



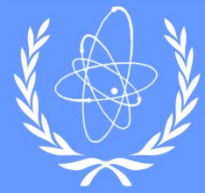
IAEA Strategic Approach to E&T in Nuclear Safety 2013-2020

International Conference on Human Resources Development for
Nuclear Power Programmes: Building and Sustaining Capacity
(Strategies for Education and Training, Networking and
Knowledge Management) IAEA CN-215

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Division of Nuclear Installation Safety,
Regulatory Activities Section*

April 2014



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**

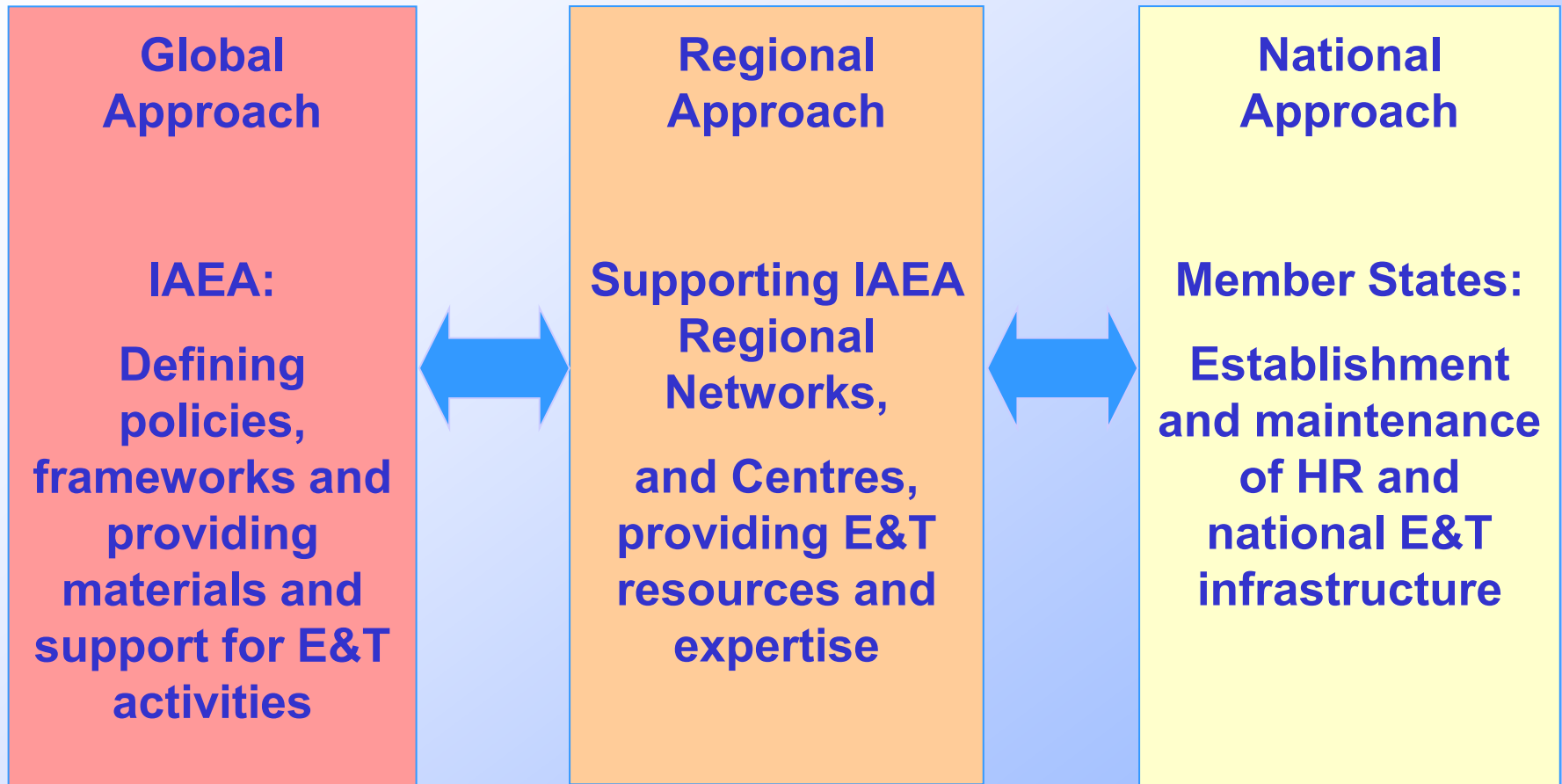
**Review and
advisory
services to
appraise state of
implementation
based on IAEA
guidance**

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

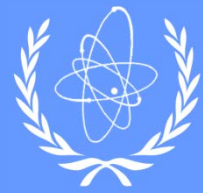


Integrated Vision, Common Strategy

Education and Training Complementary Approaches



Global Networking



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 Energia Atómica

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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.

