Surete Nucleaire (IRSN), France;
- Institute for Environmental Protection and Research (ISPRA), Italy;
- Korea Institute of Nuclear Safety (KINS);
- Norwegian Radiation Protection Authority (NRPA), Norway;
- Nuclear Regulatory Authority (NRA), Japan;
- Nuclear Safety and Security Commission (NSSC), Republic of Korea;
- ROSATOM, the Russian Federation;
- ROSTECHNADZOR, the Russian Federation;
- Scientific Centre for Nuclear and Radiation Safety (SEC-NRS), the Russian
Federation;
- Società Gestione Impianti Nucleari S.p.A. (SOGIN), Italy;
- Radiation and Nuclear Safety Authority (STUK), Finland;
- U.S. Department of Energy, USA;
- U.S. Department of State, USA;
- U.S. Nuclear Regulatory Commission (USNRC), USA.

1.6 Global Networks and Forums

- Association Specially Linked to the GNSSN
 - The Ibero-American Forum of Radiological and Nuclear Regulatory
Agencies (FORO)
- International Regulatory Network (RegNet)
 - Forum for Embarking Countries
 - Regulatory Cooperation Forum (RCF)
 - WWER Regulators' Forum
 - Forum for Senior Regulators of CANDU Reactors
- Global Safety Assessment Network (GSAN)
- Technical and Scientific Support Organization Forum (TSOF)
- Global Nuclear Safety and Security Communication Network (GNSSCOM)
- Global Education and Training Resources (GETR)

1.7. Thematic networks

- Control of Sources Network (CSN)
- Education and Training Network in Nuclear Waste and Radiation Safety
- Forum for Safety and Security of Small Medium Reactors
- Occupational Radiation Protection Network (ORPNET)
- Mediterranean Region Transport Network (MedNet)
- Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS)

1.8. Regional safety networks

- Arab Network of Nuclear Regulators (ANNuR)
- Asian Nuclear Safety Network (ANSN)
- Forum of Nuclear Regulatory Bodies in Africa (FNRBA)
- Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO)
- European and Central Asian Safety Network (EuCAS)
- [Liaison with regional networks external to the IAEA (e.g., the European Nuclear Safety Regulators Group (ENSREG), Western European Nuclear Regulators Association (WENRA)]

1.9. Nuclear Security Networks

The IAEA nuclear security programme is implemented by the Division of Nuclear Security through the Nuclear Security Plans approved by the IAEA Board of Governors. The relevant nuclear security networks – the International Nuclear Security Education Network (INSEN) and the International Network of Nuclear Security Training and Support Centres (NSSC Network) – are coordinated by the IAEA in conjunction with interested institutions and Member States. Information sharing, network coordination and communication are managed through the NUSEC portal.

- (1) The mission of the INSEN Network is to enhance global nuclear security by promoting excellence in nuclear security education. This is achieved through the development of dedicated teaching materials and other tools, offering professional development opportunities for interested faculty and instructors, and promoting nuclear security education curriculum.
- (2) The mission of the NSSC Network is to contribute to the global efforts to enhance nuclear security capacity building through an effective and collaborative network of nuclear security training and support centres. The primary objectives of the Network are to facilitate information sharing and cooperation among centres and to identify best practices and lessons learned related to NSSC programmes in training, technical support, and scientific support. Specific information about these networks can be requested by directing inquiries to insen@iaea.org or nssc@iaea.org.

1.10. Member States with their own national platform

The National Platforms provide access to nuclear safety information and knowledge to a very wide range of national and international stakeholders in a uniform and structured manner. The National Platforms serve as a tool to harmonize the national approach to nuclear safety and security knowledge management. By developing the platform, and adapting it to the national needs and priorities, the platform can assist capacity building efforts at governmental, organizational and individual levels.

Countries that have currently completed their National Platforms are:

- Belarus
- Bulgaria
- Cameroun
- Canada
- China
- Egypt
- Ethiopia
- France
- Germany
- Indonesia
- Kenya
- Malaysia
- Nigeria
- Russian Federation
- South Africa
- Spain
- Tunisia
- Ukraine
- United States of America
- Viet Nam

1.11. OBJECTIVE AND SCOPE

As defined in the GNSSN Strategic Plan, the Secretariat is requested to prepare a bi-annual report on the development and usage of GNSSN. This annual report is used to report on the GNSSN activities and progress and drafts out the accomplishment of the Secretariat in relation to the planned activities. The report is comprised of five chapters: (i) Introduction; (ii) GNSSN Strategic Plan; (iii) Accomplishments; (iv) Progress Overview; and (v) Lessons learned and proposed actions.

2. ACCOMPLISHMENTS IN 2018-2021

This section outlines the outputs in 2018-2021.

2.1. ASSOCIATION SPECIALLY LINKED TO THE GNSSN- THE IBERO-AMERICAN FORUM OF RADIOLOGICAL AND NUCLEAR REGULATORY AGENCIES

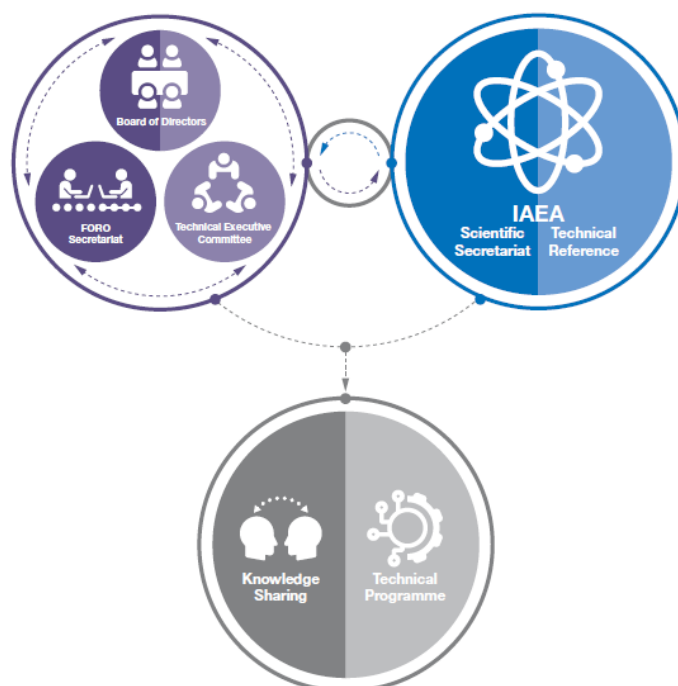
The Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO) is an association of radiological and nuclear regulatory agencies from the Iberoamerican region established in 1997. FORO has served as an additional channel for implementing novel initiatives and foster dialogue between its members and its role has been evolving and becoming more relevant. The official language is Spanish.

FORO members are the regulatory bodies of 10 countries of the Iberoamerican region: Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Paraguay, Peru, Spain and Uruguay.

As an active and special liaison association of the GNSSN, FORO has cooperated and participated in the GNSSN activities including its Steering Committees and Plenary meetings and strengthening the global nuclear safety and security framework. One of the most important contributions of FORO to the GNSSN, has been the exchange of experiences, lessons learned, technical guidance, and results of IAEA-FORO joint technical projects towards promoting high levels of radiation protection, nuclear safety and security.

FORO and the IAEA maintain a special cooperation relationship. Practical arrangements between the IAEA and FORO were extended in July 2020 for a three-year period. FORO approved its Action Plan for 2021–2023 and a new project on security during the transport of radioactive material at its annual plenary meeting in July 2021.

How FORO works



FORO TECHNICAL PROGRAM

- Started in 2003, so far 14 projects have been completed and 7 are in progress. All results on La RED: www.foroiberam.org
- 5 FORO-IAEA joint publications (1 of them also with PAHO) and 5 Publications in preparation
- Participation of more than 100 experts from member organizations
- Spending above €1.5 M since the beginning
- 3 Informative Bulletins (Newsletters)

2.1.1. Regional Safety Networks and Associations

Since the launch of the Technical Program, 21 projects and activities have been started, and 14 of them have been satisfactorily concluded, with the participation of more than 100 experts from the region and a budget of over one million euros.

During the reporting period, FORO continued working on different projects covering a variety of regulatory issues in nuclear safety and radiation protection. Furthermore, in 2021, FORO launched a first project in the area of nuclear security.

The following four projects were finalized during this period:

Practical Guide for the Implementation of Dispensing in Radioactive Facilities

The objective of the guide was to support operators of radioactive facilities that generate small quantities of waste with a methodology for carrying out the clearance process in accordance with the criteria established in IAEA publications and in the regulations of most of the FORO countries. Likewise, through its implementation, to facilitate the control of the clearance performed by the regulatory bodies.

Resistance of Nuclear Power Plants

The first objective of this activity was to gather the conclusions reached as a result of the resilience assessment carried out with the participation of FORO member countries with operating nuclear power plants, taking into account the lessons learned after the accident at the Fukushima Daiichi nuclear power plant.

The second was to share the results with the other regulators in the region to inform them firsthand about the safety status of these nuclear power plants.

Competences of Regulatory Agency Personnel in Medical and Industrial Radiological Applications

The acquisition, development and maintenance of the competencies of regulatory body staff are fundamental to the achievement of organisational goals. The overall objective of this project was to provide a tool to enable the development of a competence building and development programme for regulators in medical and industrial practices.

Certain parts of the final document were intended to provide assistance in the development of specific aspects of the programme. These parts were based on the exercises and analyses developed in the framework of the project, as well as on a set of good practices identified in various countries, and can be taken in part or in full, as a practical guide or as illustrative examples.

Extension of the Application of the SEVRRRA Risk Matrices Methodology to New Radiation Therapy Techniques

This project aimed to develop and implement a model for risk analysis in the practices of Intensity Modulated Radiation Therapy (IMRT) and Diagnostic Nuclear Medicine (NDM), using the methodology of risk matrices, to prevent the occurrence of accidents with adverse radiological consequences for patients, workers and members of the public, and to identify those barriers or defenses that have the greatest impact on risk reduction, to strengthen the evaluation and inspection procedures of the regulatory authority in these practices.

For this purpose, the accidental sequences of greatest risk are determined, as well as the barriers and reducers that have the greatest impact on risk reduction in these practices, and in this way, improvements can be proposed to the inspection and authorisation procedures of the regulatory authority.

And the following ones were initiated:

Standardization of the Inspection Process of Nuclear Research Reactors

The objective of this project is to harmonise the manuals, guides, plans, processes, criteria, scope, depth and frequency of inspections for research reactors, in order to verify compliance with the legislation in force applicable to the conditions imposed and the relevant permits, and to achieve an adequate and similar level of safety at these facilities. The project also includes the development of harmonized guidelines for the regulatory ageing control of research reactors.

This will improve the effectiveness of national inspection programmes by establishing their frequency, scope and depth, and by defining safety and regulatory criteria applicable to inspection depending on the type of facility.

Reactor Operator Training and Licensing

The overall objective of this project is to improve regulatory practices in the training and licensing process of operating personnel through technical exchange, comparison and development of documentation, methodologies and support tools.

In addition, as specific objectives the project aims to:

- Exchange regulatory practices in all aspects and stages of this process;
- Share methodologies, means, tools and infrastructures that can be used by regulators in the process;
- Develop support material (good practice guides, technical documents applicable to certain activities in the process;
- Apply the best practices and lessons learned from the project to both power and research reactors, through mutual learning between the practices applied to both types of reactors and;
- Disseminate and promote the application of project outputs at national, regional and international levels (the latter in collaboration with IAEA).

Licensing Criteria and Inspection Requirements for Centralized Radiopharmacies

Centralized radiopharmacy is an area that is growing in importance and requires increasing efforts by regulatory authorities during licensing due to its complexity. Currently, there are no published international recommendations on licensing criteria and inspection requirements for this type of facility. These criteria depend, among other things, on the radionuclides and the activities expected to be commercialized, the design of the plant, the personnel involved, transport requirements, etc. Consequently, centralized radiopharmaceutical facilities present important aspects for radiation protection that need to be individually assessed in order for operations to be carried out without risk to the working personnel, the environment and the public.

This project, based on the exchange of experience and knowledge in relation to licensing (including inspections), aims to develop criteria for licensing and inspection requirements for centralized radiopharmacies.

Maintenance and Periodic Checks of Reusable Packages for the Transport of Radioactive Material Not-subject to Design Approval

The objective of this project is to develop a guide establishing criteria to aid in the development and implementation of programmes for the maintenance and periodic verification of reusable radioactive material packages not subject to design approval and their tracking and control by the regulatory authorities.

For this purpose, firstly, the documents and good practices on the maintenance and periodic checking of packages not requiring approval, as established in the IAEA's Regulation on the safe transport of radioactive material (SSR-6), were identified, and secondly, the experience of the Latin American countries with respect to tracking by the regulatory authorities of the maintenance and periodic checking of these packages was compiled, identifying the difficulties encountered.

Resilience Assessment of the Safe Operation of Nuclear Power Plants, Nuclear Research Reactors and Radioactive Facilities in Times of Pandemic

The overall objective of the project is to harmonize among the FORO countries a regulatory position aimed at ensuring and maintaining nuclear and radiation safety in the face of pandemic scenarios/simultaneous unavailability of personnel necessary for the safe and reliable operation of nuclear power plants, nuclear research reactors and more complex radioactive facilities, in accordance with a graded approach.

Nuclear Security during Domestic Transport of Radioactive Materials

The main scope of this project is to develop a technical guide establishing criteria and good practices for the development and establishment of nuclear security requirements for inland transport of radioactive materials, taking into account the synergy between these requirements and existing safety and security requirements. These necessities will be carried out using a graded approach based on the existing threat in each country, the establishment of good practices according to the assigned security level and the security level assigned and the categorisation of the radioactive materials in each shipment, as well as the application of measures in accordance with international recommendations and national regulations.

All products generated by FORO are public and are available on its portal, "La RED" (www.foroiberam.org) for any interested person. Furthermore, most of the results are being published by the IAEA in the form of joint FORO-IAEA technical documents (TecDoc) and have been presented at the most important conferences around the world.

With all this, FORO wants to promote a beneficial exchange of experiences and knowledge in key areas of radiation protection and nuclear safety and security in areas of interest, relevant and topical sharing experiences and regulatory knowledge and, most especially, the results of its Technical Program, one of the fundamental pillars of FORO to achieve its objectives.

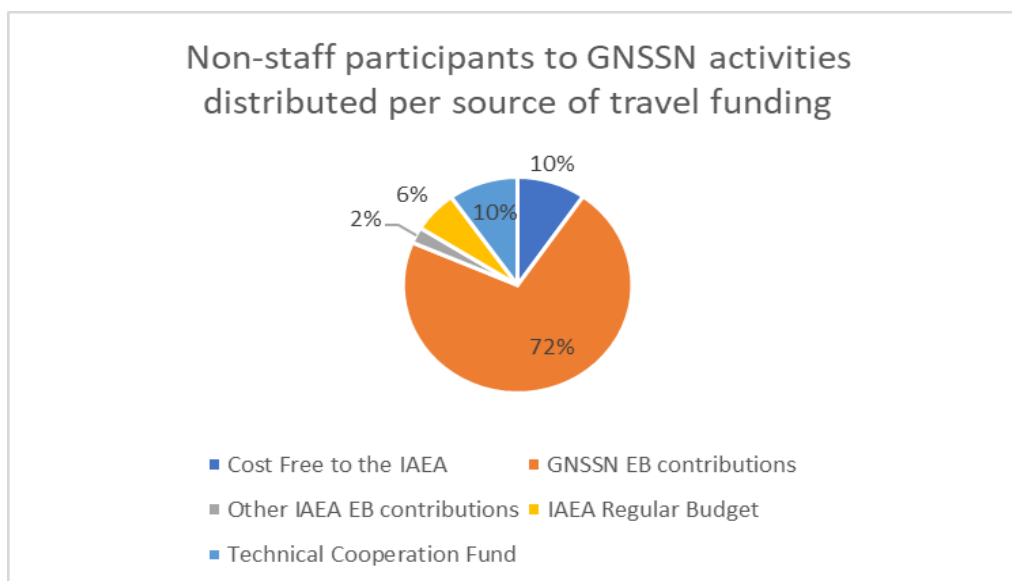
1. Probabilistic Safety Analysis of Radiotherapy Treatments with Linear Accelerator	8. Establishment of Licensing Criteria and Inspection Requirements for Facilities with Cyclotrons for the Production of Radioisotopes Used In Medical Applications and Research
2. Application of the Risk Matrix Method to Radiotherapy	

3. Development of a Tool for the Application of the Risk Matrix Method to Radiotherapy 4. Self-Assessment of the Regulatory Programmed For Radiation Protection in Medical Exposures 5. Regulatory Practices in Aging and Life Extension of Nuclear Power Plants 6. Strategy for the Prevention, Detection and Response to the Inadvertent Presence of Radioactive Material in the Recycling Of Metals and Other Associated Processes 7. Establishment of a Common Methodological Guide for the Analysis of Radiological Emergencies and Lesson Identification	9. Safety Culture in Organizations, Facilities and Activities with Sources of Ionizing Radiation 10. Guidance for the Development of a Competence Building and Development Program for Nuclear Reactor Regulators 11. Application of the Risk Matrix Method in Industrial Radiography Practical Guide For the Implementation of Clearance for Radioactive Facilities Resistance of Nuclear Power Plants 12. Competences of Regulatory Agency Personnel in Medical and Industrial Radiological Applications 13. Extension of the Application of the SEVRRRA Risk Matrices Methodology to New Radiation Therapy Techniques
--	--

Table: List of concluded FORO projects by 2021

2.2. THE IMPLEMENTATION OF THE GNSSN ACTIVITIES

1. Data from 2018 - 2021
2. 66 meetings and workshops (classified as Events in the IAEA Event Management System, EMS), were held within the framework of the GNSSN in 2018. This includes two international conferences.
3. In addition four plenary meeting were held during the GC, not included in the EMS
4. In addition 11 consultancy contracts were granted, not included in the EMS
5. Total number of registered participants in the Events was 725, including 620 non-staff participants and 105 IAEA staff members. This does not include all the participants that participated at their own expense. In addition 23 experts were hired for consultancy contracts.
6. Out of the 620 non-staff participants 72% were funded via the GNSSN extrabudgetary contributions, 10% came as cost free to the IAEA, 10% were funded by the IAEA Department of Technical Cooperation and the remaining were funded from IAEA Regular Budget fund or via other extrabudgetary contributions.



