

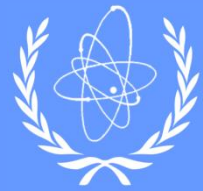


GNSSN

IAEA Strategy for E&T in Nuclear Installation Safety

*Maria Josefa Moracho Ramirez
IAEA/Nuclear Safety Department
NSNI Safety Officer and Training Coordinator*

03 December 2013



Content

IAEA Global Nuclear Safety Framework

IAEA Integrated Vision, Common Strategy

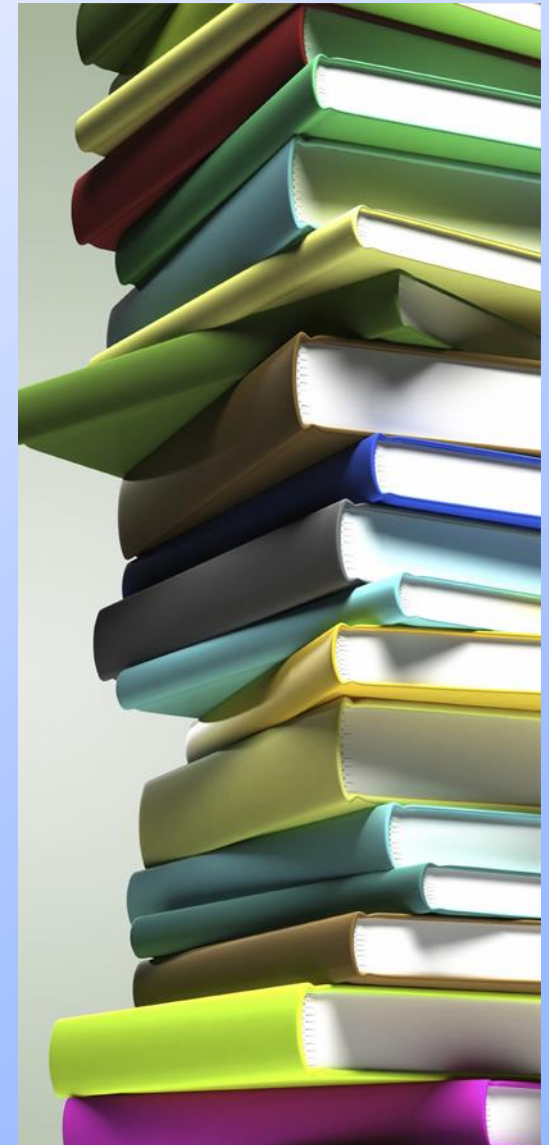
Strategic Approach to E& T in Nuclear Safety 2013-2020:

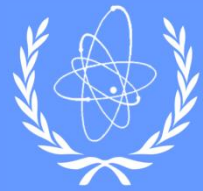
Main elements, Process, Knowledge framework, Mechanisms for IAEA support to Building Capacity through E&T, Advisory Services, and Networking

