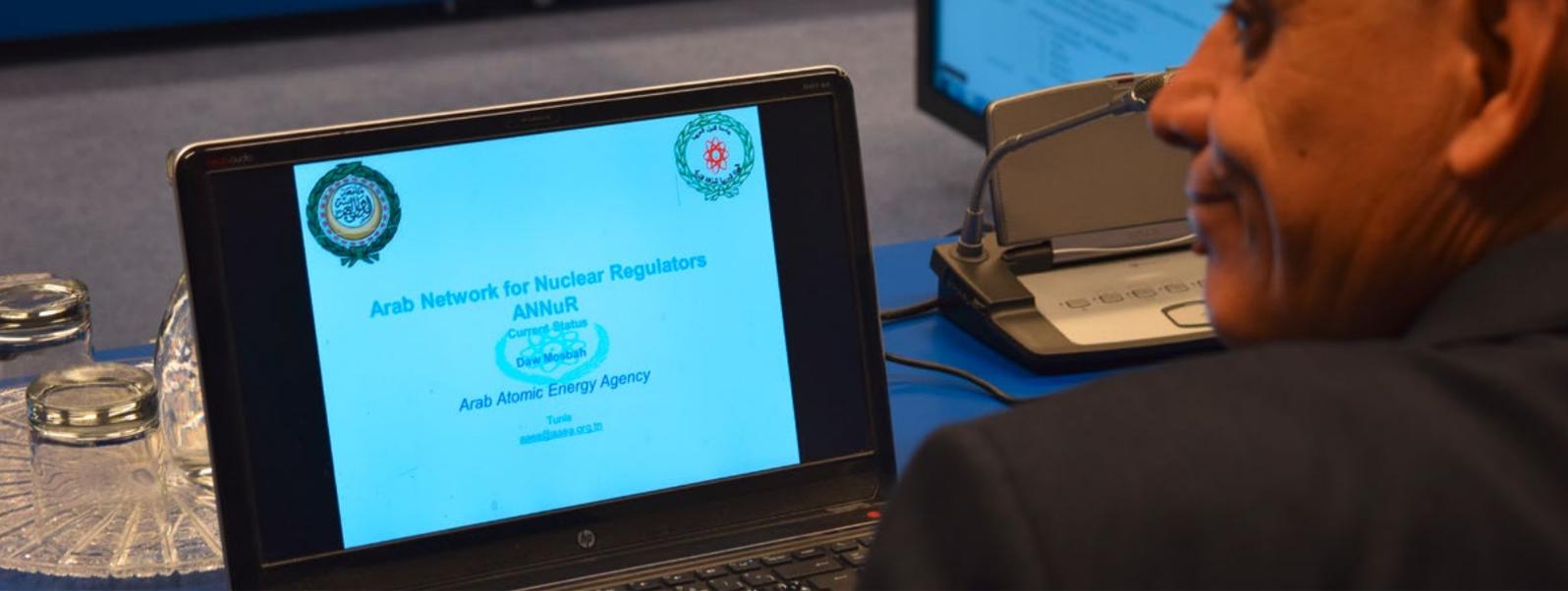


ARAB NETWORK OF NUCLEAR REGULATORS

STRATEGIC PLAN 2016 - 2020



INTRODUCTION

The use of nuclear technologies in Arab countries has increased significantly in different social and economic sectors (e.g. health, industry, agriculture and water management, etc.). The energy and electricity need of many Arab countries has significantly increased and they expressed their interest to embark on nuclear power programme. These developments urge the need for the establishment of a national independent, competent and efficient regulatory body as well as a sustainable regional framework for to the exchange of information, knowledge, experiences and lessons learned. Therefore, the Arab Network of Nuclear Regulators (ANNuR) was established in January 2010. Since its inception, ANNuR become an integral part of the Global Nuclear Safety and Security Framework-GNSSF, linking and promoting international legal instruments, the use of the IAEA safety standards, security guidance and peer reviews.

The Arab Atomic Energy Agency is currently fostering ANNuR programme within the framework “The Arab Strategy for Peaceful use of Atomic Energy up to 2020”, under the action plan of the strategic project ‘Strengthening the regulatory and legislative frameworks for nuclear and radiation activities

in Arab countries’ which has been developed by senior Arab experts and approved by AAEA executives.