The 2018 outputs are represented per Network or Technical Area and per the strategic goal to which they contribute: The GNSN aims at the following strategic goals:

- Strategic Goal 1 (SG1): Enhanced networking and cooperation within and among Member States and networks (incl. development of new networks, steering committee meetings, Practical Arrangement meetings, Inter-Regional WS)
- Strategic Goal 2 (SG2): Strengthened IT platform for the exchange of technical knowledge (incl. management of nuclear safety knowledge, Nuclear Safety Knowledge Base)
- Strategic Goal 3 (SG3): Enhanced competence in nuclear safety and security (incl. national and regional training courses and WS)
- Strategic Goal 4 (SG4): Harmonized capacity building approaches (incl. annual meetings, TMs, attending conferences, Fukushima lessons learnt, etc.)

The Strategic Goals from 2021 are:

- Enhance the coordination of regional and inter-regional efforts for the sharing of knowledge, experience, and lessons learned on safety and security.
- Identify and facilitate capacity building opportunities in Member States
- Implement, maintain, and improve the GNSSN IT platform for efficient collaboration among stakeholders.
- Encourage Member States to benefit from the Agency's technical support, services, standards, and guidance related to nuclear safety and security.

2.3. ASIAN NUCLEAR SAFETY NETWORK (ANSN)

2.3.1. Summary of Progress and Outcomes

ANSN successfully implemented 61 out of the planned 104 activities over the period 2018 to 2021 and the Table 1 shows the detail numbers and categories of the activities.

These activities were planned based on the results of the self-assessment conducted by ANSN member countries in 2016-2017. During the period from 2018 to 2021, nine joint IAEA-KINS workshops were held to which ANSN members as well as ANNuR and FNRBA members were invited. Unfortunately, however, many events were not held from 2020 to 2022 due to the COVID-19 pandemic, and the planned events were postponed to 2023 and beyond.

Notable achievements during 2018 were preparation of “Guidelines on Evaluation of ANSN Support Activities and Self-Assessment”. ANSN conducted an evaluation of its implemented activities in 2020. During the 27th ANSN Steering Committee meeting in May 2018, it was proposed to revive the publication of ANSN Annual Report. Concrete steps to finalise the format, roles and responsibilities for this were finalised. ANSN also formulated a Task Force to facilitate publication of its first Technical Report by 2020; topic of this Technical Report would be “ANSN Self-Assessment Process”. One of the purposes of this Technical Report is to furnish necessary guidelines for other regional networks to adopt a similar approach.

The Terms of Reference for the Radiation and Transport Safety Topical Group (ANSN RTTG) were also endorsed by the ANSN Steering Committee members in 2018. ANSN initiated formulation of topical group members for this group by requesting ANSN member countries to submit their nominations.

SG1: Enhanced networking

- *Consultancy Meeting to revise the ANSN Terms of Reference and to develop formats for ANSN Progress Reports and Technical Reports, Austria, Vienna, 9-11 April 2018.* The purpose of the meeting was to revise the Terms of Reference of the ANSN topical groups, the SACG and the Steering Committee, to bring these in line with the revised ANSN Vision and ANSN Terms of Reference; and to propose structure and format for ANSN annual progress reports and technical reports, based on past ANSN annual reports and other regional networks. Non-staff participants 1
- *Sixth Meeting of the Self-Assessment Coordination Group, Austria, Vienna, 12-13 April 2018.* The purpose of the meeting was to consider newly proposed Asian Nuclear Safety Network (ANSN) activity plans, create a draft 2019 ANSN activity plan for discussions at the 27th ANSN Steering Committee and agree on future actions of the Self-Assessment Coordination Group (SACG). Non-staff participants 6
- *27th Meeting of the Steering Committee of the Asian Nuclear Safety Network, Austria, Vienna, 9-11 May 2018.* The purpose of the meeting was to review the progress of ANSN activities conducted during the period of January-May 2018; review and approve the ANSN activity plan for 2019-2020; and approve the modified Terms of Reference for the ANSN

Topical Groups and newly formulated ANSN Radiation and Transport Safety Topical Group. Non-staff participants 27

- 5th ASEANTOM meeting, Singapore, Singapore, 26-27 June 2018. The purpose of this travel was to, on behalf of NS department: 1) participate in the 5th Annual meeting of the ASEAN Network of Regulatory bodies on Atomic Energy (ASEANTOM) and to deliver a presentation on Asian Nuclear Safety Network; 2) participate in ASEATOM Technical Workshop on Nuclear Safety, Human Resource Development and Emergency Preparedness and to deliver a presentation on capacity building and human resource development, including the leadership school. Staff travel only.
- *Third Plenary Meeting of the ANSN, Austria, Vienna, 19 September 2018*
- *Consultancy Meeting to develop guidelines and methodology to monitor and evaluate ANSN self-assessment results and actions, Japan, Tokyo, 1-3 October 2018.* The purpose of the meeting was to develop guidelines and methodology to monitor and evaluate Asian Nuclear Safety Network (ANSN) self-assessment results and actions. Non-staff participants 3
- *Seventh Meeting of the Self-Assessment Coordination Group, Japan, Tokyo, 4-5 October 2018.* The purpose of the expert meeting was to review the results and activities related to Self-Assessment Coordination Group (SACG) during the period of April-September 2018 and create a detailed future action plan of SACG. Non-staff participants 5
- *28th Meeting of the Steering Committee of the ANSN, Indonesia, Bali Island, 14-15 November 2018.* The purpose of the meeting was to review the progress of ANSN activities conducted during the period of May-October 2018 and the recommendations of the 3rd ANSN Plenary held on the margins of the 62nd IAEA General Conference. Non-staff participants 6
- *Consultancy Meeting of the ANSN was virtually held in 24-25 November 2021.* The purpose of the event is to review the Asian Nuclear Safety Network's performance during 2021 and plans for 2022, and to discuss the results of the Self-Assessment Coordination Group's activities. The ANSN activity plan, ways to improve effectiveness and efficiency, contents of the Technical Report from the Self-Assessment Coordination Group (SACG) and the criteria for ANSN membership were discussed in the meeting.
- *31st Meeting of the Steering Committee of the ANSN* was virtually held on 8 December 2021, and a total of 18 members (except IAEA staff) attended the meeting from Bangladesh, France, Germany, Indonesia, Japan, Republic of Korea, Malaysia, Philippines, Singapore, Thailand, and Viet Nam. The purpose of the event was to review the progress of the activities of the ANSN, and to approve the revised ANSN activity plan for 2022. Most of the recommendations from the Consultancy Meeting on the ANSN management were introduced in the Steering Committee Meeting. In addition, the regional workshops held in 2021 were introduced, and the activity plan for 2022 and 2023 were presented for approval. There was no specific objection to the activity plan and the recommendations of the CS.

SG2: Strengthened IT platform

- Provide necessary support to users in ANSN member states for the online nomination process;
- Sharing of information pertinent to ANSN activities via the centralised ANSN website;
- Revival of the ANSN Information Technology Support Group (ITSG) with a revised Terms of Reference (ToR). The intent of this revival is to ensure sustainability of knowledge sharing on the centralised ANSN website by the ANSN member states:
- Drafting of system requirement specification of the previously conceptualised online system within the centralised ANSN website to facilitate ANSN stakeholders in the self-assessment process as well as evaluation of ANSN activities.

SG3: Enhanced competence

- *Regional Workshop on Regulatory Inspection Programmes for Research Reactors, Australia, Sydney, 5-9 February 2018.* The objective of the workshop was to provide practical information to enable the participating countries to enhance their capabilities in the area of regulatory inspections of research reactors. The workshop also provided a forum for the participants to discuss their national practices and to exchange their experience related to the subjects covered, as well as to identify good practices and areas that need improvement with regard to regulatory supervision, licensing, license compliance and enforcement. Total number of participants 37
- IAEA-Fukui Regional Workshop on the Instructor Training Course on Safety Leadership, Japan, Fukui, 16-20 April 2018. The objective of this regional workshop was to provide instructors with information on the subject of Safety Leadership, according to the IAEA Safety Standards. The concepts of leadership, management for safety, and safety culture for the regulatory body and other stakeholders involved in the implementation of a nuclear power program were addressed. Lessons learned from past nuclear accidents and regulatory enhancements were also lectured. The workshop offered opportunity to share experiences, training strategies, and relevant ANSN and IAEA materials. Non – staff participants 11
- Joint IAEA-KINS: Workshop on Siting Evaluation for Nuclear Facilities, Korea, KINS Daejeon, 16-20 April 2018 Regional Workshop on Improving Competence and Expertise in Identifying Performance Gaps by Using Peer Review Methodology, China, Wuhan, 15-18 May 2018. The purpose of the workshop was to share knowledge and experiences related to identifying performance gaps by using peer review methodology both from the IAEA and the nuclear power industry, to share common performance gaps identified in Member States, to provide best practices in addressing these gaps, and to present the relevant IAEA Safety Standards. Non- Staff participants 11

- *National Workshop on Safety Requirements for Site Evaluation, Philippines, Quezon City, 28 May-1 June 2018.* The purpose of the event was to present an overview of the safety requirements and criteria for the site evaluation of nuclear installations, to share information and knowledge on international regulations, best practices and case studies related to the evaluation and analysis of geotechnical, hydrological, and human induced hazards as applied to site evaluation for nuclear installations particularly NPPs, and to provide a forum for discussion on specific issues existing in the country and sharing lessons learned from site selection and evaluation processes conducted so far. Total number of participants 41
- *Regional Workshop on the Development of a Knowledge Management System for the Regulatory Body and Annual Meeting of the Topical Group on Education and Training. Austria, Vienna. 18 – 22 June 2018.* The purpose of the workshop was to develop/strengthen the skills and competencies of the participants in developing nuclear safety knowledge management programmes at national and organizational level. Total number of participants 16
- Joint IAEA-KINS: Regional Network Meeting on radiation safety and emergency response, Korea, Daejeon, 25-29 June 2018. Regional Meeting for Central Governments and Regulatory Bodies on the Development of a National Strategy and Regulatory Requirements for Radioactive Waste Management, China, Taiyuan, 9-13 July 2018. The purpose of the event was to exchange and enhance the knowledge of the participants about the concept of clearance to reduce the amounts of generated radioactive waste and its importance for development and implementation of national strategies for radioactive waste management. Total number of participants 21
- *National Workshop on Systematic Assessment of Regulatory Competence Need (SARCoN) using IAEA SARCoN Methodology, Jakarta Indonesia, 9-13 July 2018.* The purpose of the event was to establish the necessary knowledge, skills and attitude for using the IAEA SARCoN methodology and enable the host country to individually and independently identify competences needed, conduct gap analysis and establish action plan/ training programme to cover the gap. Total number of participants 21
- *National Workshop on Using the IAEA methodology for Systematic Assessment of Regulatory Competence Needs, Thailand, Bangkok, 23-26 July 2018.* The purpose of the event was to establish the necessary knowledge, skills and attitude for using the IAEA SARCoN methodology and enable the OAP to individually and independently identify competences needed, conduct gap analysis and establish action plan/ training programme to cover the gap. Total number of participants 34
- *National workshop on preparedness and response arrangements for events involving a nuclear emergency in a neighbouring country, Viet Nam, Hanoi, 27-29 August 2018.* The purpose of the event was to provide relevant information, practical guidance on nuclear emergency response arrangements and to share the other countries. Total number of participants 27

- Expert meeting on Evaluation of a Nuclear Installation Site with respect to Geotechnical Aspects, River Flooding and Radiological Impacts and Meeting of the ANSN Topical Group on Siting, Thailand, Bangkok, 3-7 September 2018. The purpose of this expert meeting was to share information and knowledge on IAEA safety standards and supporting documents and good practices related to evaluation of nuclear installation site for geotechnical aspects and hazards, river flooding and evaluation of possible radiological impact of nuclear installations on workers, public and environment due to radiation exposure during normal operation and accidents. Total number of participants 14
- *National workshop on the analysis of stakeholders, the development of message, and the improvement of communication skills, Viet Nam, Hanoi, 1-4 October 2018.* The purpose of the event was to enhance their capability in development of message and the participants are expected to improve their communication skills for the implementation of CNEST Project (Center of Nuclear Energy Science and Technology) in Vietnam. Total number of participants 28
- Expert meeting on Nuclear Safety Culture Self-Assessment based on the New Methodology, Viet Nam, Hanoi, 1-5 October 2018. The purpose of this expert meeting was to provide a forum for discussing culture, the elements of a safety culture improvement programme, the relationship with other organizational improvement activities and strategies, as well as the role of self-assessment of safety culture in regulatory bodies for establishing improvement priorities. Total number of participants 17
- Annual Meeting of the Regional Advisory Safety Committee for research reactors in Asia and Pacific (RASCAP), Argonne, IL, United States of America. 1-5 October 2018. The purpose of the event was to provide a forum for safety committees of operating organizations of research reactor for the exchange of information and sharing knowledge and experiences on the safety issues of research reactors of common interest within the Asia and the Pacific region. Total number of participants 17
- Joint IAEA-KINS Regional Network Meeting on Basic Professional Training Course for nuclear safety, Korea, Daejeon, 15-26 October 2018 The meeting was intended to review and provide a broad overview of all the safety concepts and their application to nuclear power plants and research reactors. Its nature and scope were primarily oriented to junior professionals in nuclear safety-related activities, but also appropriate for the trainers who want to teach their staff and the specialized professionals who want to expand their view on nuclear safety. Total number of participants 20
- Expert meeting on the Coordination of Safety and Security Aspects for Establishing Synergy and Integration and Meeting of the ANSN Topical group on Regulatory Infrastructure. Kuala Lumpur, Malaysia. 22 – 26 October 2018. The purpose of the event was to provide and exchange information on coordination of safety and security aspects during the regulatory oversight of facilities and activities for establishing synergy and integration with country specific example and practices of regulatory oversight mechanism. Total number of participants 33

- *National Workshop for Central Governments and Regulatory Bodies on the Development of a Communication Strategy, Thailand, Bangkok 29 October – 2 November 2018.* The purpose of the event was to provide guidance to responsible authorities and established regulatory bodies on how to effectively communicate and consult with interested parties, including the public, when making regulatory decisions involving nuclear and radiological regulated activities. Total number of participants 45
- Expert meeting on National Policy and Strategy, including Knowledge Transfer for Safety, Thailand, Bangkok, 12-16 November 2018. The purpose of the event was to provide support to Member States in developing a national policy and strategy for nuclear safety. The workshop will include an overview of the Safety Standards and an exercise to prepare a framework of national policy and strategy. Non- Staff participants 7
- *Expert meeting on How to Develop Capacity Building of Safety Assessment and Meeting of Topical Group on Safety Assessment, Thailand, Phuket, 26-30 November 2018.* The purpose of the workshop was to provide lectures, to hold exercises on safety assessment in safety system design, especially passive safety systems, and to enhance the participants' review capacity for safety assessment report. Total number of participants 20
- Joint IAEA-KINS: Workshop on Regulatory Infrastructure for Nuclear Safety, Korea, Daejeon, 3-7 December 2018. The purpose of the event was to provide an overview of the key issues and subjects concerning the development of an effective and adequate national regulatory framework and infrastructure for nuclear power plants (NPPs) in line with the relevant IAEA Safety Requirements and recommendations outlined in SSG-16.
- *Regional Workshop on Safety Requirements for Site Evaluation and Reviewing Safety Analysis Reports for Siting was virtually held in 6-10 September 2021,* and a total of 30 members attended the meeting from 7 Member States. The purpose of the event was to review and discuss safety requirements for site evaluation and safety analysis report reviews for siting nuclear power plants. The workshop also provided a forum for IAEA experts to share their experience on relevant IAEA safety standards, site licensing process, necessary regulations, application of review and assessment process for the site evaluation report, and application of inspection process for the site characterization activities for nuclear installations.
- *Regional Workshop on Inspection and Enforcement of Nuclear Installations by Regulatory Bodies was virtually held in 4-7 October 2021,* and 12 participants from 5 Member States attended. The purpose of the event was to provide the participants with knowledge of the IAEA safety standards and country-specific examples of invited experts related to the development and implementation of inspection and enforcement programmes for nuclear installations.
- *Regional Workshop to Share Communication-Related Experience, including on the Implications of Pandemic Situations was virtually held in 4-8 October 2021,* and a total of 18 members from 6 Member States attended the meeting. The purpose of the event was to

share and discuss experiences regarding the national implications of the COVID-19 pandemic in relation to communication with interested parties, including the public.