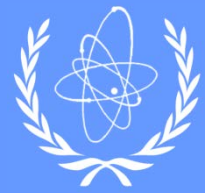
In 2012, the Secretariat conducted a review of achievements on education and training in nuclear safety over the period 2001–2012 and developed a strategic approach to education and training in nuclear safety for the period 2013–2020.

The present "Strategic Approach to Education and Training in Nuclear Safety 2013–2020" with and supports the achievements of the previous strategy.

presented to the Board of
Implementing the 2001 strategy
ing Nuclear Safety Action
was developed in
ing Committee of regulators

The new Strategic Approach was noted by the BoG March 2013

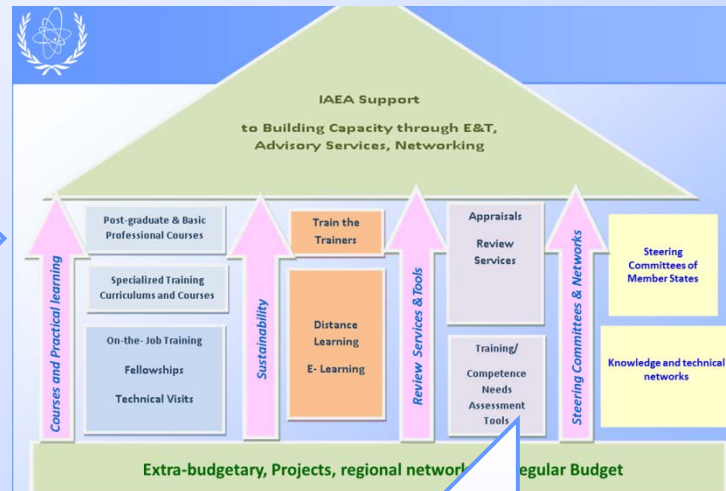
<http://www-ns.iaea.org/downloads/ni/training/strategy2013-2020.pdf>