SARCoN, Safety Report, ETRES,

Regional, International Cooperation, Milestones

IAEA web page for E&T





IAEA Global Nuclear Safety Framework

Legal Instruments, Conventions, Code of conduct

**IAEA guidance:
nuclear safety
standards,
security
guidelines
nuclear energy
series**

**Education & Training
based on IAEA expert
knowledge, guidance
and standards**

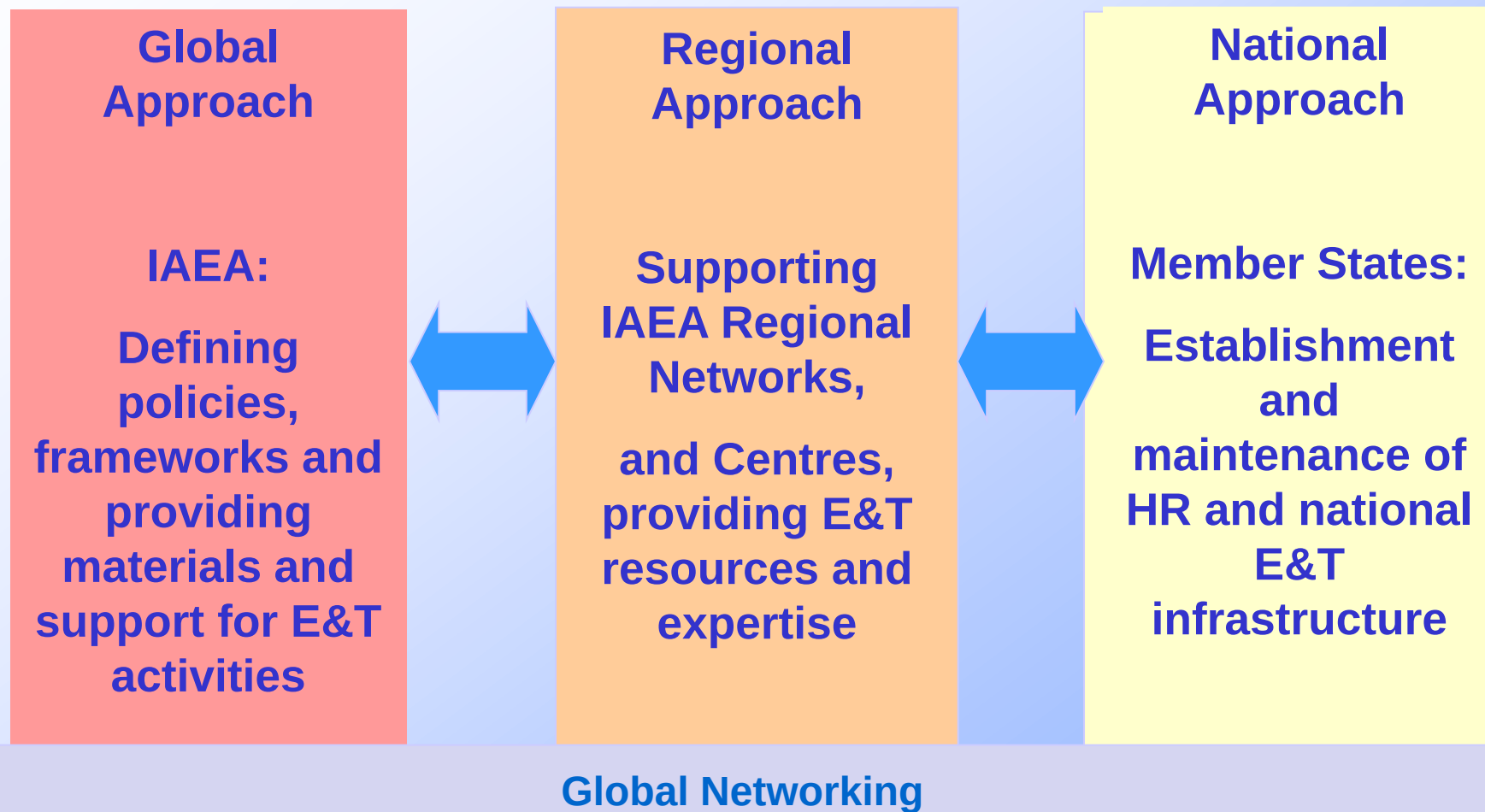
**Review and
advisory
services to
appraise state of
implementation
based on IAEA
guidance,**

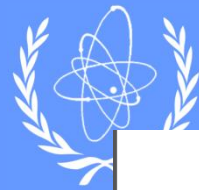
**Operational experience, national nuclear and safety
infrastructures, legal systems**



Integrated Vision, Common Strategy

Education and Training complementary approaches





Strategic Approach to E& T in Nuclear Safety

2013-2020



IAEA

Atoms for Peace

الوكالة الدولية للطاقة الذرية
国际原子能机构
International Atomic Energy Agency
Agence internationale de l'énergie atomique
Международное агентство по атомной энергии
Organismo Internacional de Energía Atómica

Vienna International Centre, PO Box 100, 1400 Vienna, Austria
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Email: Official.Mails@iaea.org • Internet: <http://www.iaea.org>

In reply please refer to:
Dial directly to extension: (+431) 2600-22667

2013/Note 9

NOTE BY THE SECRETARIAT

Strategic Approach to Education and Training in Nuclear Safety 2013–2020

An integrated strategy for education and training (Note by the Secretariat, 2001/Note 19) in nuclear safety was developed by the Secretariat and an advisory group of Member States in 2001. In resolution GC(45)/RES/10, the General Conference urged the Secretariat to implement this strategy.