The purpose of ANNuR is to foster, enhance, strengthen and harmonize the radiation protection, nuclear safety and security regulatory infrastructure frameworks among the member states; and to provide mechanisms for ANNuR to be an effective, efficient and internationally recognized forum to exchange regulatory experiences and practices among the radiation and nuclear regulatory bodies in Arab countries.

Presently, ANNuR has eight thematic working groups consisting of experts working together on issues of common interest, sharing knowledge, and developing solutions to address problems and working towards filling gaps or finding solutions. These groups are:

- » Strengthening infrastructure and capacity building for regulatory bodies,
- » Legislation and regulation frameworks,
- » Emergency preparedness and response,
- » Radioactive waste management and disposal of spent fuel,



- » Safety, security and safeguards,
- » Safety management of research reactors,
- » Transport of nuclear and radioactive materials, and
- » Information technology.

While regulation remains a national responsibility, ANNuR is intended to take in consideration the dynamics of the technology and the globalization of the nuclear industry, and to play a key role in sharing and maintaining the knowledge in radiation protection, emergency preparedness, radioactive waste management, transport of radioactive sources, and nuclear safety and security.

It is essential for ANNuR member countries to have a clear policy and strategy as well as to provide effective coordination for a sound capacity building programme and to allocate resources for its effective implementation.

This document will constitute a basis for the IAEA and ANNuR strategic partners to help and assist ANNuR to move beyond basic information exchange to actual creation of an operative infrastructure, which will have as one of its major aims, the establishment of a common basis for working together to finding adequate solutions to problems relevant to Arab countries.

OBJECTIVES

The strategic objectives are the following:

To provide a platform for fostering regional cooperation in the area of regulatory infrastructure.

To provide the platform for the exchange of expertise, information and experience.

To provide opportunity for mutual support and coordination of regional initiatives.

To provide basis for the establishment of a regional and national capacity building framework.

VISION

An efficient, effective and sustainable network for achieving a high standard in nuclear and radiation safety and security, transport, emergencies and waste management.

The vision will be achieved through:

» Providing guidance towards capacity building in radiation protection, nuclear safety and security regulatory infrastructure and framework among its member countries.

» Promoting sustainable regional cooperation among Arab countries.

VALUES

Planning and implementing ANNuR activities should be based on the highest standard of professionalism.

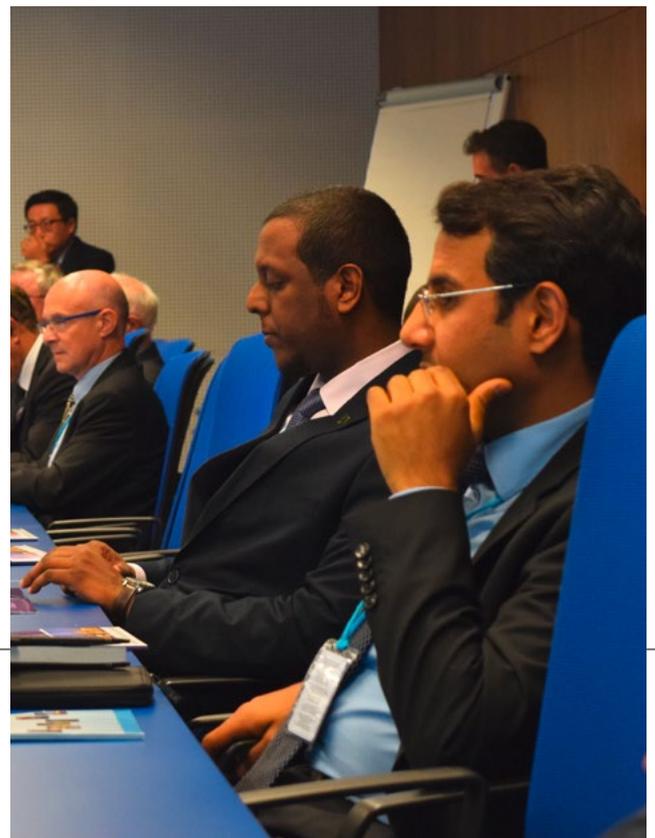
The following core values will underpin the way in which the network will deliver its strategic vision.