Main components of the strategy

National Strategy for CB through E&T

Capacity Building Mechanisms

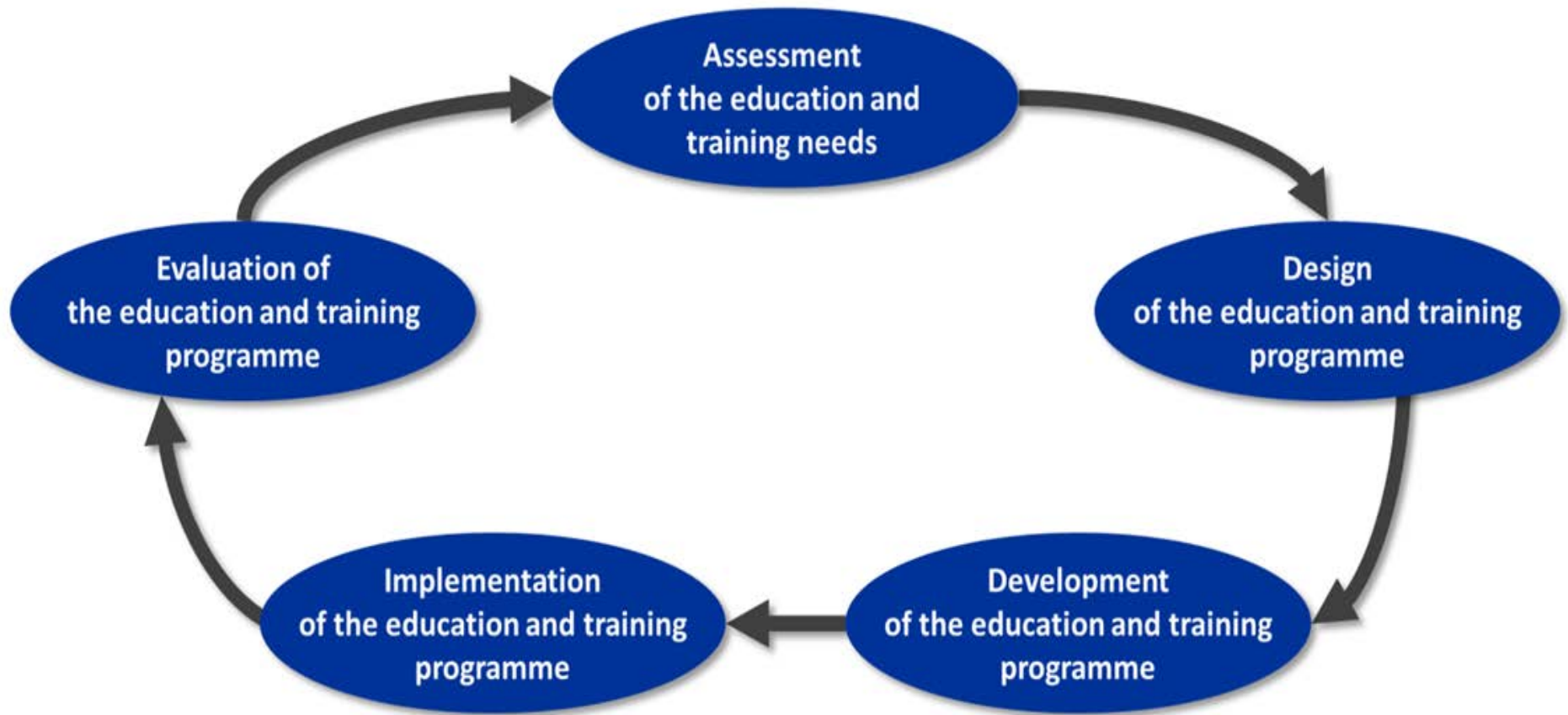


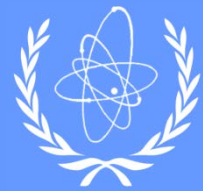
Regional Cooperation

Management Systems, Competence & Knowledge Management

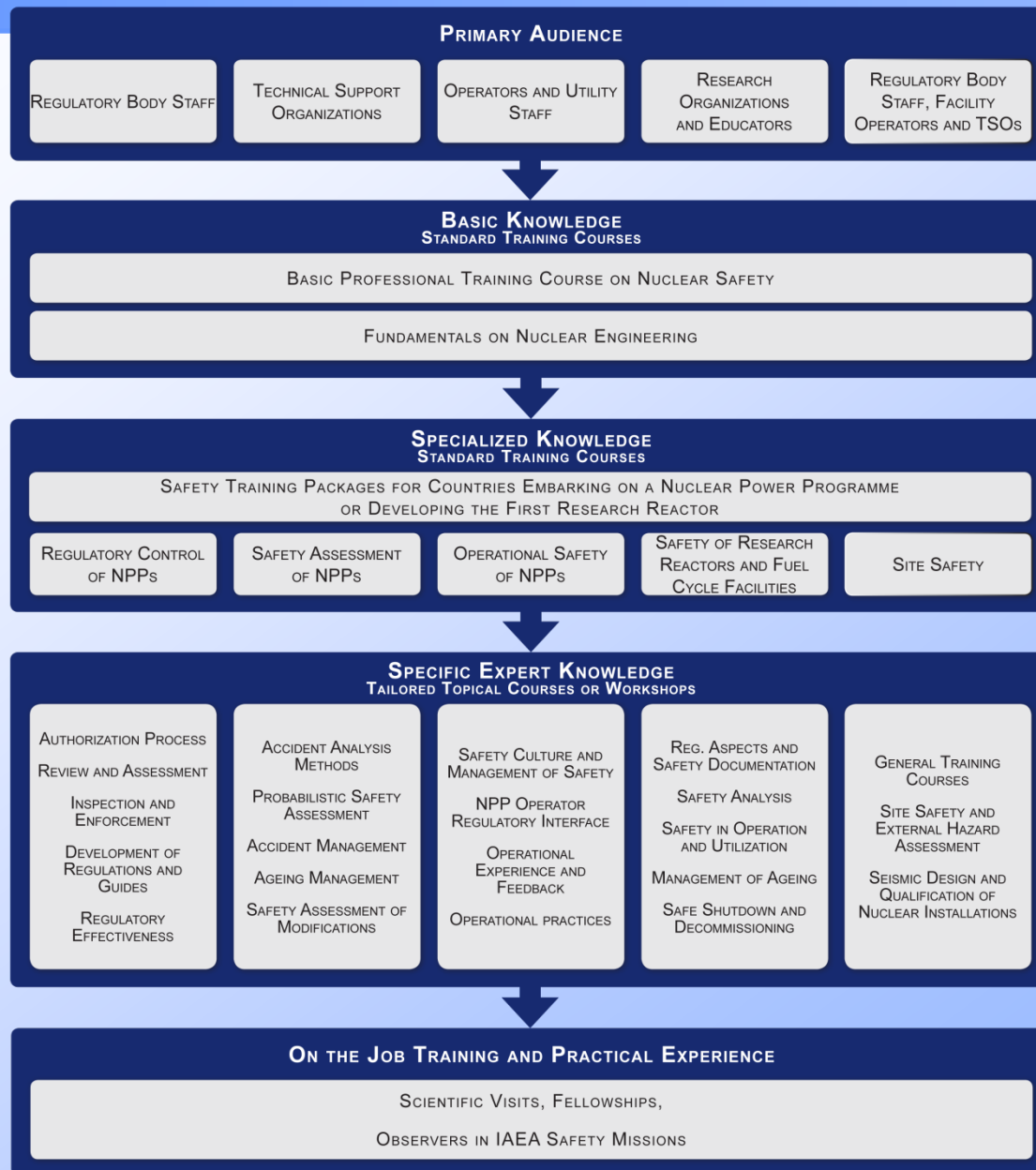


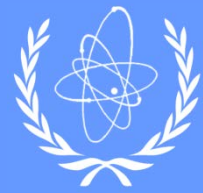
Systematic Process



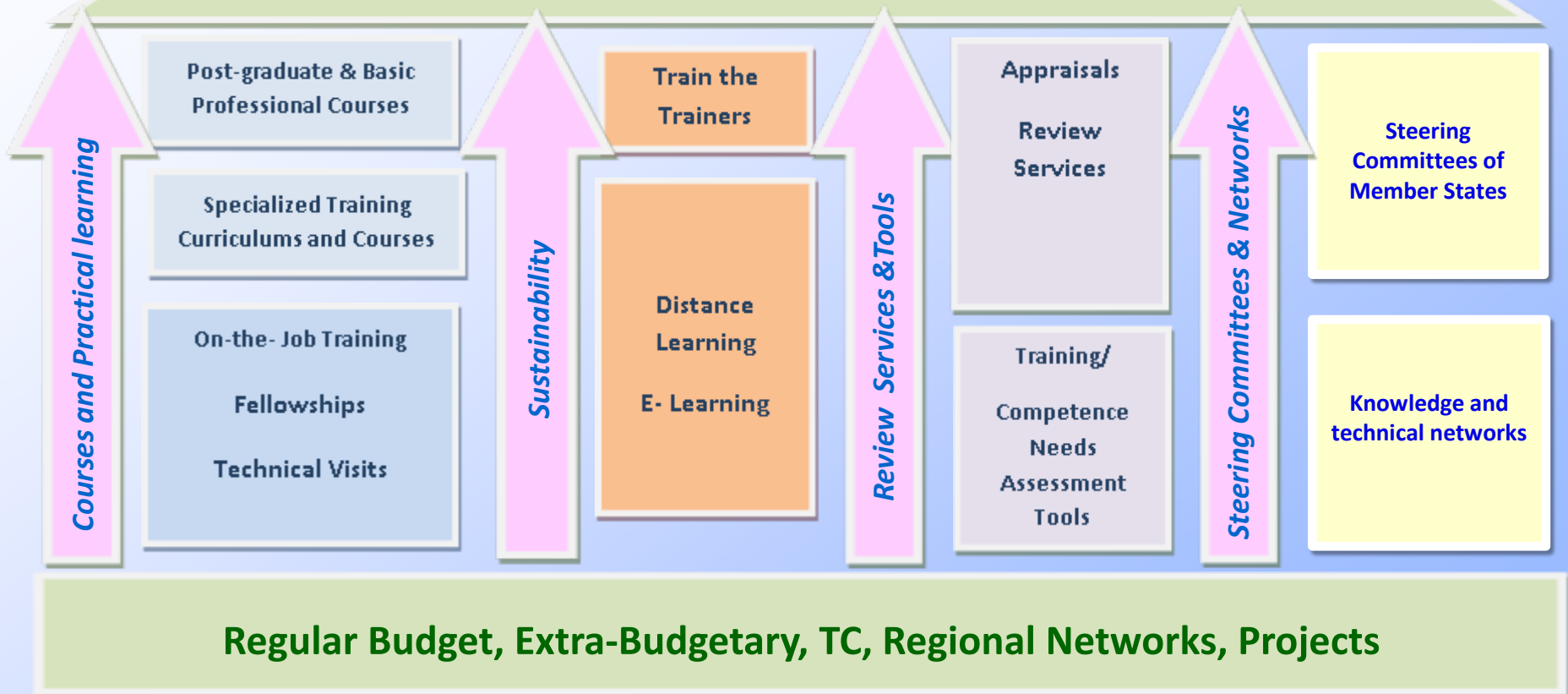


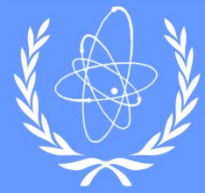
Knowledge Framework





**IAEA Support
to Building Capacity through E&T,
Advisory Services, Networking**





BPTC
Basic
Professional
Training
Course

Steering Committee on
Competence of
Human Resources
for
Regulatory Bodies

New Video lectures,
updated web,
e-learning

SARCON

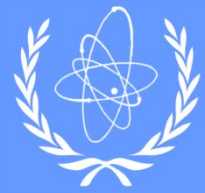
ANSN/ETTG,
ETRES,
other

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 uses a Competency model for Regulators based on
TECDOC 1254, now revised by **Safety Report Series No.**
79 “Managing the Competence of the Regulatory Body

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 Technical Meetings

Questionnaires and guidelines enhanced through 4 meetings of the Steering Committee

Applied in more than 18 countries, all over the world, continuous feedback and improvement

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

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