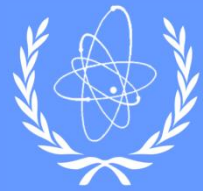
In 2012, the Secretariat conducted a review of achievements on education and training in nuclear safety over the period 2001–2012 and developed a strategic approach to education and training in nuclear safety for the period 2013–2020.

The present “Strategic Approach to Education and Training in Nuclear Safety, 2013–2020” is in line with and supports the IAEA’s commitment to achieve the highest standards of nuclear safety, based on the achievements on education and training in nuclear safety achieved to date.

presented to the Board of
implementing the 2001 strategy
Nuclear Safety Action
developed in
Committee of regulators

The new Strategic Approach was noted by the BoG March 2013

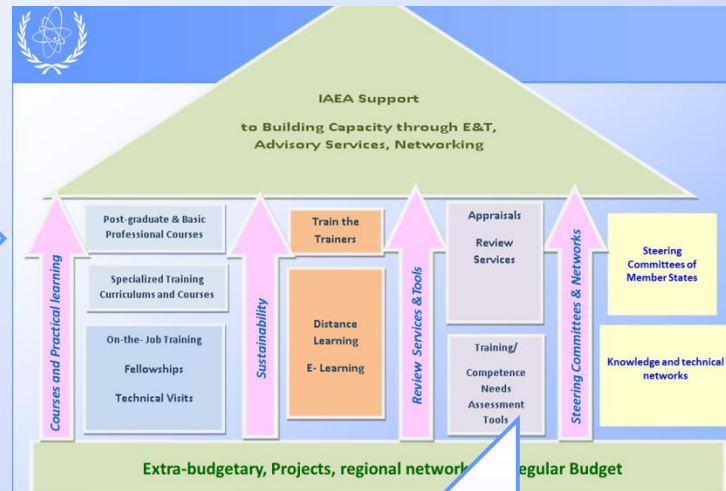
<http://www-ns.iaea.org/downloads/ni/training/strategy2013-2020.pdf>