- *Regional Workshop on Strategies for Attracting and Retaining Highly Qualified Personnel at Regulatory Bodies was virtually held in 11-15 October 2021*, and a total of 20 members attended the meeting from 7 Member States. The purpose of the event was to present the latest developments in attracting, developing, and retaining highly qualified personnel, and to discuss case studies on talent management in national nuclear institutions for the benefit of regulatory bodies.
- *Ninth Annual Meeting of the Regional Advisory Safety Committee for Research Reactors in Asia and the Pacific was virtually held in 11-14 October 2021*, and a total of 17 members from 7 Member States attended. The purpose of the event was to provide a forum for the safety committees of research reactor operating organizations in the Asia and the Pacific region to share knowledge and experiences related to research reactor safety.
- *Regional Workshop on Deterministic Safety Analysis for Nuclear Power Plants was virtually held in 29 November-3 December 2021*, and a total of 24 member attended from 7 Member States. The purpose of the event was to review, through lectures and practical exercises, practices for carrying out deterministic safety analyses.

SG4: Harmonized capacity building

- *Annual Meeting of the Topical Group on Communication and Regional Workshop on the Use of Social Media for Communication, including Monitoring and Evaluation, Viet Nam, Hanoi, 18-22 June 2018*
- *Sixth Annual Meeting of the Regional Advisory Safety Committee for research reactors in Asia and Pacific (RASCAP), USA, Illinois, 1-5 October 2018*
- *Regional Workshop on the Development of a Knowledge Management System for the Regulatory Body and Annual Meeting of the Topical Group on Education and Training, Austria, Vienna, 18-22 June 2018*. The purpose of the ANSN ETTG Regional Workshop was to strengthen the skills and competencies of the participants in developing nuclear safety knowledge management programmes at national and organizational level.
- *Regional workshop on the Coordination of Safety and Security Aspects needed to Establish Synergy and Integration and Annual Meeting of the Topical Group on Regulatory Infrastructure, Malaysia, Putrajaya, 22-26 October 2018*. The objective of the Asian Nuclear Safety Network (ANSN) meeting was to provide a forum for exchange of information on coordination of safety and security aspects during regulatory oversight of facilities and activities for establishing synergy and interface based on relevant IAEA Safety Standards and IAEA Security Guidelines; to share country specific practices of regulatory oversight in safety and security among the participating countries by identifying issues, challenges and areas for further improvements.

- *Consultancy Meeting on the evaluation report of ANSN activities for 2018-2019, 29-31 January 2020, Austria, Vienna.* The purpose of the event was to review and discuss the second self-assessment and evaluation of ANSN activities in 2018 and 2019. Three participants from one country, Japan, met with six IAEA staff.
- *Virtual Consultancy Meeting on the ANSN Activity Plan for 2021-2023, 14-16 October 2020.* The purpose of the event was to review and draft the ANSN support activity plan for 2021-2023 to support capacity building on nuclear safety of ANSN member countries. 6 participants with 4 IAEA staff attended. The draft plan generated in the meeting will be implemented after the approval of ANSN Steering Committee meeting.
- *Virtual Eighth Annual Meeting of the Regional Advisory Safety Committee for Research Reactors in Asia and the Pacific (RASCAP), 30 November-4 December 2020.* The purpose of the event was to provide a forum for the safety committees of research reactor operating organizations on safety issues of common interest. 22 participants with one IAEA staff attended. RASCAP plan for 2021 was developed during the meeting.

2.3.2. Impact in Member States

ANSN implemented 61 support activities from 2018 to 2021, which were based on member states' national action plans with the gaps found during their respective self-assessment. Through this mechanism, Member States have utilized the knowledge and information gained from participating in ANSN support activities to fill the gaps in their nuclear safety infrastructure. In particular, the knowledge and information obtained from the ANSN support activities were used to improve Member States' national Knowledge Management Systems and Human Resource Development Programs. Member States actively tried to organize domestic technical events to exchange knowledge and information from ANSN activities with relevant domestic experts in the country.

ANSN Member States are using the results of their participation in ANSN support activities to check and improve their National Action Plans for strengthening their nuclear safety capabilities.

Due to the pandemic, many activities were postponed. This was an inevitable decision for more helpful and effective implementation. Meanwhile, the draft ANSN Activity Plan for 2021-2023 was generated in the consultancy meeting, which includes postponed activities from the current ANSN Activity Plan for 2018-2020.

2.3.3. Beneficiary countries

Algeria, Bangladesh, Burkina Faso, China, Cote D'Ivoire, D.R. Congo, Egypt, Ethiopia, Ghana, Indonesia, Japan, Jordan, Kazakhstan, Kenya, Korea, Libya, Madagascar, Malaysia, Mali,

Mauritania, Morocco, Nigeria, Philippines, Saudi Arabia, Senegal, Singapore, South Africa, Sudan, Thailand, Tunisia, Viet Nam, Zambia

2.3.4. Future Project Outlook

Based on the results of the 1st ANSN self-assessment cycle, implementation of the ANSN activities had been continued until 2019. By the end of 2019, the evaluation of ANSN activities was conducted by the ANSN SACG in close coordination with the ANSN Member States. Guidelines for this evaluation have already been formulated. ANSN will also plan activities for the newly formulated ANSN Radiation and Transport Safety Topical Group (RTTG)

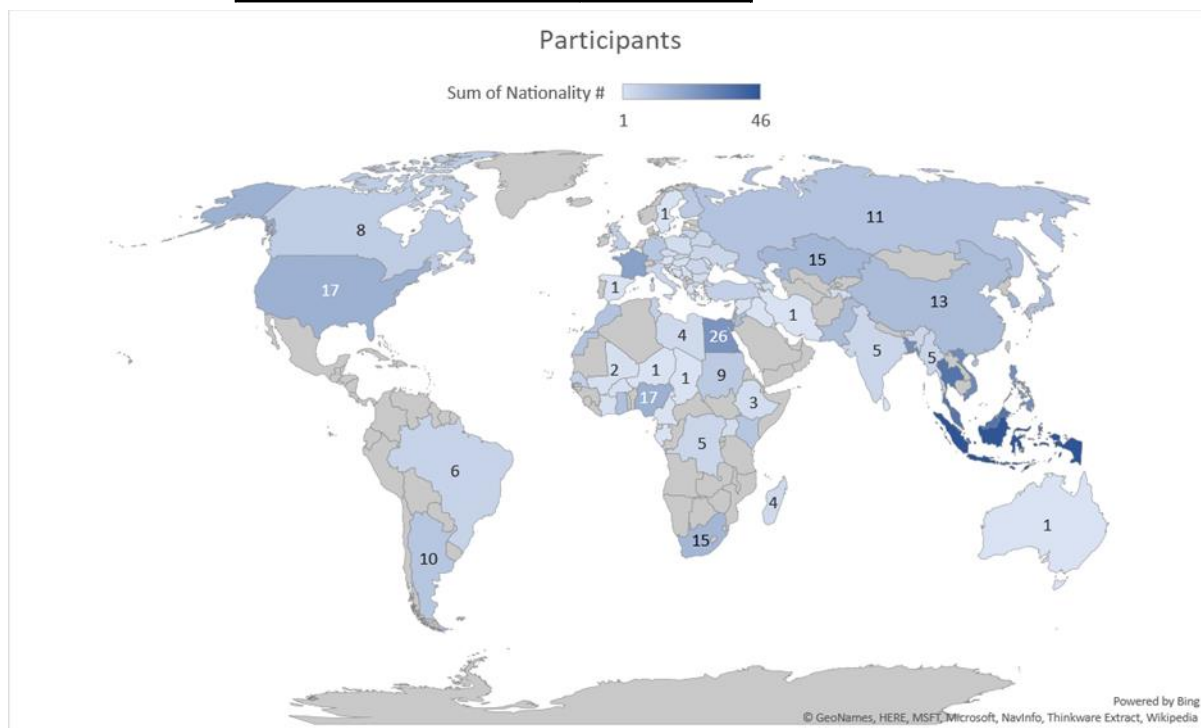
The key success of ANSN strongly depends on the coordination of ANSN Self-Assessment Coordination Group (SACG) and each ANSN Topical Group (TGs). IAEA will continue to facilitate this ongoing coordination.

ANSN Steering Committee members strongly encouraged more collaboration and cooperation among the regional networks such as FORO, FNRBA and ANNuR to share knowledge, experiences on capacity building activities in the area of nuclear safety. The existing GNSSN framework facilitates the cooperation by inviting the Chairs of all regional networks to the yearly GNSSN Plenary.

2.4. BENEFICIARY COUNTRIES

The non-staff participants represented 79 different nationalities. The main beneficiary countries, and the number of non-staff participants that represented these twenty countries, are listed below. These countries provided 67% of the non-staff participants.

Non-staff participants from the main beneficiary countries per nationality	Number of participants per nationality
Indonesia	47
Malaysia	38
Thailand	38
Viet Nam	30
Philippines	29
Bangladesh	28
Egypt	25
France	22
United States of America	19
Nigeria	17
Kazakhstan	15
Republic of Korea	15
South Africa	15
Jordan	13
Ghana	12
Japan	12
Pakistan	11
China	10
Germany	10
Russian Federation	10



2.5. ARAB NETWORK OF NUCLEAR REGULATORS (ANNUR)

2.5.1. Summary of Progress and Outcomes

The Arab Atomic Energy Agency (AAEA) and IAEA recognize the importance of an independent, effective regulatory body to guarantee a high level of safety and security of all nuclear and radioactive facilities and activities under their national responsibility. ANNuR implemented eighteen activities from 2018 to 2021, to address the importance of capacity building at governmental, institutional, organizational and individual levels. The activities are intended to strengthen relations among the Arab Nuclear Regulators and to identify concrete actions to address current and future needs, to assist States in establishing and/or improving their regulatory infrastructure through effective and efficient capacity building, including education and training. In addition, ANNuR members participated in eight Joint IAEA-KINS workshops together with ANSN and FNRBA members.

IAEA and ANNuR Member States cooperated on the concept and completion of the development of a Sample Manual for the Management and Conduct of the Regulatory Safety Review and Assessment Process. The manual aims to provide guidance to regulatory body staff of embarking countries on regulatory review and assessment. It will describe a sample process regarding conduct of regulatory review and assessment of the safety case documents submitted as application by the Applicant for licensing of a nuclear reactor, as well as a process for reporting the results of a regulatory evaluation.

Some other notable achievements are conceptualisation of documents for 1) Emergency Preparedness and Response (EPR) national plan model; 2) Strategy on Capacity Building of Nuclear Safety Knowledge Management

2.5.2. Outputs in 2018 - 2021

SG1: Enhanced networking

From the 9th to the 12th Annual Meetings of the Arab Network of Nuclear Regulators have been held every year in Tunisia, Hammamet. The objectives of the meetings were to follow up and review the progress of ANNuR activities in the previous year and discuss the action plan of the year.

- ANNuR Plenary, Austria, Vienna, 19 September 2018 and 17 September 2019. The two ANNuR plenary were hosted by the Arab Atomic Energy Agency, which is based in Tunisia. The meetings contribute to the network's goal of fostering enhanced, stronger and more harmonized regulatory infrastructure and frameworks in its Member States.

SG2: Strengthened IT platform

- Content (presentations, summary report, prospectus) for the ANNuR events conducted during 2018 to 2021 have been updated in the ANNuR website.

SG3: Enhanced competence

- *Consultancy Meeting for development of a Sample Manual for the Management and Conduct of the Regulatory Safety Review and Assessment Process, Austria, Vienna, 26 February – 2 March 2018.* The purpose of the event was to develop a sample manual document, which can be easily adaptable by embarking countries, providing detailed and generic guidance to regulatory body staff of embarking countries on how to manage, to get organized, and to conduct regulatory review and assessment process during the licensing of their first NPPs. Non – Staff participants 2
- *IAEA-KINS: Workshop on Siting Evaluation for Nuclear Facilities, Korea, Daejeon, 16-20 April 2018.* The purpose of this workshop was to furnish practical knowledge and information essential for assessing a site intended for nuclear facilities, focusing on factors such as the effects of natural or human-induced external events within the site region. Additionally, it aimed to delve into the characteristics of the site and its environment that might impact the transfer of released radioactive material to both people and the environment. Furthermore, the workshop considered population density, distribution, and other relevant features of the external zone, taking into account their potential influence on the implementation of emergency measures and the imperative to evaluate risks to individuals and the population. All participants 29
- *2nd Consultancy Meeting for development of a Sample Manual for the Management and Conduct of Regulatory Safety Review and Assessment Process, Austria, Vienna, 4-8 June 2018.* The purpose of the CS was to develop a "Sample Manual for the Management and Conduct of Regulatory Safety Review and Assessment Process". It was the second CS meeting for review of the second version of the manual. The manual aims to provide guidance to regulatory body staff of embarking countries on regulatory review and assessment. It will provide detailed and also generic guidance to regulatory body staff of embarking countries on how to manage, to get organized, and to conduct regulatory review and assessment process during the licensing of their first NPPs. Non – Staff participants 2
- *IAEA-KINS: Regional Network Meeting on radiation safety and emergency response, Korea, Daejeon, 25-29 June 2018.* The purpose of the meeting is to exchange and provide practical guidance on radiation safety and emergency response necessary to Member States for improving their knowledge in order to achieve the radiation safety of nuclear facilities and to prepare for protecting the public and the environment in any potential nuclear or radiological emergency. Total number of participants 21
- *Regional workshop on establishing a management system in the regulatory body, Egypt, Hurghada, 24-28 September 2018.* The purpose of the workshop is to provide information and guidance to the participants on establishment and implementation of an effective management system in the regulatory body and demonstration of strong leadership by the upper management of the regulatory body to promote safety culture in their organization. Non – Staff participants 10
- *Annual Meeting on the Safety and Licensing of Research Reactors for Arab Atomic Energy Agency (AAEA), Arab Network of Nuclear Regulators (ANNuR), Forum of Nuclear*

Regulatory Bodies in Africa (FNRBA), Ghana, Accra, 8-12 October 2018. The meeting discussed the assessment of and programmes for competence needs for regulatory bodies for research reactors, and regulatory review and assessment of safety submittals for research reactors. Total number of participants 17

- *Regional workshop on regulatory inspection programmes for Research Reactor Regulators, Morocco, Rabat 12-16 November 2018.* The purpose of the workshop was to provide practical information to enable the participating countries to enhance their capabilities for the regulatory inspections of research reactors. The workshop also provided a forum for the participants to discuss their national practices and to exchange their experience related to the subjects covered, as well as to identify good practices and areas that need improvement with regard to regulatory inspection and enforcement programme. Non – Staff participants 15
- *Agency Mission on Regulatory Inspection Programmes for Research Reactors for Arab Atomic Energy Agency (AAEA), Arab Network of Nuclear Regulators (ANNuR), Forum of Nuclear Regulatory Bodies in Africa (FNRBA). Morocco, Rabat 12-16 November 2018.* The purpose of the mission was to provide expert support for ANNuR in facilitating the ANNuR/FNRBA Workshop on Regulatory Inspection Programmes for Research Reactors. Non – Staff participants 2
- *IAEA-KINS Regional Network Meeting on Basic Professional Training Course for nuclear safety, Korea, Daejeon, 15-26 October 2018.* The purpose of the meeting is to review and provide an overview of all the safety concepts and their application to the design and operation related to nuclear power plants and research reactors, focusing on regulatory staff as well as supporting regulatory organizations of member states. Total number of participants 20
- *IAEA-KINS: Workshop on Regulatory Infrastructure for Nuclear Safety, Korea, Daejeon, 3-7 December 2018.* The purpose of the event is to review and provide the key issues and subjects concerning the development of an effective and adequate national regulatory framework and infrastructure for nuclear power plants (NPPs) in line with the relevant IAEA Safety Requirements and recommendations outlined in SSG-16. Non-Staff Participants 14
- *Agency Mission on upgrading the national infrastructure for nuclear safety and security, Tunis, Tunisia, 26-27 September 2019.* The purpose of the event is to discuss the establishment of a legal and regulatory framework on nuclear safety and security, as well as the importance of coordination and harmonization for managing the nuclear safety and security interface.
- *Regional Workshop on Safety Review and Assessment by the Regulatory Body, South Africa, Pretoria, 28 October – 1 November 2019.* The purpose of the meeting is to review and provide an overview of all the safety concepts and their application to the design and operation related to nuclear power plants and research reactors, focusing on regulatory staff as well as supporting regulatory organizations of member states. Non-Staff Participants 5

- *IAEA-KINS Workshop on Safety Review and Inspection Methodologies for Quality Assurance*, Korea, 13-17 May 2019. Total number of participants 17
- *IAEA-KINS Workshop on Safety Review and Assessment for Licensing Nuclear Power Plants*, Daejeon, Korea, 27-31 May 2019. Total number of participants 13
- *IAEA-KINS Workshop on Radiation Safety and Emergency Response in the Medical or Industrial Use of Radiation*, Daejeon, Korea, 10-14 June 2019. Total number of participants 19
- *IAEA-KINS Workshop on Safety Evaluation of Research Reactor*, Daejeon, Korea, 15-19 July 2019. Total number of participants 18
- *Virtual Workshop on Regulatory Review and Assessment and Inspection of Research Reactor*, 05-09 October 2020. The purpose of the event is to provide a forum for exchange of information and experience between the participating Member States on the review and assessment of safety submissions and regulatory inspection of research reactors. This workshop were targeted to countries which are operating research reactors in ANNuR and AFRA. Non-Staff Participants 23.
- *Workshop on Safety Analysis and Safety Documents for Research Reactors*, 8-12 March 2021, The purpose of the event is to provide the participants with a forum to discuss and share experience in performing safety analyses for research reactors, as well as in the preparation, updating and reviewing of safety documents for such facilities Total number of participants 31.
- *Regional Workshop on Self-Assessment of Regulatory Infrastructure for Safety*, 6-8 December 2021 Virtual. The purpose of the event is to enhance the participants' awareness and understanding of IAEA self-assessment of regulatory infrastructure for nuclear and radiation safety. Total number of participants 33

SG4: Harmonized capacity building

- *Consultancy Meeting to finalize the description of the case study and to prepare a guidance document for the model workshop on nuclear safety knowledge management and capacity building*, Austria, Vienna, 11-14 June 2018. The purpose of the event is to finalize the description of the case study and to prepare a guidance document for the model workshop on nuclear safety knowledge management and capacity building. Non – Staff Participants 1
- *Workshop on Nuclear Safety Capacity Building-National Nuclear Safety Knowledge programmes*, Tunisia, Tunis, 25-29 June 2018. The purpose of the event was to discuss establishing and maintaining a nuclear safety capacity building programme, including nuclear safety knowledge management programmes. The meeting covered four main

activities namely education and training, human resources development, knowledge management and knowledge networks at national and organizational level. Non – Staff Participants 6

- *Regional Workshop on Policies and Strategies for Nuclear Safety Capacity Building, 07-11 December 2020, Virtual.* The purpose of the event is to support Member States in their efforts to establish and maintain nuclear safety capacity building programmes including education and training, human resources development, knowledge management and knowledge networks. Non-Staff Participants 24.