- » **Self-initiative:** Effective planning and implementation of cooperative activities, especially those in the area of capacity building, should be made on the basis of the participating countries' own initiative.
- » **Transparency:** Transparency between ANNuR members, ANNuR and other regional networks as well as the IAEA and other partners.
- » **Cooperation:** To achieve maximum impact in the member countries, the activities will be planned and implemented in a cooperative manner.
- » **Inclusiveness:** Participation in planning and implementation shall be open to all member countries.
- » **Knowledge and experience:** The knowledge to be shared and/or transferred through the activities should not be restricted to mere technical data or information but also include tacit knowledge and all those cultural aspects factors relevant to the participating countries.

REGIONAL CONTEXT

Although a wide range of nuclear and radiation technologies are applied in the socio-economic development of the Arab countries, presently Arab member states are at different levels of nuclear technology utilisation. One country in the region will be soon operating a nuclear power plant, while two others are at contractual stage and few countries are actively involved in planning to build nuclear power plants. Six countries are operating research reactors, while others are planning and considering building research reactors.

To respond to the remarkable national and regional changes in the use of nuclear technology and radiation sources, many ANNuR member states have already established a legal and regulatory infrastructure, striving to ensure high standards of safety and to develop an efficient and effective regulatory body.



IMPLEMENTATION

ANNuR will support its member states in the development and implementation of safety and security infrastructures in line with the IAEA safety standards and security guidance. The strategic plan, for the period 2016-2020 consists of five objectives:

OBJECTIVE 1: Establishment and/or development of a national regulatory body in all Arab countries with high level of competencies and capabilities in line with the IAEA safety standards.

This objective will be achieved through:

- 1) Development and continuously improving the legislative framework in Arab countries and assisting in promulgation of national legislations and encouraging to joining the international conventions and treaties relevant to nuclear safety and security.
- 2) Strengthening the capabilities and human resources development of regulatory bodies
- 3) Establishing an active cooperation mechanism with international and regional organizations, and well established regulatory bodies.
- 4) Using the IAEA tools and methodologies of self-assessments of regulatory bodies such as SARCoN (Systematic Assessment of Regulatory Competence Needs) and the Integrated Regulatory Review Service (IRRS) for peer review of regulatory effectiveness and assess the national regulations against IAEA Safety standards.

OBJECTIVE 2: Harmonization of the national plans for emergency preparedness and response in line with international requirements and formation of an emergency response network to facilitate exchange of information and sharing of experience.

This objective will be achieved through:

- 1) Assist in the development of national EPR plans.
- 2) Improving the capabilities for early response by establishing national response teams.
- 3) Facilitating the development of regional cooperation agreements for the consolidation of emergency response capabilities: The ANNuR members will be assisted by the IAEA-IEC in strengthening the Arab region emergency preparedness and response framework.
- 4) Facilitating the harmonization of national plans with the international requirement: the IAEA will support and assist ANNuR member countries by conducting national reviews of their emergency preparedness and response arrangements and capabilities through advisory and EPREV missions.

ANNuR will support its member states in the development and implementation of safety and security infrastructures in line with the IAEA safety standards and security guidance. The strategic plan, for the period 2016-2020 consists of five objectives:

OBJECTIVE 3: Enhancing the capability of Member States to build and maintain competencies in management of radioactive sources and waste in line with the IAEA safety standards and security guidance.

This objective will be achieved through:

- 1) Assist in the development of technical capabilities for an efficient implementation of a sound radiation protection infrastructure.
- 2) Assist in establishing and developing national programmes for the control of radioactive sources.
- 3) Assist in Enhancing regulations for the safe and secure transport of radioactive sources.
- 4) Providing support in establishing a proper safety framework for the management of radioactive waste and the safe and secure disposal of radioactive sources.

OBJECTIVE 4: Ensuring safe and secure utilization of research reactors.

This objective will be achieved through:

- 1) Assisting in establishing an effectively independent regulatory body in countries operating or planning their first research reactor.
- 2) Assisting regulatory bodies in performing effective regulatory functions for research reactors including licensing and inspection programmes.
- 3) Supporting regulatory bodies to develop regulatory requirements for research reactors
- 4) Assisting Arab countries to conduct a periodic safety review of research reactor facilities addressing, among others, continued acceptability of the site, assessment of internal and external hazards, safety of the utilization programme, ageing management, operating experience feedback and emergency preparedness.