Main components of the strategy

National Strategy for CB through E&T

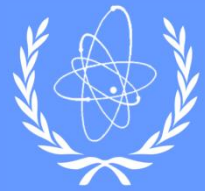
Capacity Building Mechanisms



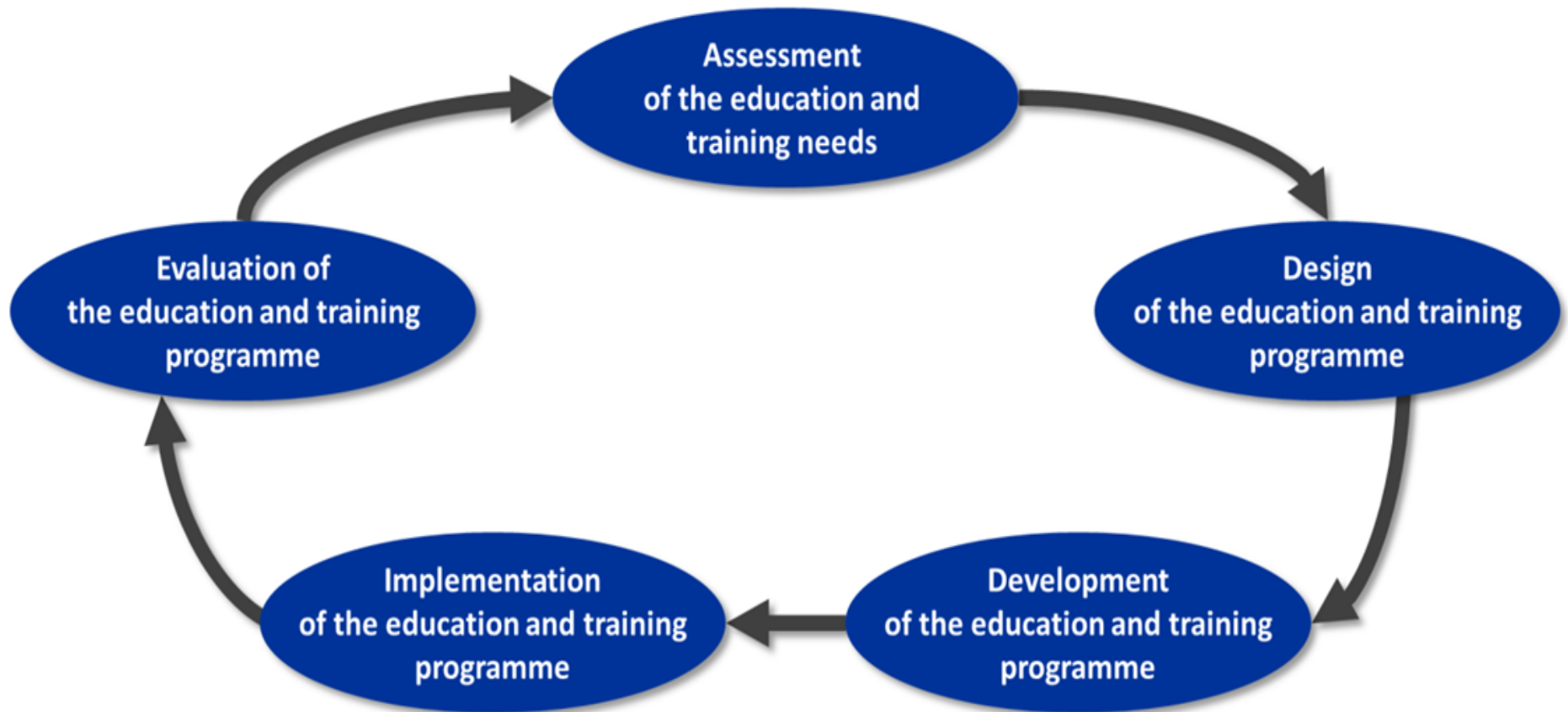
Regional Cooperation



Management Systems, Competence & Knowledge Management

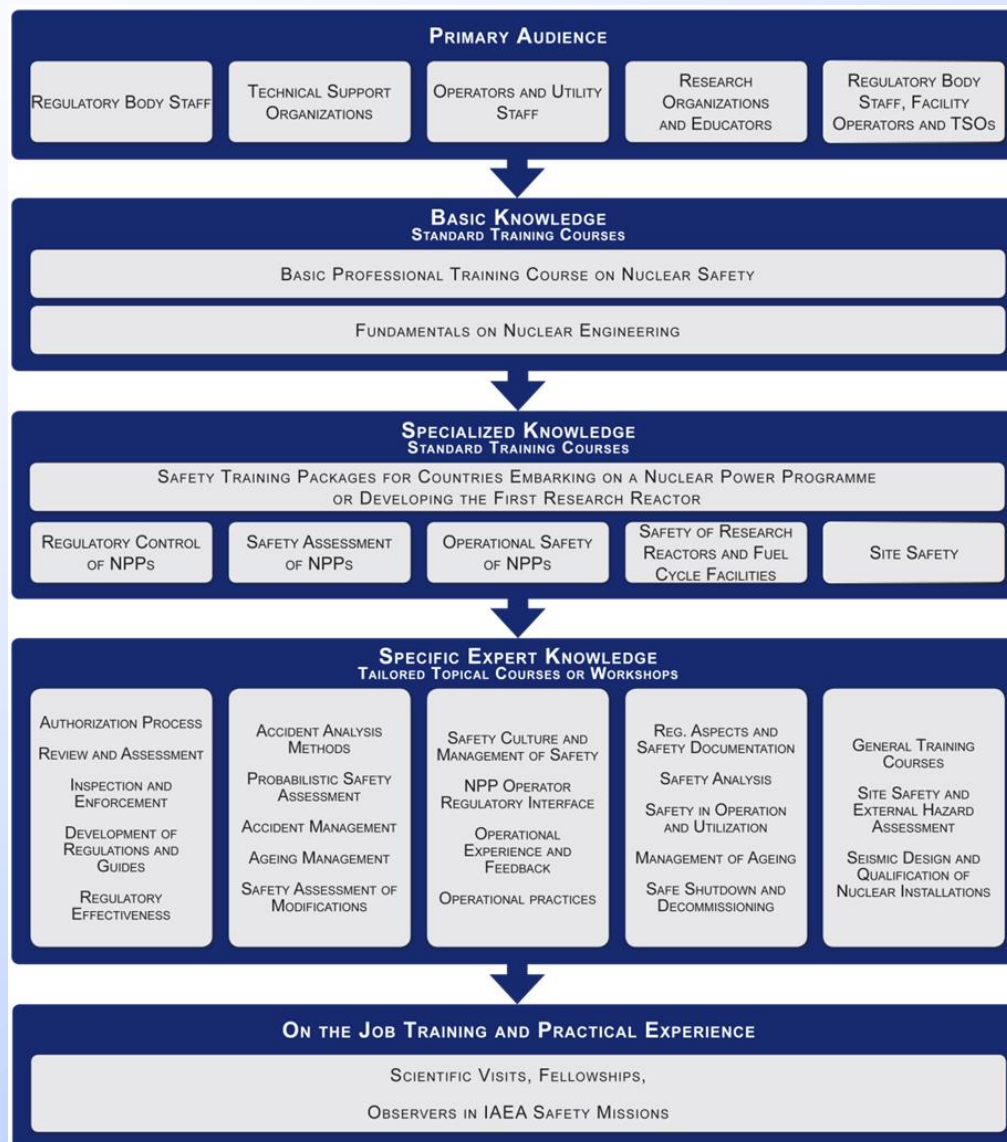


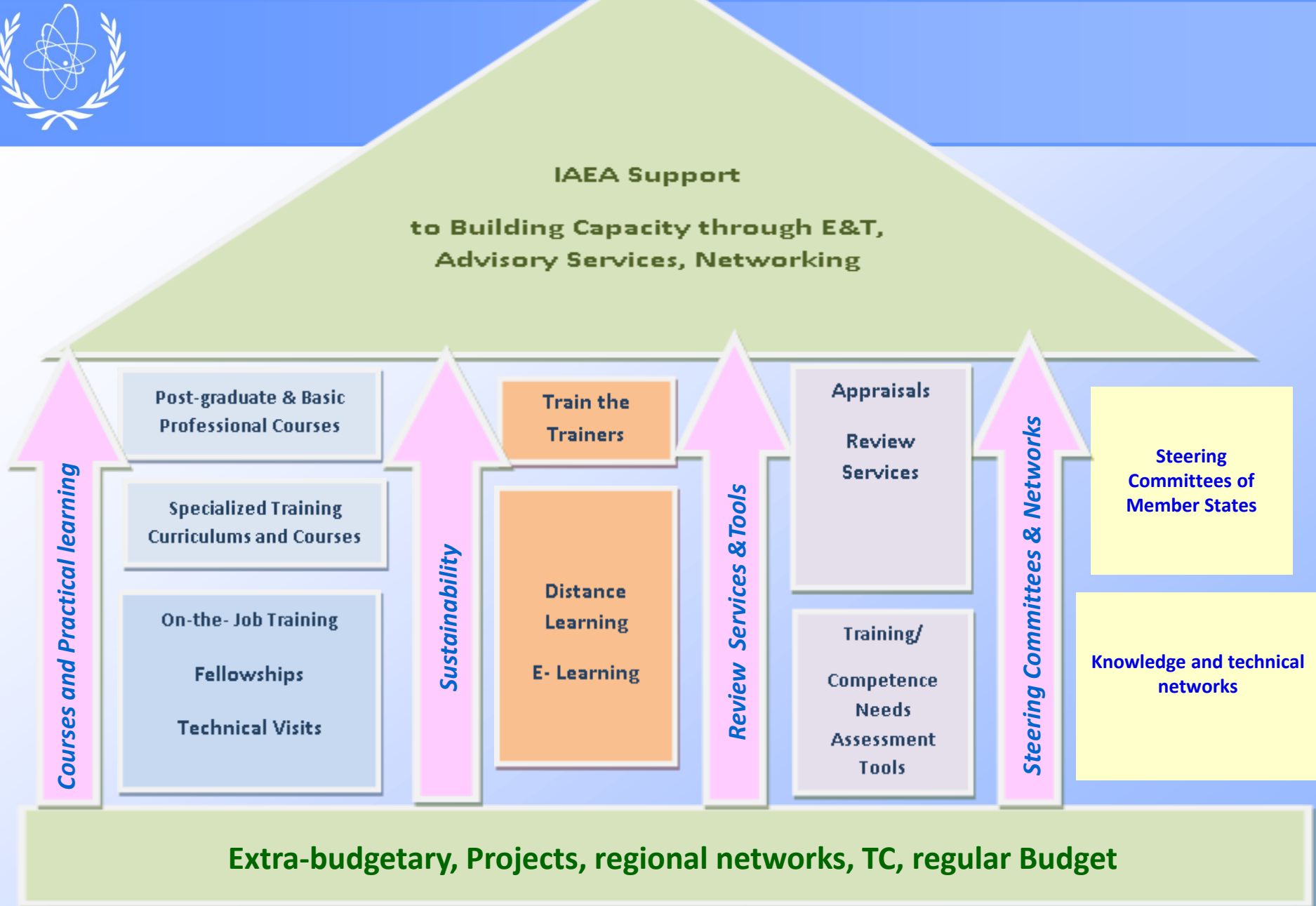
Systematic Process

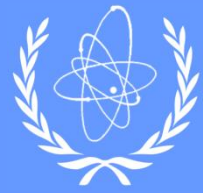




Knowledge Framework







BPTC

Steering
Committee of
Training for
Regulators
for Nuclear
installations

New Video
lectures,
updated web,
e-learning

SARCON

ANSN/ETTG,
ETRES,
other

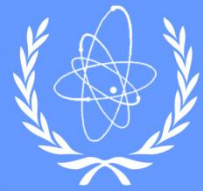


SARCoN developed by the IAEA and **Regulators' Steering Committee on Competence of Human Resources** for Installation Safety

SARCoN guidelines are a step based procedure to systematically analyse the competences needs for a regulatory body with a focus on nuclear Installations safety