2.5.3. Impact in Member States

Through various capacity building assistance activities, IAEA provided the participants from ANNuR Member States practical, hands-on training on respective technical areas such as inspection and licensing of research reactor, safety of industrial and medical use of radiation, etc. The activities also served the opportunity for the participants to discuss their national practices and to exchange their experience related to the subjects covered, as well as to identify good practices and areas that need improvement with regard to regulatory inspection and enforcement.

IAEA assisted ANNuR through GNSSN in adopting ANNuR Strategic Action Plan for 2016-2020 with nuclear security related objectives: establishment of national regulatory bodies; enhancing capacity to secure management of radioactive sources; secure utilization of radioactive sources.

In line with this, Djibouti and Jordan have finalised their Integrated Nuclear Security Support Plan (INSSPs) with IAEA.

2.5.4. Beneficiary countries

All ANNuR Member States: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kingdom of Saudi Arabia, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.

2.5.5. Future Project Outlook

During the ANNuR Plenary conducted on the side-lines of 62nd IAEA General Conference in 2018, IAEA recommended ANNuR to consider formulating a Regional Regulatory Infrastructure Development Project (RIDP) on nuclear security in close cooperation with IAEA. For this a practical arrangement between IAEA-NS and ANNuR would be necessary, which would facilitate better planning of the joint activities and enhancing implementation of human resource development programme.

ANNuR members have been continuing to assess the needs of each Arab regulatory authority and to share knowledge and practical experience among Arab regulators to address the importance of capacity building and to facilitate sustainable regional co-operation. The Arab programme for training Radiation Protection Officers (RPO) was approved at the ANNuR annual meeting and an Arab certificate for radiation safety and protection has been developed. Based on the MSs needs and the postponed activities from 2020 and 2021, ANNuR drafted a plan for 2022. The co-operations with IAEA and other international partners such as USNRC, KINS are envisaged in that plan.

2.6. CAPACITY BUILDING (CB)

2.6.1. Summary of Progress and Outcomes

Increased use of the Agency methodology for capacity building and guidance by Member States and in the implementation of national and organizational capacity building programmes as a result of the Agency support

This project aims to further develop and strengthen the Global Nuclear Safety and Security Network (GNSSN) and regional networks by facilitating nuclear safety knowledge management and support capacity building in Member States.

As highlighted in different Nuclear Safety Reviews and International Conferences, most of the IAEA Member States face different challenges in developing an adequate safety infrastructure consistent with the IAEA safety standards. These challenges are mostly related to competence management and ensuring the necessary capabilities to operate nuclear and radiation facilities and activities in a safe manner. With this regard, education and training, human resource development, knowledge management and networking are key activities that contribute to strengthening existing national programmes and could be considered as key elements for the resilience of national safety infrastructure.

Moreover, capacity building, knowledge management, knowledge networks (GNSSN) and international cooperation are the cornerstone of the global nuclear safety and security framework as highlighted in the IAEA report on capacity building, published as part of the lessons learned from the Fukushima Daiichi nuclear power plant accident. The sub-programme is a continuation, follow-up and consolidation of relevant activities addressing capacity building and knowledge management and provides methodologies and tools as well as services to support Member States enhance their arrangements for ensuring and continuously improve competences and capabilities necessary for achieving safe national programmes. These services are based on lessons learned and conclusions drawn from the IAEA Action Plan on nuclear Safety, the report on the Fukushima Daiichi accident, Safety Requirements, feedback on services and publications related to capacity building and knowledge management.

2.6.2. Outputs in 2018-2021

SG1: Enhanced networking

Capacity building for safety, including self-assessment at governmental and organizational levels; Integrated Capacity Building Plan; Learning Management System, nuclear safety knowledge bases; national nuclear safety knowledge platforms; international conferences and senior level meetings.

Under this project, activities were implemented grouped under subprojects:

- Project 1: Strengthening nuclear safety capacity building including knowledge management and human resources planning in Member States
- Project 2: The Global Education and Training Resource (GETR)
- Project 3: Enhancing Member States Capabilities in Safety and Security Communication and Consultation with Interested Parties (GNSSCOM)
- Project 4: Enhancing Nuclear Safety and Security Infrastructure under the Global Nuclear Safety and Security Network (GNSSN)
- Project 5: master's degree on Nuclear Safety and Security

- Consultancy Meeting on the preparation of the Third International Conference on Human Resource Development for Nuclear Power Programmes: Meeting Challenges to Ensure the Future Nuclear Workforce Capability. Austria, Vienna. 20-22 February 2018. The purpose of this event is to finalize the agenda and paper selection for the Third International Conference on Human Resource Development for Nuclear Power Programmes: Meeting Challenges to Ensure the Future Nuclear Workforce Capability. Non – Staff Participants 12

SG3: Enhanced competence

- Consultancy Meeting on the Review of the Capacity Building Methodology. Austria, Vienna. 19 – 23 March 2018. The purpose of the event is to review the capacity building methodology and ensure cross references to safety guides on establishing radiation and nuclear safety infrastructure. Non – Staff Participants 2
- Technical Meeting on the Safety and Security Interface - Approaches and National Experiences. Austria, Vienna. 29 October – 01 November 2018. The purpose of the event is to identify technical elements of the safety security interface. Non – Staff participant 3
- Consultancy contracts to finalize the draft IAEA Safety Report on Knowledge Management for Regulatory Body and Technical Support Organizations, two experts. Home based assignment. 21st February 2018. The purpose of this assignment was to finalize the draft IAEA Safety Report on Knowledge Management for Regulatory Body and Technical Support Organizations based on a detailed comparison exercise with the draft IAEA TECDOC on Managing Nuclear Safety Knowledge. Experts 2

- Meeting with the Radiation Protection Board on Capacity Building. Kenya, Nairobi. 02 – 03 October 2018. The purpose of the meeting was to follow up of the meeting which took place in April 2016 and a reply action to the request of the Radiation Protection Board on Capacity Building. Staff travel only.

SG4: Harmonized capacity building

- Consultancy Meeting on Reviewing the Draft Safety Reports on Nuclear Safety Knowledge Management. Austria, Vienna. 16 – 20 April 2018. The purpose of the event is to finalize and review both draft safety reports: Knowledge management for regulators and managing nuclear safety knowledge: national experiences and approaches. Non – Staff participants 1
- Consultancy Meeting on Developing Indicators and Guidance on their use for Regulatory Capacity Building. Austria, Vienna. 16 November 2018. The purpose of the meeting was to prepare a presentation on the draft publication Considerations for Assessment of Capacity Building in Nuclear Safety and review information provided in preparation for the Consultancy meeting to develop an indicator set and guidance on their use for regulatory capacity building. Consultancy meeting to develop an indicator set and guidance on their use for regulatory capacity building in the VIC. The purpose of the meeting is to develop an indicator set and guidance on their use for regulatory capacity building at the corporate, national, regional, and global levels to measure progress, effectiveness, implementation rate, output and outcome. Experts 1

During the reporting period, further development, and review of the self-assessment methodology for capacity building of nuclear, radiation, transport, waste safety and EPR was carried on.

Initial draft of the master's degree curriculum for nuclear safety and security has been compiled by experts from IAEA Member States since 2019. Currently an internal review of this curriculum is initiated within the technical divisions of the IAEA, which would be further followed up by an external review through independent experts in 2022.

Altogether, 36 activities were conducted across the various regional and thematic networks of GNSSN in 2021, which facilitates building capacities and competences in topics pertinent to nuclear safety and security across IAEA Member States. In 2021, through a series of Webinars, the application of IAEA Safety Standards and scope of IAEA peer review and advisory services was further promoted.

GNSSN continued with its focus on capacity building, nuclear safety knowledge management and international cooperation with the conduct of 36 activities in a virtual format in 2021. The newly formulated GNSSN SC has drafted the GNSSN Strategic Plan covering period 2021-2025. The GNSSN Steering Committee has emphasized on further cooperation and collaboration among the regional and thematic networks to share experiences, lessons learned and best practices among the networks. Several discussions to identify synergies and common needs were conducted. Following publication – SRS-105: Managing Nuclear Safety

Knowledge: National Approaches and Experiences was published in 2021, with the objective to provide practical guidance and information to Member States on how to manage nuclear safety knowledge at the national level. Based on SRS-105, a self-assessment methodology has been developed to further assist Member States to strengthen national nuclear safety knowledge management programmes. Furthermore, scope of services such as self-assessment for TSOs was enhanced to accommodate radiation safety and monitoring. Within the EuCAS regional network, series of 3 Webinars were conducted to promote the application of IAEA Safety Standards and to promote IAEA peer review and advisory services, namely IRRS and ARTEMIS missions. Furthermore, under the GNSSCOM thematic network, series of 6 Webinars were conducted with an objective to improve communication effectiveness, consultation and interaction between interested parties and building trust in the nuclear and radiation safety and security during normal operations.

The public interface of the GNSSN website has been restructured to facilitate knowledge sharing, promotion of activities pertinent to nuclear safety and security as well as relevant IAEA vacancy notices. Additionally, new IT collaboration spaces for some new initiatives such as network of academic educators and practical trainers in the areas of EPR (iNET-EPR) and for the External Events Safety Section were also created under the GNSSN website. It was discussed and agreed to further restructure the protected area of the GNSSN IT platform to facilitate information sharing in a more structured manner.

Due to COVID-19 pandemic, some activities planned for 2021 have been postponed and will be implemented in 2022.

2.6.3. Impact in Member States

Increased use of the Agency methodology for capacity building and guidance by Member States and in the implementation of national and organizational capacity building programmes as a result of the Agency support

- To support Member States in their application of capacity building strategies and programmes through the promotion of the Agency methodology, guidance and tools, their implementation in national safety and security infrastructure programmes.
- To enhance the Agency's data, information, resources and services to support and guide Member States in applying nuclear safety and security knowledge management programmes, strategies and tools addressing all their radiation and nuclear facilities and activities.
- To support the Agency Global Nuclear Safety and Security Network and knowledge networks by establishing and maintaining a strong strategic, financial and technical partnerships.

2.6.4. Beneficiary Countries

The following countries benefited as their nationals joined the CB activities as non-staff participants. This does not include nationals hired as experts for CB activities: France, Germany, Iran, Republic of Korea, Russian Federation, United Kingdom

2.6.5. Future Project Outlook

Since the DPP for the TECDOC on self-assessment methodology for Capacity Building has already been approved, it is important that the methodology is finalised in the near term. Post this, support can be provided to official requests received from BNRA (Bulgaria), AMSSNuR (Morocco) and FANR (UAE) to develop their capacity building programmes in line with this methodology.

The GNSSN Steering Committee is strongly emphasizing on enhancing further cooperation and coordination among the regional and thematic networks by analysing the common needs across the regional networks and conceptualising projects/activities based on these needs. It should also be considered to assess the effectiveness of various capacity building activities conducted across regional networks through a systematic approach to collect feedback.

2.7. EUROPEAN AND CENTRAL ASIAN SAFETY NETWORK (EUCAS)

2.7.1. Summary of Progress and Outcomes

The COVID-19 pandemic forced EuCAS network to modify the planned activities and explore the possibility to implement planned activities using virtual meetings, when possible. Nevertheless, EuCAS network was able to keep the momentum. The virtual meetings were used for networking and representative from the member states and the IAEA TSOF contributed to this dialogue. Most important issue was to exchange of the information on the impact of COVID-19 on the regulatory activity among the members.

Three Steering Committee (SC) meetings were held to follow the work and plan further actions. The Terms of Reference were updated for each working group. The suggestion to establish a 5th working group on Emergency Preparedness and Response is still under consideration.

Three webinars were successfully held. In addition, it was proposed that similar activities could be organised and implemented jointly with other networks in virtual manner.

2.7.2. Outputs in 2018-2021

2.7.2.1. Virtual 5th Steering Committee meeting, 24-25 August 2020

The 5th meeting of the Steering Committee (SC) of the European and Central Asian Safety Network (EuCAS) was virtually held 24-25 August 2020 and gathered 19 participants from 16

Member States (MS) and from partner organizations. In addition, 4 experts from the Agency participated.

During the meeting DOE/NNSA, USA presented the overview of International Nuclear Safeguards Engagement Program (INSEP), which works with countries to fulfil their IAEA safeguards obligations through bilateral and regional collaboration. The presentation was mainly focused on introducing what kind of support is provided and could be applied within EuCAS. INSEP was presented as not just a training programme, it covers all aspects of safeguards implementation and assists the partners in accordance with their specific needs, along with a possibility of its funding. INSEP can work with EuCAS countries and provide programme in their own national languages as well as in English to effectively share knowledge and experiences in safeguards implementation. So far safeguard was not included in the working program of EuCAS, but it could be introduced if there is an interest among the member countries.

The planned activities for 2020 of each WG was discussed again and adjusted respectively:

2.7.2.2. Virtual 6th Steering Committee meeting, 23-24 November 2020

The 6th meeting of the Steering Committee (SC) of the European and Central Asian Safety Network (EuCAS) was held virtually on 23-24 November 2020 and gathered 25 participants from 17 Member States (MS) and from partner organizations. In addition, 4 experts and the Secretariats from the Agency participated. Main topics were, drafting WG ToRs, TSO forum, mapping matrix and plans for the future events, IAEA WS-G-3.1.

All participants shared information about the COVID-19 situation in each country and its implications on the functions of the regulatory body.

The ToRs of each working group were discussed and was agreed to be improved and hopefully approved during the next SC meeting. Several comments were given to the ToR for WG3, which have some relevance to other working groups and could be a great value during revision of ToR for other groups. The review of ToR for WG3 shows that - even if EuCAS activities overlap with the ones of thematic forums, such as COMDEC, RSLs, CGULS, and ENVIRONET – this is not the duplication because EuCAS refers and works on a regional level. Its focus is to maintain networking and help each other as well to share information from other existing forums.

It was agreed that each WG shall held separately a virtual meeting in the first quarter of 2021, to elaborate the current draft ToR before next Steering Committee meeting. The meetings will be chaired by coordinator of each WG, who is responsible for organization of the meeting together with the IAEA Secretariat.

The invited presentation about the Technical and Scientific Support Organization Forum (TSOF) and its activities and possible cooperation with EuCAS members were presented by the TSOF vice chair Ms. Carla Eibl-Schwaeger and discussed.

The IA EA TECDOC-1835 (*Technical and Scientific Support Organizations Providing Support to Regulatory Functions*) introduces the main objectives and scope of TSOF. The general principles are the provision of technical and scientific support to a regulatory body. The Self-Assessment Tool (TOSCA) was also briefly explained and can be easily used to support in development and enhancement of TSO capabilities.