OBJECTIVE 5: Establishment of an efficient and effective network of human resources to ensure sustainable regional cooperation and to align national strategies for capacity building with IAEA safety standards and security guidance.

This objective will be achieved through:

- 1) Ensuring an efficient and effective human network to sustain regional cooperation and to align national strategies for capacity building with IAEA safety standards and security guidance
 - 2) Promoting the effective use of the knowledge network for sustainable sharing of knowledge, lessons learned and the continuous improvement of nuclear safety, security and radiation protection.
 - 3) Assist in developing sustainable training and education programmes including the establishment of capacity building centres.
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ACTION PLAN

OBJECTIVE 1

Establishment and/or development of a national regulatory body in all Arab countries with high level of competencies and capabilities in line with the IAEA safety standards.

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Development and continuously improving the legislative framework in Arab countries and assisting in promulgation of national legislations and encouraging to joining the international conventions and treaties relevant to nuclear safety and security.	<ul style="list-style-type: none"> » Expert Missions. » Regional workshops on the development of safety regulations and guides. 	<ul style="list-style-type: none"> • Training certificates. • Workshop reports. • Expert Missions reports 	<ul style="list-style-type: none"> • Improvement of the legislative framework in Arab countries. • More Arab countries joined the international conventions and treaties relevant to nuclear safety and security. 	<ul style="list-style-type: none"> • The number of SAT reports produced. • The number of participants and MS involved in activities. • The number of promulgated laws. • The number of qualified trainers. 	2016 -2020
Strengthening the capabilities and human resources development of regulatory bodies.	<ul style="list-style-type: none"> » Technical Meetings. » Training courses or workshops on main regulatory functions such as licensing of nuclear installations and conduct of regulatory review and assessment. » Peer review missions. » Training courses or workshops. » E-learning. 	<ul style="list-style-type: none"> • Technical meeting report. • Training certificate. • Peer review missions reports. • E-learning modules integrated. • Training course documentation. 	Significant improvement of regulatory infrastructure in more countries.	<ul style="list-style-type: none"> The numbers of countries having strengthened their RB infrastructure. The number of participants engaged in e-learning programs. 	2016-2018

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Establishing an active cooperation with international, regional organizations and well established regulatory bodies.	<ul style="list-style-type: none"> » Regular meetings with partners. » Annual ANNuR meeting. 	<ul style="list-style-type: none"> • MoUs • Meeting report 	Significant improvement of regulatory infrastructure in more countries.	<p>The numbers of countries having strengthened their RB infrastructure.</p> <p>The number of participants engaged in e-learning programs.</p>	2016 -2018
Using the IAEA tools and methodologies of self-assessments of regulatory bodies such as SARCoN (Systematic Assessment of Regulatory Competence Needs) and the Integrated Regulatory Review Service (IRRS) for peer review of regulatory effectiveness and assess the national regulations against IAEA Safety standards.	<ul style="list-style-type: none"> » Workshops on IAEA's tools and methodologies of self-assessment of regulatory bodies such as SARIS, IRIS. » Conducting Expert Missions to review national regulations. » Workshop on SARCON 	<ul style="list-style-type: none"> • Workshop reports. • Expert Mission reports. 	Significant improvement of regulatory infrastructure in more countries.	<ul style="list-style-type: none"> • The number of Workshop reports. • The number of countries involved. 	2016-2017



OBJECTIVE 2

Harmonization of the national plans for emergency preparedness and response in line with international requirements and formation of an emergency response network to facilitate exchange of information and sharing of experience

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Assist in the development of national EPR plans.	<ul style="list-style-type: none"> » Workshop on EPREV and EPRIMS. » EPREV missions to Arab countries. » Technical meetings. 	<ul style="list-style-type: none"> • Workshop reports. • EPREV mission reports. • Technical meeting reports. 	<ul style="list-style-type: none"> • National EPR plans developed. • EPREV expertise is acquired. 	<ul style="list-style-type: none"> • Number of expert teams capable to carry out EPREV missions. • Number of EPREV missions carried out. • Number of MS participating in workshops and drills. 	2016 -2020
Improving the capabilities for early response by establishing national rapid response teams.	<ul style="list-style-type: none"> » Workshops. » Coordination meetings. 	<ul style="list-style-type: none"> • Workshop reports. • Coordination meetings reports. 	<ul style="list-style-type: none"> • Arab response teams established. 	<ul style="list-style-type: none"> • Number of implemented drills • Number of EPR plans established/ reviewed/modified. • Number of response teams created or developed. • Number of cooperation agreements. 	2016-2017