SARCoN use a Competency model for Regulators based on TECDOC 1254, now revised by a **draft safety report “Managing Regulatory Competence”**

It has a software tool and associated questionnaires with **more than one hundred regulatory competences**



SARCoN Tool experience of use

Validated through more than 4 TMs

Questionnaires and guidelines enhanced through 4 meetings of the Steering Committee

The EC recommended the use of SARCoN as a condition for regulatory training proposals to be financed by the EC

App
the
imp

Ibero American Foro of
Regulators
New Project on SARCON and
Regulatory Job Profiles

over

The questionnaires are a comprehensive compilation of competences as a shopping list but **must be adapted to the particular regulator, nuclear programme, cultural/regulatory approach**



Safety Report

“Managing Regulatory Competence”

SAFETY REPORTS SERIES No. XX-RR/march15h

MANAGING THE COMPETENCE OF A REGULATORY BODY'S STAFF

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 2012

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APPENDIX I: SYSTEMATIC APPROACH TO TRAINING (SAT)

- AI.1 Analysis
- AI.2 Design
- AI.3 Development
- AI.4 Implementation
- AI.5 Evaluation

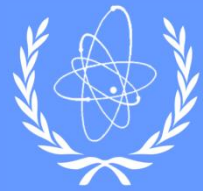
APPENDIX II: SELECTING OPTIONS AND METHODS OF TRAINING

- AI.1 Classroom-based training
- AI.2 Distance learning
- AI.3 On the job training
- AI.4 Structured self-study
- AI.5 Coaching and Mentoring

APPENDIX III: THE COMPETENCE OF REGULATORY BODIES IN EMBARKING COUNTRIES

AI.1 IAEA approach for developing regulatory infrastructure

New Appendix for
NPP
newcommer
countries



Concept





Post-Fukushima Nuclear Safety Action Plan

Guidance and Methodology for Assessment of Capacity Building in Member States with Nuclear Power Programmes and those Planning to Embark on such a Programme

[Pick the date]

A. Guidance and Methodology for Assessment of Capacity Building in the Member States with Nuclear Power Programmes and those Planning to Embark on such a Programme