This presentation was highlighting the challenges with the establishing of a TSO. This introduction was very useful for WG1, which plans to have workshop on that topic.

Finally, the working program for 2021-2022 was discussed.

2.7.3. Virtual 7th Steering Committee meeting 7-8 July 2021

The 7th meeting of the Steering Committee (SC) of the European and Central Asia Safety Network (EuCAS) was virtually held 7-8 July 2021 and gathered 25 participants from 17 Member States (MS) and from partner organizations. In addition, 4 experts and the Secretariats from the Agency participated.

Due to COVID-19 pandemic and national restrictions scheduled events in person were postponed several times and again were planned to be held in a virtual manner. Workplan for the next period has been revised and take into consideration all peculiarities of the current situation. The possibility of webinars in close cooperation with the IAEA Technical Officers were discussed and should be assessed. More attention should be put on enhancing cooperation with other networks to contribute effectively and efficiently to sharing of knowledge, experiences, and expertise e. g. the Technical and Scientific Support Organization Forum (TSOF) or other thematic networks. One of important issues for EuCAS is to seek active collaboration with Global Nuclear Safety and Security Network (GNSSN) and other similar regional networks to learn and gain experience from their experience.

US NRC from the beginning has been supporting the EuCAS network and this time presented possibilities for assistance in regulatory development through different courses. Different parallel activities were mentioned in Central Asia, which were supported by US NRC regarding radioactive sources and security as example.

Working program update for 2021

- Potential set of webinars about IRRS or/and with focus on the basic regulatory infrastructure, safety guides or other (lectures, training) were suggested and agreed to organised. Materials for such workshop are available at IAEA.

- Other ideas for webinars were suggested from WG2 and WG3 related to ARTEMIS mission, decommissioning and remediation, and presentations of new safety guides (e. g. Leadership Management and Culture for Safety in Radioactive Waste Management).
- Webinar on Strategic Master Plan (SMP) for remediation in Central Asia to raise awareness for challenges for regulatory body.
- Virtual meetings for each working group to work on ToR.

2.7.3.1. Virtual Consultancy Meeting 7-8 December 2021

The consultancy meeting on Harmonization of the Terms of References for the European and Central Asian Safety Network (EuCAS) was virtually held 7-8 December 2021 and gathered the coordinators from the working groups, technical experts, and the Secretariat from the Agency.

After discussion on the Term of References of each working group it was agreed that the text could be mostly identical for all working groups except for the chapters on Scope, Strategy and Objective, which are specific for each working group. Updates were introduced in those chapters and agreed among the participants and should be reviewed separately by each working group.

2.7.3.2. Webinar: An Introduction to new IAEA Safety Standards (GSG8, GSG9 and GSG 10), 9th November 2021

The presentations were given by IAEA technical officers to introduce the three safety guides GSG-8, GSG-9 and GSG-10 related to the protection of public and environment. The presentation included a small quiz and discussion of questions from the participants. All presentations are available on the EuCAS website.

2.7.3.3. Webinar: An Introduction to Integrated Regulatory Review Service (IRRS) Missions, 16th November 2021

The introductory presentation was given by IAEA about the process and objectives for IRRS missions. Further presentations were given on the experience from countries who had already IRRS missions. These were Germany, Norway, Romania, and Slovakia. In addition, Bosnia and Herzegovina presented their expectation on a planned IRRS mission. All presentations are available on the EuCAS website.

2.7.3.4. Webinar: An Introduction to Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) Missions, 30th November 2021

The introductory presentation was given by IAEA about ARTEMIS objectives and scope. Further presentations were given from Germany and Latvia about the experience and lessons

learned and from Slovenia about their experience of preparing for the mission and expectations. All presentations are available on the EuCAS website.

2.7.3.5. GNSSN: Panel discussion during the 65th GC of the IAEA

EuCAS actively participated in a panel discussion organised by GNSSN on networking during the pandemic.

2.7.3.6. GNSSN: 17th SC meeting

EuCAS actively participated with a presentation on its activities and in the discussion how to enhance the exchange among the regional networks.

2.7.4. Impact in Member States

Most important impact was that the momentum of the network is kept and the relationship between the regulatory bodies within the member states is maintained.

2.7.5. Beneficiary Countries

Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Lithuania, Republic of Moldova, Romania, Serbia, Slovakia, Tajikistan.

2.7.6. Future Project Outlook

No.	Activity	Date	Status
1	8 th Steering Committee meeting	January 2022 Virtual	Approval of changes to the ToR of EuCAS;
2	Approval of new member - Estonia	January 2022 Virtual	Estonia applied for membership in December 2021 and became a new member of EuCAS
3	Annual Report 2020-21 EuCAS	January 2022 Virtual	Report sent to all members before the meeting
4	Discussion on the Term of References of each working group and final agreement	January 2022	The draft of ToR for each WG was send to coordinators for discussion in groups
5	WG 1 workshop on “Technical and Scientific Support	2nd half 2022 / 2023	Discuss

	Organizations (TSO) Providing Support to Regulatory Bodies: Challenges with their Establishment and Operation”		
6	WG 2 Workshop on “The Regulation and Management of Existing Facilities for the Predisposal of Radioactive Waste”	July/August 2022	Discuss
7	WG 3 Workshop on “Regulatory system for remediation and decommissioning”	2022 Virtual/Tajikistan	Discuss
8	WG 4 Workshop on review and assessment based on the results of new questionnaire	2022 either virtually or in-person.	Discuss
9	Webinars on the safety guides and other topics (lectures, training)	March – October 2022 Virtual	Suggested to focus on GSG-15 and -16, discuss and agreed with SC and WGs. Materials available at IAEA.
11	Cooperation with existing networks (WENRA and other relevant networks, IAEA), investigation for possible invitation for the EuCAS events	2022	Action to EuCAS SC members plus IAEA to have dialog with WENRA and maybe other regional networks. Action to IAEA TO and GNSSN PMO

2.8. FORUM OF NUCLEAR REGULATORY BODIES IN AFRICA (FNRBA)

2.8.1. Summary of Progress and Outcomes

FNRBA has been officially recognized by its Member States as a regional network. The revised Charter in 2018 was approved by the 9th Plenary of FNRBA in September 2017 and 21 Member States endorsed it. FNRBA also compiled its workplan for 2019-2021, which addresses major challenges in FNRBA member states related to lack of regulatory standards, lack of promotion of use of Model Regulations and standards, lack of technical support to regulatory bodies, dispersed expertise in Africa, availability of transport experts in Africa, inadequate expertise in nuclear security, etc.

Extension of the Practical Arrangement between FNRBA and IAEA was signed on November 24th in Vienna, for a period of three-year term from 2021-2024. This PA aims to confirm the result-oriented cooperation with IAEA to enhance and improve the status of the national nuclear safety and security regulatory infrastructure in FNRBA Member States. Especially, it contained few amendments to reflect the African region's needs of further cooperation and coordination between regional related networks such as African Commission on Nuclear Energy (AFCONE), the African Regional Cooperative Agreement (AFRA)

During 2018 to 2021, FNRBA implemented 14 activities to address the importance and urgency of capacity building at governmental, institutional, organizational and individual levels. The activities are intended to strengthen relations among the FNRBA member states and to identify concrete actions to address current and future needs, to assist States in establishing and/or improving their regulatory infrastructure through effective and efficient capacity building, including education and training. In addition, ANNuR members participated in seven Joint IAEA-KINS workshops together with ANSN and ANNuR members.

2.8.2. Outputs in 2018-2021

SG1: Enhanced networking

- *Steering Committee of the Forum of Nuclear Regulatory Bodies in Africa. From the 13th to 16th meetings were held respectively in South Africa, Austria, and Virtually. The purpose of the Steering Committee Meeting is to consider the results of the priority ranking of the Forum of Nuclear Regulatory Bodies in Africa (FNRBA) project proposals and discuss these with the participating FNRBA partners as well as the review the achievement of the year's activities.*
- *FNRBA Plenary. From 10th to 13th meetings were held in Austria, Vienna. The FNRBA plenary shares the Form's recent achievements in enhancing nuclear and radiation safety in Africa and adopts a strategic action plan for the upcoming year.*
- *Annual Meeting on the Safety and Licensing of Research Reactors for Arab Atomic Energy Agency (AAEA), Arab Network of Nuclear Regulators (ANNuR), and Forum of Nuclear Regulatory Bodies in Africa (FNRBA), Ghana, Accra, 8-12 October 2018 The purpose of the meeting was to discuss the assessment of and programmes for competence needs for regulatory bodies, for research reactors, and regulatory review and assessment of safety submittals for research reactors.*

SG2: Strengthened IT platform

- "Collaborative Assistance Platform" for capturing and serving needs/requests of FNRBA member states was conceptualised. Detailed procedures/workflow for this collaboration platform were drafted. Prototype of this platform was open to FNRBA members for their review. Implementation of online survey to collect project ideas priorities among FNRBA members was completed in 2018. Based on this, a list of top project priority was proposed by the 13th Steering Committee held in May in Pretoria.

- FNRBA Website: create a platform to connect people and facilitate the exchange of information, enhance transparency, strengthen effective partnerships and enhance networking and to provide access to tools, materials, resources and knowledge databases with the goal to enhance communication, relationships and build public trust in a harmonized matter.
- The current wireframe of the FNRBA website, is built on the GNSSN IT platform.

SG3: Enhanced competence

- *Workshop on Fundamentals of Reactor Siting Safety, Environmental, and Emergency Planning, Austria, Vienna, 15-19 January 2018* The purpose of the workshop is to share siting knowledge and skills with the representatives of the Regulatory Bodies of countries actively pursuing nuclear power programmes now or intending to do so in the near future. Non – Staff Participants 11.
- *IAEA-KINS International Workshop on Siting Evaluation for Nuclear Facilities, Daejeon, Korea, April 2018* This workshop is intended to provide the practical knowledge and information necessary to evaluate a site for nuclear facilities with respect to: 1) The effects of natural or human induced external events occurring in the site region; 2) Characteristics of the site and its environment that could influence the transfer of released radioactive material to people and the environment; 3) The population density and population distribution and other characteristics of the external zone in so far as they may affect the possibility of implementing emergency measures and the need to evaluate the risks to individuals and the population.
- *IAEA-KINS Regional Workshop on Radiation Safety and Emergency and Response, 25-29 June 2018, Daejeon, Korea* This workshop focussed on supporting the embarking countries of nuclear power programme, this workshop is intended to provide practical guidance on the above mentioned topics, necessary to Member States for improving their knowledge in order to achieve the radiation safety of nuclear facilities and to prepare for protecting the public and the environment in any potential nuclear or radiological emergency.
- *IAEA-KINS Regional Network Meeting Basic Professional Training Course - Nuclear Safety, 15-26 October 2018, Daejeon, Korea* The meeting was intended to review and provide a broad overview of all the safety concepts and their application to nuclear power plants and research reactors. Its nature and scope are primarily oriented to junior professionals in nuclear safety-related activities, but also appropriate for the trainers who want to teach their staff and the specialized professionals who want to expand their view on nuclear safety.
- *Regional workshop on regulatory inspection programmes for Research Reactor Regulators, Morocco, Rabat, 12-16 November 2018* The objective of the workshop was

to provide practical information to enable the participating countries to enhance their capabilities for the regulatory inspections of research reactors. The workshop also provided a forum for the participants to discuss their national practices and to exchange their experience related to the subjects covered, as well as to identify good practices and areas that need improvement with regard to their regulatory inspection and enforcement programme.

- *IAEA-KINS Workshop on Safety Review and Inspection Methodologies for Quality Assurance*, Korea, 13-17 May 2019. Non-Staff Participants 17
- *IAEA-KINS Workshop on Safety Review and Assessment for Licensing Nuclear Power Plants*, Daejeon, Korea, 27-31 May 2019. Non-Staff Participants 13
- *IAEA-KINS Workshop on Radiation Safety and Emergency Response in the Medical or Industrial Use of Radiation*, Daejeon, Korea, 10-14 June 2019. Non-Staff Participants 19
- *IAEA-KINS Workshop on Safety Evaluation of Research Reactor*, Daejeon, Korea, 15-19 July 2019. Non-Staff Participants 18
- *Regional Workshop on the Development of National Policies and Strategies for Radioactive Waste Management*, virtual, 4-8 October 2021. The purpose of the event is to exchange experiences and assist the participating States in developing and establishing national policies and strategies for radioactive waste management, and to review the status of any existing policies and strategies for radioactive waste management in the participating States. 24 Non-Staff Participants.
- *Regional Workshop on Regulatory Review, Assessment and Licensing of Research Reactors*, virtual, 1-5 November 2021. The purpose of the event is to exchange experiences and assist the participating States in developing and establishing national policies and strategies for radioactive waste management, and to review the status of any existing policies and strategies for radioactive waste management in the participating States. 11 Non-Staff Participants.
- *Training Course on the Development of Regulatory Requirements for Radioactive Waste*, virtual, 6-10 December 2021. The purpose of the event is to enhance the knowledge of the participants to support the development and review of regulatory requirements for radioactive waste. 40 Non-Staff Participants.

2.8.3. Impact in Member States

- 6 categories of Direct Impact Target (DIT) for proposed activities have been identified and reflected in the FNRBA Contribution Report:
 - Development of individual skills and competences

- Development of regulatory support documentation
- Implementation of peer review missions at regional level
- Implementation of survey and needs assessment
- Development of database
- Awareness of policy makers (through outreach material or dedicated workshop)

Within the activities identified: half of them is related to the development of skills and knowledge, 10% are dedicated to the development of regulatory support documentation such as model regulations and guides, and the rest are related to experience sharing and development of a regional database.

A) Enhanced governance of FNRBA.

B) Raise the awareness of policymakers in Africa

2.8.4. Beneficiary countries

All FNRBA Member States: Angola, Benin, Burkina Faso, Botswana, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Gabon, Ghana, Kenya, Madagascar, Mali, Malawi, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Seychelles, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe.

2.8.5. Future Project Outlook

FNRBA workplan for 2019-2021 has been compiled. Several activities across the FNRBA thematic working groups have been proposed, which are reflected in Section 2 of the FNRBA Contribution Report.

FNRBA will work closely with the IAEA Secretariat and donors to implement this workplan. FNRBA also envisages collaboration across the following lines in order to achieve its objectives:

- Bilateral collaboration inside Africa
- Sub-regional collaboration (within the 5 sub-regions of FNRBA, for instance transport or inspection)
- Africa continent collaboration (FNRBA wide, for instance on Emergency Preparedness and Response (EPR))
- Inter-regional collaboration (ANNuR, ANSN, FORO, including on EPR...)
- Multilateral collaboration African Union (AU), IAEA, European Union (EU), Regulatory Cooperation Forum (RCF), Technical and Scientific Support Organization Forum (TSOF)

2.9. GLOBAL NUCLEAR SAFETY AND SECURITY COMMUNICATIONS (GNSSCOM) –

2.9.1. Summary of Progress and Outcomes

The Global Nuclear Safety and Security Communication Network (GNSSCOM) was established in 2016 by the IAEA as a mechanism to support Member States in communication during routine operations (e.g., non-emergency situations). GNSSCOM encourages and supports Member State communication officers from regulatory bodies, technical support organizations, and other relevant organizations, to connect and collaborate in order to improve communication effectiveness and build public trust.

The main objectives of GNSSCOM include:

- Sharing knowledge, expertise, lessons learned, and best practices in communication;
- Promoting capacity building in communications through networking activities;
- Developing, implementing, and evaluating strategies and processes for effective communication and consultation with stakeholders;
- Providing access to communication professionals, tools, materials, resources, knowledge databases, and publications to further enhance competence in communications; and
- Dialoguing to establish close working relationships and work on communication related issues.

Currently, GNSSCOM is led by a Steering Committee that provides guidance on the development and sustainability of the network's activities, in line with its Terms of Reference, and helps ensure the GNSSCOM webpage is supporting Member States' needs.

2.9.2. Outputs in 2018-2021

SG1: Enhanced networking

- Second Global Nuclear Safety and Security Communication Network Steering Committee Meeting (GNSSCOM), Austria, Vienna, 18 – 19 December 2018. The purpose of the Steering Committee Meeting was to i) finalize and approve the 2019 work-plan and identify strategic directives for the network, ii) to discuss administrative and technical arrangements for the network, and iii) and advise the secretariat on services needed for enhancing Member States capabilities in communication. Total number of participants 4
- 3rd Global Nuclear Safety and Security Communication Network Steering Committee Meeting (GNSSCOM), Austria, Vienna, 1-2 July 2019. The purpose of the Steering Committee meeting was to review the achievements of GNSSCOM activities, to establish the 2020 work-plan and to identify strategic directives for the network based

on the: Strategic plan, Questionnaire, Revision of the Terms of Reference, Communication Corner. Total number of participants 8

- Fourth Global Nuclear Safety and Security Communication Network Steering Committee Meeting (GNSSCOM), 14-15 December 2020-virtual. During Steering Committee meeting, was defined and approved the GNSSCOM annual plan, was meticulous with the proposed webinar series and with the development of the communicators corner on the GNSSCOM website. Steering Committee Members have highlighted that most activities have been postponed in 2020 cause of the Covid-19 pandemic. Total number of participants 8
- 5th Global Nuclear Safety and Security Communication Network Steering Committee Meeting (GNSSCOM), 13-14 October 2021-virtual. The purpose of the Steering Committee Meeting was to approve the 2022 work-plan and identify strategic directives for the network, to discuss administrative and technical arrangements for the network and advise the secretariat on services needed for enhancing Member States capabilities in communication. Total number of participants 10

SG2: Strengthened IT platform

GNSSCOM Website: create a platform to connect people and facilitate the exchange of information, enhance transparency, strengthen effective partnerships and enhance networking and to provide access to tools, materials, resources and knowledge databases with the goal to enhance communication, relationships and build public trust in a harmonized matter.