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Facilitating the development of regional cooperation agreements for the consolidation of emergency response capabilities.	<ul style="list-style-type: none"> » Annual coordination meetings » Implementation of three EPR Drills in North Africa, Gulf states and Asian Arab Countries. 	<ul style="list-style-type: none"> • Coordination meetings reports. • Cooperation agreements. • EPR Drills reports. 	<ul style="list-style-type: none"> • Cooperation and harmonization enhanced. 	<ul style="list-style-type: none"> • Number of expert teams capable to carry out EPREV missions. • Number of EPREV missions carried out. • Number of MS participating in workshops and drills. 	2016 -2020
Facilitating the harmonization of national plans with the international requirement.	<ul style="list-style-type: none"> » Technical meetings for review and harmonization of EPR plans. 	<ul style="list-style-type: none"> • Technical meetings reports. 	<ul style="list-style-type: none"> • Mechanism of rapid flow of information developed. 	<ul style="list-style-type: none"> • Number of implemented drills • Number of EPR plans established/ reviewed/modified. • Number of response teams created or developed. • Number of cooperation agreements. 	2016-2020

OBJECTIVE 3

Enhancing the capability of Member States to build and maintain competence in management of radioactive sources and waste in line with the IAEA safety standards and security guidance.

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Assist in the development of national EPR plans.	<ul style="list-style-type: none"> » Workshops. » Technical meetings 	<ul style="list-style-type: none"> • Workshop reports. • Technical meetings reports. 	The capabilities of safe and secure use of radioactive sources in Arab countries are well improved including transport and waste management.	<ul style="list-style-type: none"> • Number of MS participating in workshops. • Number of workshops and training sessions implemented. 	2016 -2020
Assist in establishing and developing national programmes for the control of radioactive sources	<ul style="list-style-type: none"> » Workshops. » Seminars on promoting safety and security cultures. » On-line workshops and trainings. » Technical meetings 	<ul style="list-style-type: none"> • Workshop reports. • Technical meetings reports. • Events evaluation sheets. 		<ul style="list-style-type: none"> • Number activities conducted • Number of participants. 	2016-2020



Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Assist in Enhancing regulations for the safe and secure transport of radioactive sources.	<ul style="list-style-type: none"> » Spent fuel and high-level waste. » Workshops on the secure transport of radioactive material ranging from very low activity to very high activity such as spent fuel and high-level waste. » Workshop on Transport Safety Appraisal Services (TranSAS). 	<ul style="list-style-type: none"> • Self-assessment report. • Workshop reports. • Training certificate and documentation 	The capabilities of safe and secure use of radioactive sources in Arab countries are well improved including transport and waste management.	<ul style="list-style-type: none"> • Number of MS participating in workshops. • Number of workshops and training sessions implemented. 	2016 -2020
	Providing support in establishing a proper safety framework for the management of radioactive waste and the safe and secure disposal of radioactive sources.	<ul style="list-style-type: none"> » Workshops on the safe disposal of radioactive source and level waste. » Workshops on the secure disposal of radioactive source and level waste. » Coordination meetings. 		<ul style="list-style-type: none"> • Self-assessment report. • Workshop reports. • Coordination meetings reports. 	

OBJECTIVE 4

Ensuring safe and secure utilization of research reactors.