A.1. Introduction

The accident at TEPCO's Fukushima Daiichi Nuclear Power Plant has sharply enhanced focus on the need to develop, strengthen, maintain and implement the capacity building **programmes** of Member States (MS) with nuclear power **programmes** and those planning to embark on such a **programme**. This was highlighted at the Ministerial Conference on Nuclear Safety organized by IAEA from 21-24 June 2011 after the Fukushima accident. The Ministerial Declaration adopted by the Conference requested the Director General of the IAEA to prepare a draft Action Plan for Nuclear Safety, building on the conclusions and recommendations of the working sessions of the Ministerial Conference, the Declaration and the expertise and knowledge

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The methodology proposed in this document is a self-assessment process which Member States with a nuclear power **programme** and those planning to embark on such a **programme** may use to assess their present arrangements and identify actual or potential gaps in their capacity building endeavors. Member States can then develop an action plan to close the gaps identified through the self-assessment. Using this methodology and sharing their results with the **Agency**, enable MS to benchmark their activities with each other and will better enable the Agency to prioritize its capacity building support to Member States. It is important to note that the Agency does not make any distinction in the need for or content of capacity building activities for the Member States with nuclear power **programmes** and those planning to embark on such a **programme**. However, it is recognized that significant capacity building efforts have already been expended with new entrant Member States in recent years. The main distinction will be that each Member State will have different capacity building needs, depending on the status of their nuclear power **programme**.

A.1.2. Objectives

The objectives of this document are: (1) to define the essential elements of capacity building; (2) to provide consistent guidance and methodologies for the Member States to assess their capacity building



Methodology

Educational Institutions		What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
Area I Reso Devel Ar Know Manage Netw Are Educa Trai	TSO	What is needed?	What is available and adequate to meet the	What is not available or needs improvement in	How can the deficiencies be remedied?	Module II
	Regulator	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
	Operator	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
	Area I Reso Devel	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
	Ar Know Manage Netw	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	Module I
	Are Educa Trai	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
	Government/NE PIO	What is needed?	What is available and adequate to meet the needs?	What is not available or needs improvement in order to meet	How can the deficiencies be remedied?	
	Area I Reso Develc					
	Are Know Manager Netw	Area I Human Resources Development				
	Are Educat Trai	Area II Knowledge Management and Networks				
		Area III Education and Training				



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Advance Reference Material (ARM) to be provided to

APPENDIX B

GUIDELINES FOR A GOVERNMENT LEVEL SELF-ASSESSMENT OF THE SYSTEM FOR EDUCATION AND TRAINING IN NUCLEAR SAFETY

A self-assessment of the national system for education and training should be carried out by the governmental body having responsibility for the power programme, in cooperation with the body having responsibility for human resources development. This self-assessment should consider the utilization of nuclear energy in all of its forms, as well as the national future utilization. The principal focus should be on current and future resources and the arrangements needed to develop these resources. Imports include the national laws, policies, regulations, and strategies related to organizations involved, assignment of responsibilities, and the needs for go and support. It is important that this self-assessment be conducted at the go considering the national requirements and the whole system for meeting the education and training in nuclear safety. Guidelines for self-assess organizations of the system are provided in Appendices C through F.

Area 1: Basis and Framework for Nuclear Safety Education and Training

At a national level, the basis and framework for nuclear safety education and training lies in the current laws, regulations, and policies governing the nuclear power programme, along with the national vision and plans for future utilization of nuclear energy in all of its forms. In addition, the basis and framework includes the laws, regulations, and policies governing the national educational system.

Question 1: What is needed?

Given the current situation and the national vision and plans for future utilization of nuclear energy, what human resources are needed and what laws, regulations, policies, and institutional arrangements are needed to provide the required education and training capabilities?

To know which laws and regulations are needed, use the doc SSG-16 "Establishing the infrastructure..." in the appropriate phase, phase 2 or phase 3.

Consider:

- The current national framework of laws, regulations and policies for education and training in nuclear science and engineering generally, and nuclear safety in particular.
- The national vision and plans for utilization of nuclear energy.
- The needs for new legal and governmental infrastructure, laws, regulations,

Number	Document/material	Please ✓
	Copy of the in-house training programme for the regulatory body, operating organizations, and TSOs, including: • Course title and short description;	

These needs established, it should lead directly to address the remaining three questions

Question 2: What is available and adequate to meet the needs?