The current wireframe of the GNSSCOM website, is built within the GNSSN IT platform.

SG3: Enhanced competence

With a view to strengthening GNSSCOM by creating an informed and data-driven approach to Member States' needs, the IAEA conducted a survey in 2020, which was sent to all Member States and regulators to elicit their feedback and insights.

The purpose of the survey “***Communication & Consultation with Interested parties by the Regulatory Body,***” was to identify gaps, highlight good practices and to develop an assistance support programme to enhance the communication capabilities among and between regulators, and interested parties in this specialized field of nuclear safety and security.

The six topics covered in the GNSSCOM webinar series, are based on key recommendations identified in survey results, reflecting needs of Member States' to advance their awareness, aptitude and support for working with interested parties.

The series adopts a ‘how-to approach’ in equipping regulators with identified tools, best practice examples, and lessons learned from around the world. Topics include mapping interested parties, developing communication plans, utilizing communication channels, building trust, monitoring and evaluating communication programmes.

Part 1 – Webinar on Mapping Interested Parties for Regulators 1st March 2021 Virtual

This webinar adopts a ‘how-to approach’ in equipping regulators with identified tools and best practice examples in mapping interested parties. The IAEA will provide a brief overview of the webinar topic, which will be followed by Member States presenting their respective national case study assessment. Non – Staff Participants 138

Part 2 – Webinar on Developing Communication Plans 7th April 2021 Virtual

This webinar adopts a ‘how-to approach’ in equipping regulators with identified tools and best practice examples in developing communication plans. The IAEA will provide an overview of the topic, which will be followed by Member States presenting their respective national case studies. Non – Staff Participants 84

Part 3 – Webinar on Utilizing Communication Channels 5 May 2021 Virtual

This webinar will look at how to identify and utilize communication channels as a mechanism for strategically engaging with and informing interested parties. Total number of participants 80

Part 4 – Webinar on Building Trust 9 June 2021 Virtual

This webinar will look at how to build, grow, and sustain trust through effective communication and consultation with interested parties. Total number of participants 80

Part 5 – Webinar on Monitoring and Evaluating Communication Programmes 7 July 2021 Virtual

This webinar will look at how to evaluate communication processes and activities with interested parties and how to monitor progress and results. Total number of participants 11

Part 6 – Webinar on Undertaking Communication Campaigns 6 September 2021 Virtual

This webinar looked at how to undertake innovative, cost-effective information gathering efforts and communication campaigns, that account for limited resources and personnel. Total number of participants 50

SG4: Harmonized capacity building

Consultancy Meeting on development of the eLearning Materials for communication based on GSG-6, Austria, Vienna, 12 – 16 November 2018. The purpose of the event is 1) to review the existing set of exemplary materials for embarking countries, 2) to determine of how it can be used for preparing new materials for all kind of regulatory bodies, and 3) to prepare exemplary materials, including presentations and case studies. Experts 3

2.9.3. Impact in Member States

GNSSCOM undertaking webinars with global stakeholders and experts, with the goal of improving and informing Member States' capacity to communicate with interested parties. More than 300 participants from 66 Member States attended six webinars, which illustrates an interest in improving communication skills.

2.9.4. Beneficiary Countries

Armenia, Brazil, Canada, France, Japan, Malaysia, Morocco, Russian Federation, Norway, South Africa, Spain, United States, United Kingdom.

Webinars series:

Argentina, Armenia, Austria, Belgium, Bulgaria, Canada, Cameroon, Congo, France, Germany, Ghana, Greece, Indonesia, Ivory Coast, Japan, Jordan, Lebanon, Lithuania, Madagascar, Malaysia, Malawi, Mauritania, Mexico, Morocco, Myanmar, Nigeria, Netherlands, Peru, Poland, Portugal, Romania, Qatar, Oman, Saudi Arabia, Senegal, Sierra Leone, Slovakia, South Africa, Sudan, Tajikistan, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uzbekistan

2.9.5. Future Project Outlook

GNSSCOM's overall objective should continue to be to build public trust in the nuclear and radiation safety and security field.

To further this objective and based on the results above, virtual workshops could be developed and conducted by region (accounting for the differences in time zones etc. as an effort to increase participation in certain regions) with a focus on practical application of developing communication plans (including their many component parts) and monitoring & evaluating communication programmes, while incorporating interactive content and polls throughout.

Future work will include an updated ToR and a workplan as endorsed by SC members.

2.10. GLOBAL NUCLEAR SAFETY AND SECURITY NETWORK (GNSSN)

2.10.1. Summary of Progress and Outcomes

Throughout the tumultuous period of 2018-2021, the Global Nuclear Safety and Security Network (GNSSN) demonstrated resilience in advancing its mission amidst the challenges posed by the COVID-19 pandemic. Striving for nuclear safety and security, GNSSN made notable progress in connecting Member States globally, fostering open communication of knowledge and expertise, and actively engaging in collaborative capacity building efforts. The network's adaptability was evident in its effective utilization of the GNSSN platform, allowing Member States to share vital information and strengthen their nuclear safety and security infrastructures. GNSSN's commitment to networking dynamics not only promoted professional growth but also contributed significantly to navigating the complexities of the pandemic while advancing the overarching goals of global nuclear safety and security.

2.10.2. Outputs in 2018-2021

SG1: Enhanced networking

- Consultancy Meeting on Cooperation with Gesellschaft für Anlagen- und Reaktorsicherheit (GRS), Austria, Vienna, 22-23-Feb. The purpose of the event is to discuss the content, structure and participants of the planned Global Education and Training Resource (GETR) workshop in Germany, the activities (workshops or TM`S) in the frame of the national nuclear safety knowledge platforms in 2018 and the activities regarding and support by GRS for the regional networks. All participants 2.

- 12th Meeting of the Steering Committee of the Global Nuclear Safety and Security Network (GNSSN). Austria, Vienna. 16 – 17 April 2018. The purpose of the meeting is to discuss the findings of the ad-hoc working group on the nuclear safety and security interface, report on the implementation of the 11th Steering Committee of the Global Nuclear Safety and Security Network (GNSSN) recommendations with regard to the legal instruments and discuss and approve the agenda of the GNSSN plenary meeting. Total number of participants 4

- Third International Conference on Human Resource Development for Nuclear Power Programmes: Meeting Challenges to Ensure the Future Nuclear Workforce Capability, Republic of Korea, Gyeongju-si, 28-31-May 2018. The purpose of the conference is to review developments in the global situation relating to human resource development since the 2014 conference, and to provide participants practical solutions that they can use at organizational, national, and international levels to develop and maintain the human resources needed to support the safe and sustainable nuclear power programmes. Total number of participants 71

- Consultancy Meeting on the Safety and Security Interface, Austria, Vienna, 13-14-Jun 2018. The purpose of the event is to provide a comprehensive overview of the activities implemented to support addressing the interface and to discuss and develop an approach to enhance the Secretariat's support to Member States through the governing bodies of the IAEA on how the interface between safety and security is addressed. This is in line with the IAEA General Conference resolutions GC(61)/RES/8 operative paragraph 9 and GC(61)/RES/9 operative paragraph 13 that requests the Secretariat, while recognizing the distinction between nuclear safety and nuclear security, to continue facilitating in close cooperation with Member States a coordination process to address their interfaces in a timely manner and to develop safety and security publications, ensure consistency and to foster culture accordingly. Total number of participants 5
- 13th Meeting of the Steering Committee of the Global Nuclear Safety and Security Network (GNSSN). Austria, Vienna. 08 - 09 November 2018. The purpose of the meeting is to discuss the development of knowledge safety networks and review the methodology for self- assessment of nuclear safety capacity building in Member States. Total number of participants 5
- Seventh Project Review Meeting - Implementation and Management Steering Committee Meeting EC-IAEA Cooperation on Nuclear Safety, Austria, Vienna, 18-19-June 2018. The purpose of the event is to continue technical discussions on cooperation between the IAEA and the EC under the MoU on Nuclear Safety Cooperation, and to prepare for the SOM meeting on 8 Feb 2019. Total number of participants 3

SG2: Strengthened IT platform

- GNSSN Website: create a platform to connect people and facilitate the exchange of information, enhance transparency, strengthen effective partnerships, and enhance networking and to provide access to tools, materials, resources and knowledge databases with the goal to enhance communication, relationships and build public trust in a harmonized matter.
- The current wireframe of the Regional and Thematic networks websites is built on the GNSSN IT platform.
- The IT platforms under the Global Nuclear Safety and Security Network are maintained and updated as planned. Additionally, new IT collaboration spaces were also created for some new initiatives under the GNSSN website.
- The public interface of the GNSSN website has been restructured to facilitate knowledge sharing, promotion of activities pertinent to nuclear safety and security as well as relevant IAEA vacancy notices. Additionally, new IT collaboration spaces for some new initiatives such as network of academic educators and practical trainers in

the areas of EPR (iNET-EPR) and for the External Events Safety Section were also created under the GNSSN website. It was discussed and agreed to further restructure the protected area of the GNSSN IT platform to facilitate information sharing in a more structured manner.

- Due to COVID-19 pandemic, some activities planned for 2019-2021 have been postponed and will be implemented in 2022.

SG3: Enhanced competence

- Consultancy Meeting on the Safety and Security Interface, Austria, Vienna, 9-13-Apr. The objectives of this meeting are i) to discuss the main elements of the safety and security interface and to analyse the existing IAEA services and associated publications ii) identify existing gaps and propose suggestions to the Secretariat to enhance how the interface is addressed in the technical assistance provided to Member States. All participants 3.
- TSOF: Workshop on Building Technical and Scientific Capabilities in Embarking Countries, Austria, Vienna, 10-13-Apr. The purpose of this workshop is to present initiatives supporting Member States in developing their strategies to establish or to strengthen their Technical and Scientific Support Organization (TSO) capacity. The workshop is aimed at countries embarking on nuclear power, or with established nuclear power programmes, which are willing to improve their TSO related strategies and to share comments on improving the materials developed by the IAEA. The workshop will include a presentation of the IAEA-TECDOC-1835 on Technical and Scientific Support Organizations Providing Support to Regulatory Functions, presentation of case studies, and TSO self-assessment methodologies. All participants 6.
- International School on Nuclear and Radiological Leadership for Safety - India 2018, India, Bahadurgarh, 26-30-Nov. The purpose of the event is to deliver a one-week programme of the International School on Nuclear and Radiological Leadership for Safety, which is based on General Safety Requirements Leadership and Management for Safety (GSR Part 2). The School will cover topics such as Leadership for Safety, Safety Culture and the Systemic Approach using realistic case studies. The case studies cover a range of nuclear and radiation safety scenarios. Participants will work in groups using an interactive dialogue approach along with facilitators acting as mentors, guiding and challenging participants in learning on leadership for safety. All participants 12

SG4 Harmonized capacity building

- 3rd Consultancy Meeting on Development of a Curriculum for a master's degree in Nuclear Safety and Security, Austria, Vienna, 29-Oct-2-Nov. The purpose of the event is to review, and revise completed draft course descriptions and course syllabuses for the proposed curriculum for the Master. Non-staff participants 4

2.10.3. Impact in Member States

The impact of the Global Nuclear Safety and Security Network (GNSSN) on Member States during the period of 2018-2021 has been profound. By fostering connections, GNSSN facilitated the exchange of critical information, building strategic partnerships among governments, educational institutions, technical support organizations, regulators, operators, and nuclear experts. This collaborative network played a pivotal role in enhancing Member States' ability to share nuclear safety and security knowledge openly. The communication efforts ensured that Member States had continued access to up-to-date scientific and technical literature, mitigating the risk of knowledge decay.

Moreover, GNSSN's commitment to collaborative capacity building was instrumental. Member States gained access to essential resources, including training workshops, IAEA safety standards, security guidance, and safety peer review and advisory services. The network's holistic approach to capacity building, emphasizing human resource development and knowledge management, significantly strengthened the skills and competencies of nuclear professionals in Member States.

The GNSSN platform's role in enabling Member States to share information nationally, regionally, and globally has had a lasting impact. This exchange of expertise not only contributed to the development of robust nuclear safety and security infrastructures but also fostered a sense of collective responsibility and collaboration among Member States.

In essence, GNSSN's impact on Member States has been transformative, promoting a culture of shared knowledge, collaborative capacity building, and strategic partnerships, thereby fortifying the global nuclear safety and security framework.

2.10.4. Beneficiary Countries

Argentina, Armenia, Austria, Bangladesh, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Egypt, Finland, France, Germany, Ghana, Hungary, India, Indonesia, Iraq, Japan, Jordan, Kazakhstan, Kenya, Lithuania, Malaysia, Morocco, Myanmar, Nigeria, Pakistan, Philippines, Republic of Korea, Romania, Russian Federation, Slovenia, South Africa, Sri Lanka, Sudan, Thailand, Turkey, Uganda, Ukraine, United States of America, Viet Nam.

2.10.5. Future Project Outlook

Looking ahead, the Global Nuclear Safety and Security Network (GNSSN) is committed to a future marked by continuous growth and adaptability. Collaborative capacity building will remain a priority, with tailored programs addressing evolving challenges in nuclear safety. GNSSN also aims to deepen networking dynamics, fostering a culture of continuous professional development. Guided by principles of adaptability and innovation, the network is dedicated to staying at the forefront of advancements in the nuclear safety and security field.

In summary, GNSSN's future projects reflect a proactive approach, driven by the commitment to advancing global nuclear safety and security through collaboration and capacity building.

2.11. TECHNICAL AND SCIENTIFIC SUPPORT ORGANIZATIONS FORUM (TSOF)

2.11.1. Summary of Progress and Outcomes

During the period of 2018-2021, amid the challenges posed by the global COVID-19 pandemic, the Technical and Scientific Support Organizations Forum (TSOF) demonstrated resilience and adaptability in achieving its objectives. The forum, established by the International Atomic Energy Agency (IAEA) in 2010, continued to play a pivotal role in promoting collaboration among Technical and Scientific Support Organizations (TSOs) and entities interested in technical and scientific aspects related to nuclear safety and security.

Throughout the pandemic, TSOF facilitated an open dialogue among its members, encouraging the exchange of technical and scientific information. Despite the limitations imposed by the pandemic, the forum remained committed to strengthening the role of technical and scientific capabilities in Member States. Recognizing the challenges faced by countries expanding or initiating nuclear programs, TSOF provided support to enhance their technical and scientific capabilities.

The forum adapted to the virtual environment, organizing workshops and activities that fostered coordination and collaboration among its members. It served as a platform for sharing safety and security research, development, and experiences, including valuable lessons learned during these unprecedented times. TSOF also actively sought feedback on the utilization of IAEA safety standards and other publications, contributing to ongoing improvements in nuclear and radiation safety and security globally.

The TSOF Steering Committee, meeting biannually, played a crucial role in providing guidance on policies and strategies for the forum. Despite the disruptions caused by the pandemic, the Committee, headed by its appointed chairperson, continued to define and review its membership in coordination with the IAEA every two years.

In the face of challenges, the TSOF not only sustained its efforts to enhance technical and scientific capabilities but also demonstrated its resilience as a vital platform for collaborative initiatives in nuclear safety and security.

2.11.2. Outputs in 2018-2021

SG1: Enhanced networking

- International Conference on Challenges Faced by Technical and Scientific Support Organizations (TSOs) in Enhancing Nuclear Safety and Security. Belgium, Brussels.