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Assisting in establishing an effectively independent regulatory body in countries operating or planning their first research reactor.	» Fact-finding and coaching missions.				
	» Workshops on competency framework for regulatory bodies for research reactors, and assessment of training needs and development of national plans to address identified actions; » Annual meeting IAEA/ANNUr on regulatory supervision, including peer-review of specific issue(s) as needed in a requesting Member State.	<ul style="list-style-type: none"> • Self-assessment report. • Mission report. • Workshop reports and evaluations. • Annual meeting reports 	<ul style="list-style-type: none"> • An independent regulatory body developed and well-staffed with required competencies in RR matters. • Well established licensing process and inspection programme. 	<ul style="list-style-type: none"> • Number of MS participating in workshops. • Number of workshops and training implemented. • Number of self-assessment and peer review missions. • Number activities conducted. • Number of participants. 	2016 -2017
Assisting regulatory bodies in performing effective regulatory functions for research reactors including licensing and inspection programmes.	» Workshops on licensing processes.			<ul style="list-style-type: none"> • Level of national involvement in licensing process. 	
	» Workshops on review and assessment of safety documents. » Technical meetings.	<ul style="list-style-type: none"> • Workshop reports. • Technical meeting reports. 		<ul style="list-style-type: none"> • Number of PSR conducted. 	2016-2020

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Supporting regulatory bodies to develop regulatory requirements for research reactors.	<ul style="list-style-type: none"> » Workshops on inspection programmes for all phases of research reactor. » Workshops on regulatory requirements and guidance of safety topics relevant to the different stages of RR lifetime. 	<ul style="list-style-type: none"> • Workshop reports. 	<ul style="list-style-type: none"> • An independent regulatory body developed and well- staffed with required competencies in RR matters. 	<ul style="list-style-type: none"> • Number of MS participating in workshops. • Number of workshops and training implemented. • Number of self-assessment and peer review missions. 	2016 -2020
Assisting Arab countries to conduct a periodic safety review of research reactor facilities addressing, among others, continued acceptability of the site, assessment of internal and external hazards, safety of the utilization programme, ageing management, operating experience feedback and emergency preparedness.	<ul style="list-style-type: none"> » Training courses. » Workshop on Periodic Safety Review. 	<ul style="list-style-type: none"> • Training certificate and documentation • Workshop reports. 	<ul style="list-style-type: none"> • Well established licensing process and inspection programme. 	<ul style="list-style-type: none"> • Number activities conducted. • Number of participants. • Level of national involvement in licensing process. • Number of PSR conducted. 	2016-2020

OBJECTIVE 5

Establishment of an efficient and effective network of human resources and a cyber-community to ensure sustainable regional cooperation and to align national strategies for capacity building with IAEA safety standards and security guidance.

Task	Activities/ Input	Deliverables/ Output	Outcome	Performance Indicators	Time Frame
Ensuring an efficient and effective human network to sustain regional cooperation and to align national strategies for capacity building with IAEA safety standards and security guidance.	<ul style="list-style-type: none"> » Workshops on SharePoint knowledge networks. » Consultancies. » Update, upgrade and maintenance of ANNuR website. 	<ul style="list-style-type: none"> • Workshop report. • Consultancy report. • Documentation. 		<ul style="list-style-type: none"> • Number of documents uploaded on the website. • Number of website visitors. • Number of MS participating in workshops. 	2016-2017
Promoting the effective use of the knowledge network for sustainable sharing of knowledge, lessons learned and the continuous improvement of nuclear safety, security and radiation protection.	<ul style="list-style-type: none"> » Conducting prototype interactive online meeting. » Video conferences. » E-learning. » Online course. 		<ul style="list-style-type: none"> • Established Strong human network and cyber community. 	<ul style="list-style-type: none"> • Number of workshops and trainings implemented. • Updated list of experts. • Number of mission implemented. 	2016-2020
Assist in developing sustainable training and education programmes including the establishment of capacity building centres.	<ul style="list-style-type: none"> » Develop and update Arab database by WTG coordinators. 	<ul style="list-style-type: none"> • Updated list of Arab experts. 		<ul style="list-style-type: none"> • Number of Thematic Capacity building centres established. 	2016-2020

ACKNOWLEDGMENT

The ANNuR expert group members listed below would like to express their great appreciation to IAEA (GNSSN) and AAEA for their support to conduct this consultancy meeting for the development of ANNuR strategic plan for the period 2016-2020, which we hope will fulfill the needs of ANNuR member states.

Great appreciation is extended to the Kingdom of Morocco for hosting this consultancy meeting.

Experts:

- 1- Mr. Abdelmajid Mahjoub
- 2- Mr. Abdellaziz Hajjani
- 3- Mr. Hany Khedr
- 4- Mr. Daw Mosbah

NOTES:

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