Consider:

→ trust to

Pilot mission in Indonesia 26-29 June

- whether new laws or regulations are needed,
- whether new or revised policies are required, or
- are other measures needed to provide the required basis and framework for education and training in nuclear safety.

Area 2: Competencies and Training in Nuclear Safety

Question 1: What is needed?

Consider, at a national level, the required competences -Knowledge, Skills and Attitudes, 'KSAs'- (including the level of competence -High, Medium or Low- in that competence or skill) as described in and the numbers of people having these skills at that level who are needed to staff government organizations, academic institutions and professional training organizations, the regulatory body, and operating organizations, in light of the current situation and the national vision and plans.

Question 2: What is available and adequate to meet the needs?

Consider the current capability of the education and training system to produce people with the required skills in the required numbers. Consider also the means available at a national level to attract new personnel into the field of nuclear safety, train them and retain them.

[Previ](#)



Regional, International Cooperation, Milestones

D.2. Key Milestones

The 2013–2020 strategic approach is a continuation of the activities initiated in the previous strategic approach, with additional activities included. Implementation of this strategic approach can be divided into three phases (see Table 1).

TABLE 1: THE THREE PHASE APPROACH

	Phase I	Phase II	Phase III
	Preparation	Promotion	Implementation
Activities	Complete the development of tools and guidance for capacity building through education and training in nuclear safety	Dissemination of tools and guidance at regional level and among Member States	Development and implementation of national strategies in Member States
Major role*	Secretariat	Agency, regional and knowledge networks, RTCs	Member States

* The Secretariat, RTCs, collaborating centres and training centres in Member States will all be involved in specific tasks as appropriate.



IAEA Main Training Page

<http://www.iaea.org/Publications/Training/index.html>

The screenshot shows the IAEA.org website interface. At the top, there's a navigation bar with links like 'About IAEA', 'Our Work', 'News Centre', 'Publications', and 'Data Centre'. Below this, a sidebar on the left lists various categories under 'IAEA Publications'. The main content area is titled 'Training Resources and Materials' and includes a paragraph about the importance of sustainable education and training in the nuclear field. Below this, there are several sections: 'Main Training and Information Pages' with icons for Education and Training in Nuclear Safety, Education and Training in Nuclear Installation Safety, Radiation, Transport and Waste Safety, Managing Human Resources in the Nuclear Field, and Analysis for Sustainable Energy Development; 'Training Materials' with icons for Radiation Protection of Patients - Free Material, Nuclear Installation Safety Training Support, Training Packages for Specialized Events, NPES Publications and Documents, and Nuclear Knowledge Management - Main Activities; and 'Training Services and Tools' with icons for Training Tools and Networking, Planning & Economic Studies Section, Electronic Catalogue on Nuclear Training & Engineering (ENTRAC), Radioactive Waste Management Information, Nuclear Power Engineering Section - Recent Achievements, Nuclear Energy Knowledge Resources, TC programme for Fellows of Scientific Visitors, and TC Programme for Training Course Participants.

Training Courses and Fellowships



E-learning and Online Courses



Links to IAEA Support - Regional Cooperation Networks



Glossaries

- Safeguards Glossary [pdf]
- Radioactive Waste Management Glossary [pdf]
- Nuclear Safety Glossary
- Technical Cooperation Terminology

Legend

Legend	
	Department of Nuclear Safety and Security
	Department of Nuclear Energy
	Department of Science and Application
	Department of Technical Cooperation
	Office of Legal Affairs
	Registration is required

Interdepartmental
Training Page:

Categories:

- Main Training and Information Pages
- Training Materials
- Training Services and Tools
- Training Courses and Fellowships
- E-learning and Online Courses
- Links to IAEA Support - Regional Cooperation Networks

03 December 2013

Thank you for your attention

<http://www-ns.iaea.org/training/ni/materials.asp?s=100&l=75>



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International Atomic Energy Agency

Atoms For Peace



This activity is conducted with
funding by the European Union



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