15 – 18 October 2018. The purpose of the conference is to consider how to develop and strengthen technical and scientific capabilities in support of regulatory decision-making to achieve enhanced nuclear and radiation safety and security in both countries with existing nuclear installations and countries embarking on a nuclear power programme. Non- Staff Participants 66

- TSOF: 13th Meeting of the Steering Committee of the Technical and Scientific Support Organization Forum, Austria, Vienna. 18 – 19 April 2018. The objectives of the Steering Committee meeting of the Technical and Scientific Support Organization (TSO) Forum were to give feedback on the preparation of the fourth TSO Conference and to discuss the recent achievements of the TSO Forum including the results of TSO workshop. Non- Staff Participants 16
- Third Programme Committee Meeting for the Fourth Technical and Scientific support Organization Conference to be held in Brussels 2018. Austria, Vienna. 16 – 17 April 2018. The objective of the third Programme Committee meeting of the fourth Technical and Scientific support Organization (TSO) Conference is to finalize the agenda of the TSO Conference to be held in 2018 in Brussels, Belgium and to select the abstracts for papers and posters to be presented at the Conference. Please re-approve due to change of Scientific Sec in EVT needed for closure. Non- Staff Participants 2
- Seventh Consultancy Meeting on TSO initiative. Austria, Vienna. 11 – 12 September 2018. The objective of the seventh Consultancy meeting was to develop a roadmap of competencies for TSOs and to review the lessons learnt from the first workshop on TSO initiative implemented in 2018. Non- Staff Participants 4
- TSOF: Technical Visit for the preparation of the TSO Conference CN-266 to be held in Brussels 15-19 October 2018, printing. Belgium, Brussels. 08 – 09 February 2018. The purpose of the visit was to assess the suitability from both the logistical and programmatic perspective of the venue for the International Conference on the Challenges Faced by Technical and Scientific Support Organizations in Enhancing Nuclear Safety and Security: Ensuring Effective and Sustainable Expertise to be held in Brussels, Belgium, from 15 to 18 October 2018, as per the host government agreement (HGA) concluded on 15 November 2017. To discuss with the hosting organization, Bel V, officials as well as contracted Professional Congress Organizer details concerning the preparation and organization of the conference.
- TSOF: Completion of the proceedings of the 3rd TSO Conference 2014. Home based assignment, Cologne and VIC. 07 – 20 March 2018. Completion of the proceedings of the 3rd TSO Conference 2014. The objective of the assignment is to finalize the proceedings of the 3rd TSO Conference 2014 in Beijing taking into account the comments made the Publication Committee in August 2016.
- Completion of the proceedings of the 3rd TSO Conference 2014. The objective of the assignment is to finalize the proceedings of the 3rd TSO Conference 2014 in Beijing taking into account the comments made the Publication Committee in August 2016.
- TSOF: Technical Visit for the preparation of the TSO Conference CN-266 to be held in Brussels 15-19 October 2018, printing, Belgium, Brussels 08 – 09 February 2018. The purpose of the technical visit was to assess the suitability from both the logistical and programmatic perspective of the venue for the International Conference on the

Challenges Faced by Technical and Scientific Support Organizations in Enhancing Nuclear Safety and Security: Ensuring Effective and Sustainable Expertise to be held in Brussels, Belgium, from 15 to 18 October 2018, as per the host government agreement (HGA) concluded on 15 November 2017. To discuss with the hosting organization, Bel V, officials as well as contracted Professional Congress Organizer details concerning the preparation and organization of the conference.

SG2: Strengthened IT platform

- TSOE Website: create a platform to connect people and facilitate the exchange of information, enhance transparency, strengthen effective partnerships, and enhance networking and to provide access to tools, materials, resources and knowledge databases with the goal to enhance communication, relationships and build public trust in a harmonized matter.
- The current wireframe of the TSOE is built on the GNSSN IT platform.
- The IT platforms under the Global Nuclear Safety and Security Network are maintained and updated as planned. Additionally, new IT collaboration spaces were also created for some new initiatives under the TSOE website.

SG3: Enhanced competence

- TSOE: Workshop on Building Technical and Scientific Capabilities in Embarking Countries, Austria, Vienna. 10 – 13 April 2018. The purpose of this workshop was to present initiatives supporting Member States in developing their strategies to establish or to strengthen their Technical and Scientific Support Organization (TSO) capacity. The workshop was aimed at countries embarking on nuclear power, or with established nuclear power programmes, which are willing to improve their TSO related strategies and to share comments on improving the materials developed by the IAEA. The workshop included a presentation of the IAEA-TECDOC-1835 on Technical and Scientific Support Organizations Providing Support to Regulatory Functions, presentation of case studies, and TSO self-assessment methodologies. Non – staff participants 6

2.11.3. Impact in Member States

TSOE plays a crucial role in enhancing nuclear safety and security for its Member States. Through an open dialogue and the exchange of technical information, TSOE facilitates coordination among its members, contributing to global nuclear safety. The forum supports Member States in developing and maintaining high safety standards, especially for those initiating nuclear programs. Through workshops, conferences, and initiatives, TSOE actively strengthens technical capabilities and provides a platform for sharing experiences. This impact

extends to its Member States. The collaboration with partner organizations such as the European Commission and its Joint Research Centre enhances TSOE's reach, reinforcing its commitment to shaping a robust nuclear safety landscape globally.

2.11.4. Beneficiary Countries

Argentina, Bangladesh, Belarus, Belgium, China, Egypt, Ethiopia, Finland, France, Germany, Ghana, India, Indonesia, Iran, Italy, Japan, Kazakhstan, Kenya, Lithuania, Madagascar, Malaysia, Montenegro, Myanmar, Niger, Nigeria, Pakistan, Poland, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Senegal, Slovakia, Slovenia, South Africa, Sudan, Tajikistan, Thailand, Uganda, Ukraine, United Kingdom, United States of America, Viet Nam.

2.11.5. Future Project Outlook

TSOE envisions a proactive approach to enhancing nuclear safety and security by introducing more specific topic meetings and workshops. These workshops will focus on the practical application of communication plans, including their components, and the monitoring and evaluation of communication programs. The forum also strengthening communication strategies, recognizing their pivotal role in building public trust, ensuring TSOE remains dynamic and responsive to evolving needs in the realm of nuclear safety and security.

2.12. DIFFICULTIES ENCOUNTERED IN IMPLEMENTATION AND CHANGES INTRODUCED

2.12.1. ANSN

Due to the COVID-19 pandemic, it was very difficult to hold face-to-face meetings, so most meetings from 2019 to 2022 have been converted into virtual meetings. The virtual meeting has the advantage of allowing many participants at no costs, but it was accompanied by many inconveniences such as insufficient meeting time due to time difference between IAEA and Asia, and technical difficulties related to online communication.

One of the challenges facing us at the point after pandemic is to increase the participation of Member States in the ANSN events. In particular, experts from Member States with a lot of experience and expertise in nuclear area, such as China, Japan, and Korea, need to actively discuss and share their experiences with other Member States.

Another challenge is to improve the effectiveness and efficiency of ANSN support activities, and restructuring of Topical Groups and updating of Term of References will be considered in 2023 in order to reflect the needs of all Member States.

2.12.2. CB

Several discussions to enhance coordination and cooperation among the regional and

thematic networks have been considered by the GNSSN Steering Committee. It is necessary to draft relevant actions to support the common needs of regional networks effectively and efficiently and as necessary, conceptualize projects to address these needs. Several activities planned for 2021 have been implemented virtually due to the COVID-19 pandemic. The new format used, provided a good opportunity to continue implementing the activities on time but also to involve more participants from other regions without jeopardizing the funds allocated under the different tasks. Nevertheless, face to face meetings is still needed to ensure the exchange of experiences and practices between the Participating countries.

Based on the feedback received during the development of the nuclear safety and security master's degree course, further revision/development is needed to ensure that the proposed curriculum is providing enough flexibility for the universities to create and develop the necessary courses and teaching material.

Further development of IT tools for TSO self-assessment methodology and Nuclear Safety Knowledge Management self-assessment methodology has to be conducted in close cooperation with IAEA Member States.

The public interface of the GNSSN website has been restructured to facilitate knowledge sharing, promotion of activities pertinent to nuclear safety and security as well as relevant IAEA vacancy notices. Additionally, new IT collaboration spaces for some new initiatives such as network of academic educators and practical trainers in the areas of EPR (iNET-EPR) and for the External Events Safety Section were also created under the GNSSN website. It was discussed and agreed to further restructure the protected area of the GNSSN IT platform to facilitate information sharing in a more structured manner.

Due to COVID-19 pandemic, some activities planned for 2021 have been postponed and will be implemented in 2022.

2.12.3. EuCAS

- Sometimes there were restriction due to limited funds -> finding alternative sources
- To motivate participants on short notice -> sending reminders and changing deadlines
- Changing administrative rules on short notice (this is an internal comment, not to published)
- External obstacles (Covid is mentioned already)
- Motivation of working group leaders declined due to the Covid-19 pandemic -> introducing webinars

2.12.4. FNRBA

Major change in implementation is considered in the draft FNRBA Contribution Report which identifies the priorities of FNRBA member states across various technical working areas for future years, based on the FNRBA strategic action plan.

Since this report has been devised in close coordination and cooperation with various FNRBA stakeholders, it can be considered as the baseline for future FNRBA activities.

2.12.5. GNSSCOM

GNSSCOM was created to provide assistance in non-nuclear emergencies. In general, a lot has changed regarding resilience, resilience and innovation in the context of Covid-19, which has only reinforced the critical role of inclusiveness in communications and the need for trust in the nuclear industry. We have witnessed a digital transformation as well as inequalities in access to public communications and barriers to access based on socio-economic constraints and considerations. There are great opportunities in communications and equally great challenges due to disinformation. We must strive to strengthen and innovate when it comes to public communications and GNSSCOM a strategic tool for tasks in communications.

2.12.6. TSOE

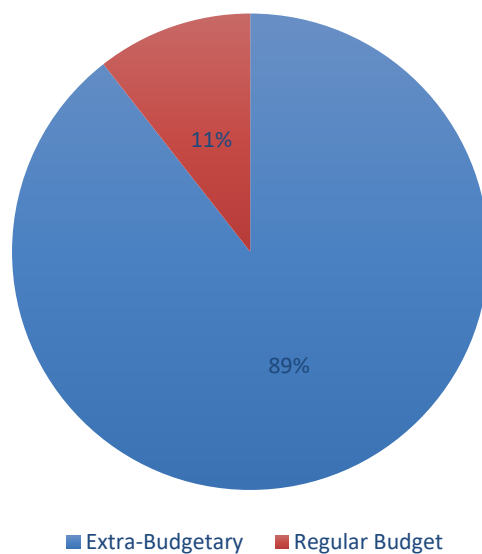
- Sometimes there were restriction due to limited funds -finding alternative sources
- To motivate participants on short notice - sending reminders and changing deadlines
- Changing administrative rules on short notice (this is an internal comment, not to published)
- External obstacles (Covid is mentioned already) relocation, postponement
- Motivation of working group leaders declined due to the Covid-19 pandemic introducing webinars

2.13. FINANCIAL OVERVIEW

Financial Overview 2019

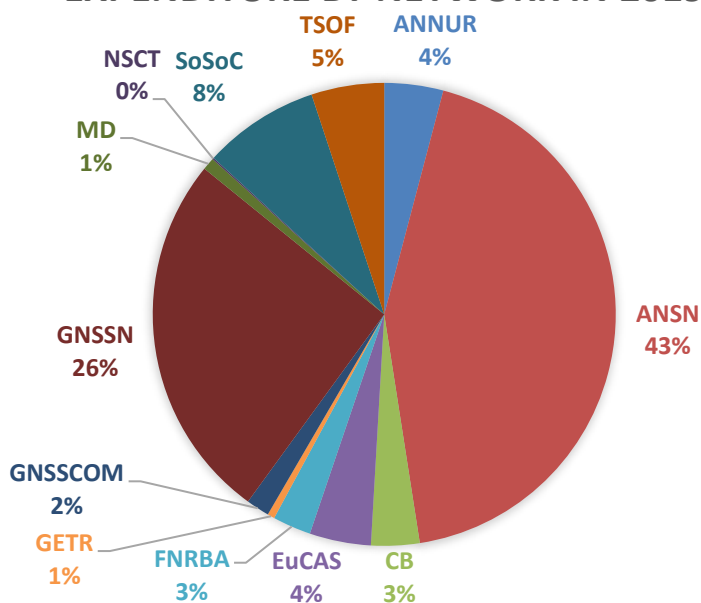
The GNSSN networks received Extra-Budgetary contributions in the total amount of € 1 176 691 in 2019. The Extra-Budgetary contributions include funds to cover part of staff cost for three Cost Free Experts and one Intern. Additional funding in the amount of €173 611 was received from the IAEA Regular budget. Total expenditure for the year 2019 contributed by Extra-Budgetary contributions amounted to €1 468 698.6.

Expenditure 2019



Expenditure by Network in 2019

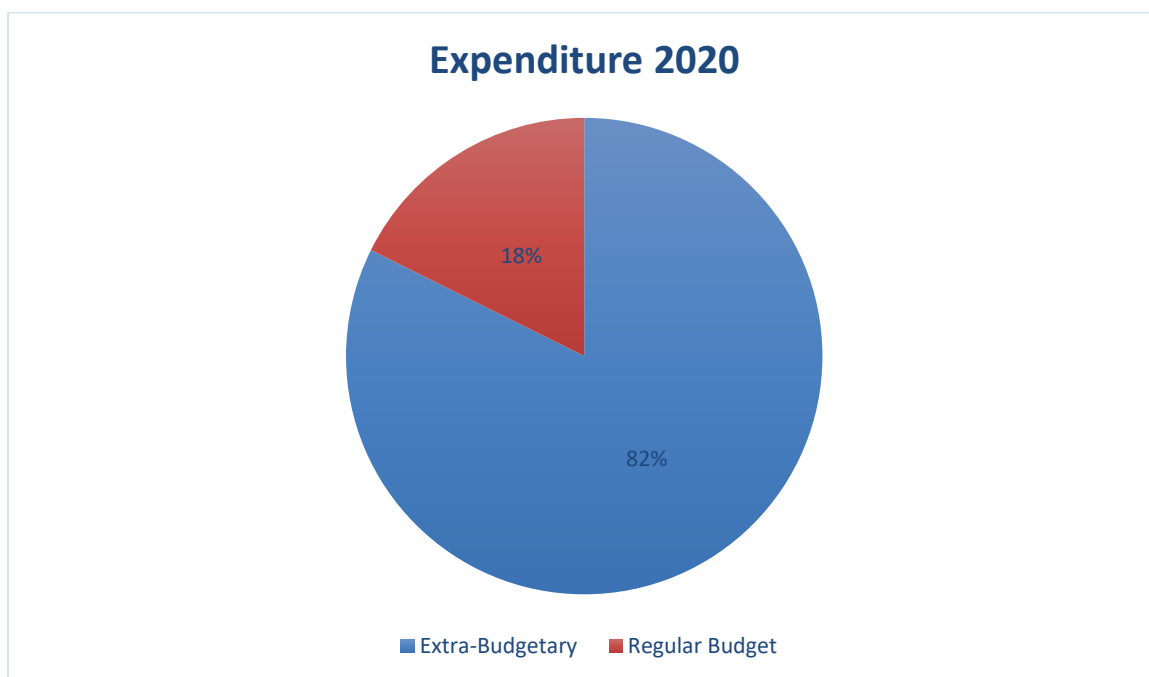
EXPENDITURE BY NETWORK IN 2019



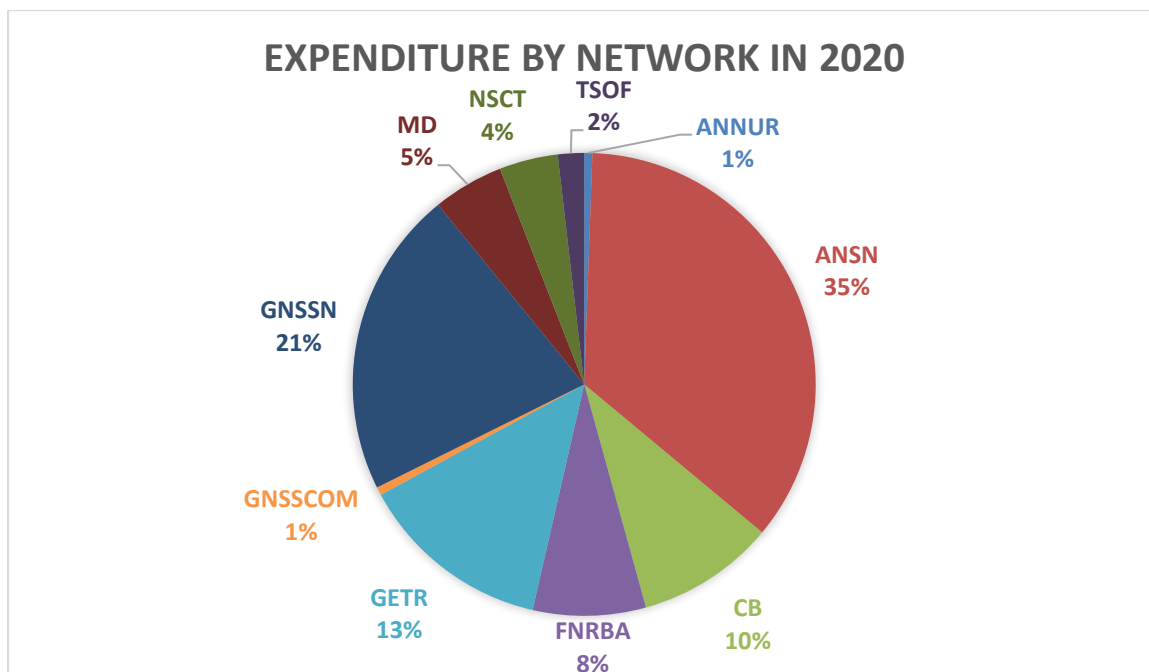
Financial Overview 2020

The GNSSN networks received Extra-Budgetary contributions in the total amount of € 550 713 in 2020. The Extra-Budgetary contributions to cover staff cost for three Cost Free Experts working fully or partially for the implementation of the networks was received in previous years and is therefore not included in the 2020 contributions. Additional funding in the amount

of € 139 090 was received from the IAEA Regular budget. In 2020, Extra-Budgetary expenditure dropped significantly due to the Covid-19 pandemic. Expenditure dropped by over 50 % to € 648 652.67.

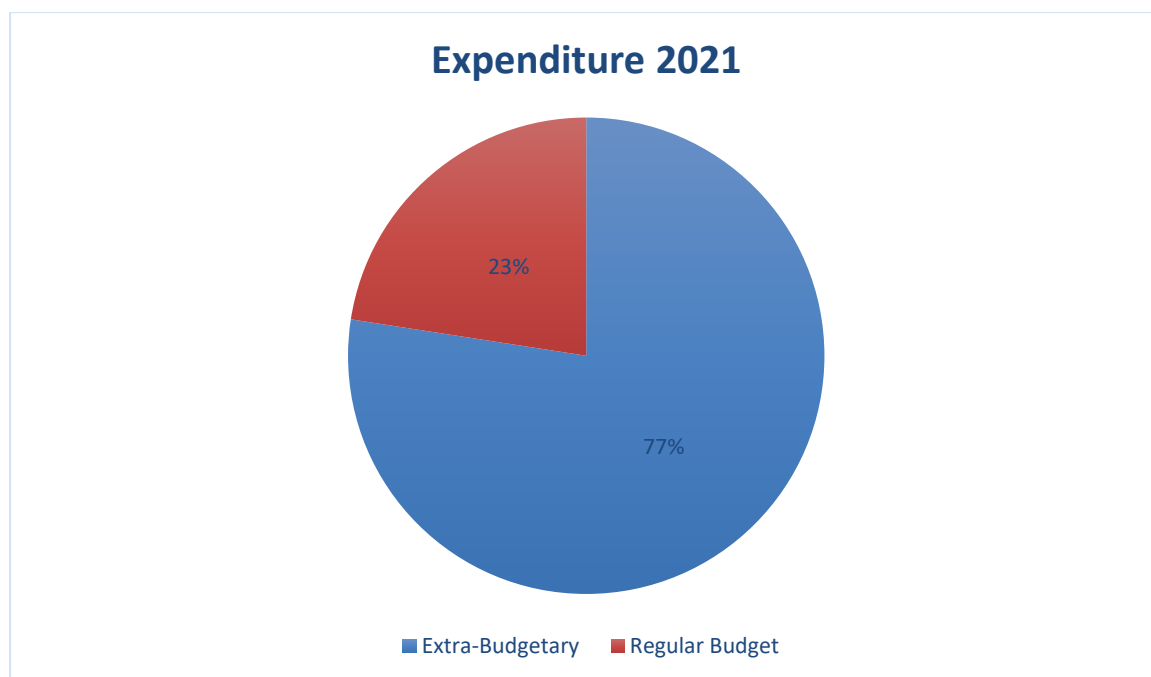


Expenditure by Network 2020

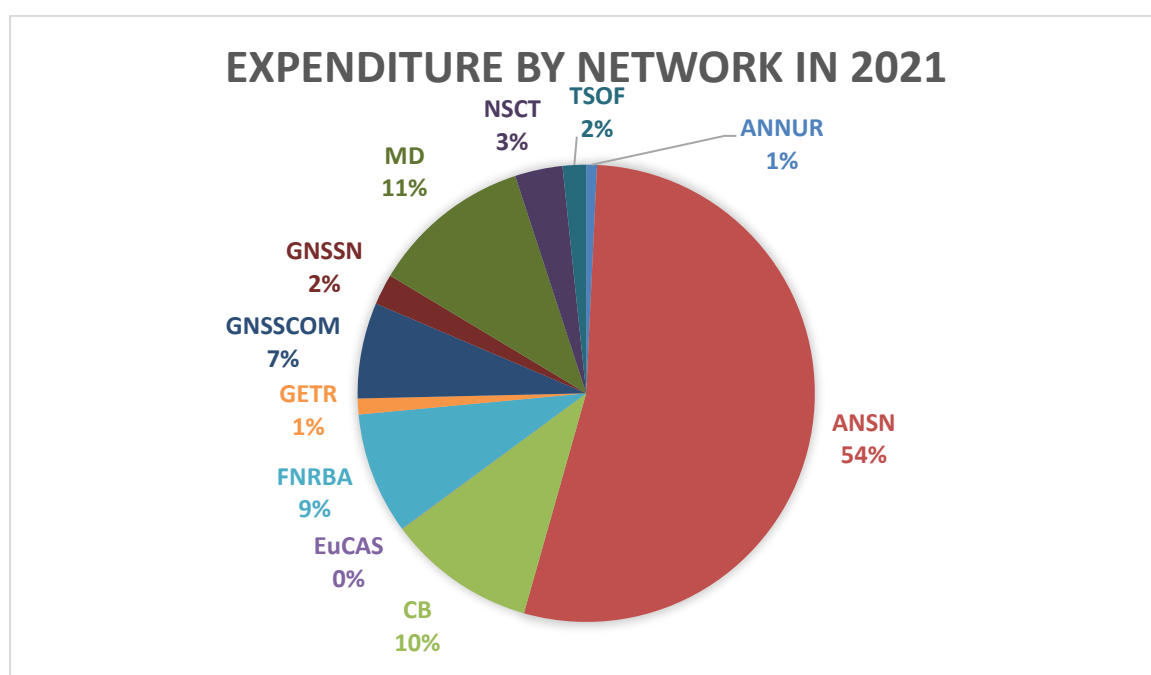


Financial Overview 2021

The GNSSN networks received Extra-Budgetary contributions in the total amount of € 1 537 742 in 2021, including Extra-Budgetary contributions to cover staff cost for three Cost Free Experts working fully or partially for the implementation of the networks. Additional funding in the amount of € 124 200 was received from the IAEA Regular budget. 2021 saw an even further decrease in Extra-Budgetary expenditure again caused by the Covid-19 pandemic. Extra-Budgetary expenditure totaled € 426 408.65 for the year 2021.



Expenditure by Network in 2021



3. LESSONS LEARNED AND PROPOSED ACTIONS

3.1. LESSONS LEARNED

There is a need to assist Member States, upon request with an integrated capacity building plan for radiation and nuclear safety. This plan could be the result of an evaluation of Member States' infrastructure with regards to capacity building and the safety standards request for competence management at the national level.

GNSSN and all regional networks are implementing over 100 capacity building activities yearly. There is a need to develop a system that assists the Secretariat and Member States to track the competence development of the beneficiaries Member States organizations.

The Secretariat is one of the partner organizations that provides and assists Member States with developing a strong and sustainable nuclear safety infrastructure. There is a need to ensure highest coordination and establish multi-action projects to avoid duplication and ensure consistency.

There is a need to reduce the face-to-face meetings and engage in new technologies to support the Secretariat in building the necessary competences in Member States.

TSOF

- A number of planned activities needed postponements.
- Promotion of the methodology for TSO self-capability needs to be strengthened and pursued closely.

EuCAS

- EuCAS - new and young network, quite large and have different level of development
- so different needs in different countries, members are not so well integrated with WG activities, but still many countries have joint interests and similar situation and challenges. It still necessary to intensify the exchange.
- EuCAS activities were strongly affected by Covid and some members did not have possibilities to attend virtual meetings. This led to lower interest and quite passive participation. There are still difficulties to activate some member countries due to a slow or no response. Further activities are needed in that regard.
- EuCAS activities before Covid-19 were organised and performed in excellent way with very committed participation which had strong focus on needs and further activities.
- EuCAS is regaining its momentum by developing and performing activities such as webinars hybrid meetings and workshops, which were postponed.

3.2. RISKS:

TABLE 10: RISK ANALYSIS OF POTENTIAL ISSUES.

Risk No.	Risk	Probability	Impact	Remedial Action	Risk Owner
1.	Inadequate financial support	High	High	Identify alternative resources and address issues with donors and IAEA high level management	Steering Committee/ IAEA
2.	Lack of awareness of the Governance Plan and policy enforcement among GNSSN stakeholders	Low	High	Identify communication and outreach material and address the issue to the GNSSN Executive	GNSSN Governance Board
3.	Lack of coordination between the GNSSN stakeholders and partners	Low	Medium	Identify alternative communication path and address the issue to the GNSSN Executive	GNSSN Advisory Group
4.	Malfunctioning of the IT infrastructures supporting the GNSSN	Low	Medium	Troubleshoot errors and report to IAEA Division of Information Technology	GNSSN Network Coordinators
5.	Data and information on the GNSSN platform	Medium	High	Ensure responsible commitment and	GNSSN Governance Board

	becoming outdated and not being replaced or removed.			accountability of relevant member of GNSSN	
6.	Lack of quality control and effective management for the regional networks	Low	High	Identify the areas that need to be further monitored and ensure accountability	Steering Committees

3.3. WORK PLAN OVERVIEW OF 2022 – 2023

3.3.1. ANSN

- In 2023, a total of 19 events are planned to be held as ANSN supporting activity and the titles are as follows:
- IAEA-KINS Workshop on Radiation Safety and Emergency Response in Medical or Industrial Use of Radiation
- Regional Workshop on Nuclear Safety Knowledge Management Programmes for Regulatory Bodies
- Regional Workshop on the Management of Training Systems for Nuclear and Radiation Safety
- Regional Workshop on Review and Assessment of Nuclear Power Plant License Applications by Regulatory Bodies
- Regional Workshop on Establishing a Technical and Scientific Support Organization
- Regional Workshop on the Development and Implementation of Effective Integrated Management Systems for Nuclear Facilities and Activities
- IAEA-Fukui Workshop on Safety Culture Self-Assessment for Regulatory Bodies
- Regional Workshop on the Development of National Strategies and Regulatory Requirements for Spent Fuel Management
- Regional Workshop on the Development and Implementation of a Disposal Programme for Radioactive Waste Focusing on Closure and Post-closure
- Regional Workshop on the Management and Oversight of Supplemental Staff at Nuclear Power Plants
- Regional Workshop on Operating Experience Feedback for Research Reactors
- 11th Annual Meeting of the Regional Advisory Safety Committee for Research Reactors in Asia and the Pacific
- Regional Workshop on Site Evaluation for Small Modular Reactors
- Regional Workshop on the Management of National Dose Registries
- Regional Workshop on Radiation Protection in Nuclear Embarking Countries
- Regional Workshop on Safety Requirements for Transport Safety

- Technical Meeting on the Improvement of Regulatory Infrastructure for the Transport of Radioactive Material
- Ninth Meeting of the Self-Assessment Coordination Group
- 33rd Meeting of the Steering Committee of the Asian Nuclear Safety Network

3.3.2. ANNuR

Planned activities for 2022

- 13th Annual Meeting of the Arab Network of Nuclear Regulators
- Regional Workshop on Nuclear Safety Knowledge Management Programmes
- Regional Workshop on Oversight of the Interface Between Nuclear Safety and Nuclear Security in Nuclear Facilities
- Consultancy Meeting to Discuss the Operational and Technical Strategies of the Arab Network of Nuclear Regulators

Planned activities for 2023

- 14th Annual Meeting of the Arab Network of Nuclear Regulators
- Regional Workshop on Optimisation of Radiation Protection in the Control of Occupational Exposure
- Regional Workshop on Strengthening Radiation Safety Culture in Medicine

3.3.3. CB

Planned activities for 2023

- Workshop on Nuclear Safety Capacity Building and National Self-assessment

3.3.4. EuCAS

Planned activities for 2022

- 8th Steering Committee meeting
- 9th Steering Committee meeting
- Discussion on the Term of References of steering committee and each working group and final agreement
- WG 1 workshop on “Technical and Scientific Support Organizations (TSO) Providing Support to Regulatory Bodies: Challenges with their Establishment and Operation”
- WG 2 Workshop on “The Regulation and Management of Existing Facilities for the Predisposal of Radioactive Waste”
- WG 3 Workshop on “Regulatory system for remediation and decommissioning”
- WG 4 Workshop on “Review and assessment based on the results of new questionnaire”

- Webinars on the safety guides and other topics (lectures, training)
- Cooperation with existing networks, investigation for possible invitation for the EuCAS events

Planned activities for 2023

- Tenth Meeting of the Steering Committee of the European and Central Asian Safety Network
- 11th Meeting of the Steering Committee of the European and Central Asian Safety Network
- Webinar: Introductory Webinar on the IAEA Safety Standards “Remediation Strategy and Process for Areas Affected by Past Activities or Events” and “Leadership, Management and Culture for Safety in Radioactive Waste Management”
- Webinar: An Introduction to Safety Standards e.g. “Radiation Safety in the Use of Radiation Sources in Research and Education [IAEA Preprint] – SSG-87” and “Application of the Concept of Exemption [IAEA Preprint] 2022 GSG-17”
- Regional Workshop to discuss Emergency Preparedness in Member States of the European and Central Asian Safety Network
- Regional Workshop on Technical and Scientific Support Organizations Providing Support to Regulatory Bodies: Challenges with their Establishment and Operation
- Regional Workshop on the Establishment and Operation of Technical Support Organizations
- Preparatory Meetings for each working group

3.3.5. FNRBA

Planned activities for 2022

- 14th Plenary Meeting of the Forum of Nuclear Regulatory Bodies in Africa
- Regional Training Course for Regulators on Stakeholder Involvement in Licensing and Regulation
- 19th Meeting of the Steering Committee of the Forum of Nuclear Regulatory Bodies in Africa

Planned activities for 2023

- 20th Meeting of the Steering Committee of the Forum of Nuclear Regulatory Bodies in Africa
- Regional Workshop on Development of Regulations on Radioactive Waste Management
- Regional Workshop on Capacity Building in Regulatory Body and Instruction of IAEA's SARCoN Tool

3.3.6. GNSSCOM

In 2023, a total 4 events are planned to be held as GNSSCOM supporting activity and the titles are as follows:

Virtual Regional Workshop on Developing Communication Plans in the Americas;
Consultancy meeting/training/developing materials on Enhancing Communication Skills;
Webinar on the representation and role of women in the nuclear safety communication;
7th Steering Committee Meeting.

3.3.7. GNSSN

Planned activities for 2023

- 20th Meeting of the Steering Committee of the Global Nuclear Safety and Security Network
- Regional workshop on briefing Member States on the TSO self-assessment methodology, also referred to as “TOSCA”
- Regional Workshop on the Capabilities of the Global Nuclear Safety and Security Network's IT Platform
- Second International Workshop on Technical and Scientific Capabilities Supporting Regulatory Functions
- 21st Meeting of the Steering Committee of the Global Nuclear Safety and Security Network

3.3.8. TSOF

Planned activities for 2022

- Consultancy meetings for the web-based TOSCA tool
- Preparatory meeting for TSO self-capability assessment
- National workshops for TSO self-capability assessment
- 2nd Programme Committee Meeting
- 17th Steering Committee Meeting
- 5th TSO Conference

Planned activities for 2023

- 17th TSOF Steering Committee Meeting
- 18th TSOF Steering Committee Meeting
- 19th TSOF Steering Committee Meeting (2024)
- New structure (description, core groups, strategic board)

- Core groups (TOSCA, R&D, adhoc): Development of structure (internal ToR) and implementation, detailed mandate, roadmap (e.g., TecDoc), membership
- Explanatory mission in Norway
- Preparatory mission in Norway (if requested)
- National Workshop Norway (if requested)
- DSA/IAEA conference on TSO establishment (to be confirmed by the Norwegian Authority DSA)
- Preparatory meetings for potential participants from candidate member states for TOSCA (Türkiye, Ghana, Egypt, CARIBBEAN, ...)
- Promotion of the TOSCA methodology by webinars, International workshops, side event (GC2023), and experience feedback
- Revision of the TecDoc 1835
- Confirmation of the members for the Program Committee for the 5th TSO Conference for 2nd Program Committee Meeting
- 3rd Program Committee Meeting for the 5th TSO Conference (2024)
- Task force to enhance cooperation between RCF-TSOF by a meeting between the chairs of the RCF and TSOF

4. Abbreviations

AAEA	Arab Atomic Energy Agency
AFCONe	African Commission on Nuclear Energy
AFRA	African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology
ANNuR	Arab Network of Nuclear Regulators
ANSN	Asian Nuclear Safety Network
AUC	African Union Commission
EPR	Emergency Preparedness and Response
EuCAS	European and Central Asian Safety Network
FNrBA	Forum of Nuclear Regulatory Bodies in Africa
FORO	Ibero-American Forum of Radiological and Nuclear Regulatory Agencies
GNSSN	Global Nuclear Safety and Security Network
INSSP	Integrated Nuclear Security Support Plan
IRDP	International Regulatory Development Partnership
KINS	Korea Institute for Nuclear Safety
NS	IAEA Department of Nuclear Safety and Security
RIDP	Regional Regulatory Infrastructure Development Project
RTTG	Radiation and Transport Safety Topical Group
SACG	Self-Assessment Coordination Group
TG	Topical Group
TSOF	Technical and Scientific Organization Forum
TWG 5	FNrBA Technical Working Group 5 - Upgrading Safety In Nuclear Research Reactor
IRRS	Integrated Regulatory Review Service
INIR	Integrated Nuclear Infrastructure Review
US NRC	United States Nuclear Regulatory Commission