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 Series No.79 “Managing the Competence of the Regulatory Body”

Integrates old
TECDOC 1254 and
SARCON

Broader Scope:
Facilities and Activities

SAFETY REPORTS SERIES No. 79

FOREWORD

In 2001, IAEA published TECDOC 1254 which examined the way in which the recognized functions of a regulatory body for nuclear facilities results in competence needs. Using the Systematic Approach to Training (SAT), this TECDOC provided a framework for regulatory bodies for managing training and developing and maintaining its competence. It has been used successfully by many regulators.

IAEA has also introduced a methodology and a tool ‘Guidelines for the Systematic Assessment of the Competence Needs of the Staff of a Regulatory Body’ (SARCON) which provide practical guidance on analysing the training and development needs of a regulatory body and, through a gap analysis, guidance on establishing competence needs and meeting these needs. The guidelines describe the methodology and assessment tool provided by IAEA.

In 2009 the IAEA established a Steering Committee (supported by a Bureau) whose mission is “To advise the IAEA on how it could best assist Member States to develop suitable competence management systems for their Regulatory Bodies”. The Committee recommended the development of a Safety Report on managing staff competence as an integral part of a regulatory body’s management system.

This Safety Report was developed in response to this request. It supersedes TECDOC 1254 and broadens its application to regulatory bodies for all facilities and activities, and builds upon the experience gained through the application of this TECDOC and SARCON and the feedback received from Member States.

The Safety Report applies to the management of adequate competence as needs change, and as such is equally applicable to the needs of States ‘embarking’ on a nuclear power programme. In an appendix it deals with the special case of building up the competence of regulatory bodies as part of the overall process of establishing an ‘embarking’ State’s regulatory system.

The IAEA would like to express its appreciation to all of the experts who contributed to the development and review of this report. The IAEA officers responsible for this publication were M. J. Monahan-Ramirez of the Division of Nuclear Installation Safety and H. Sultan of the Division of Radiation, Transport and Waste Safety.

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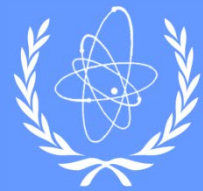
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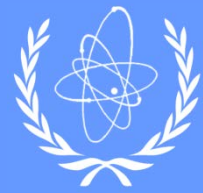
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New Appendix
for NPP
Newcomer
Countries



Concept



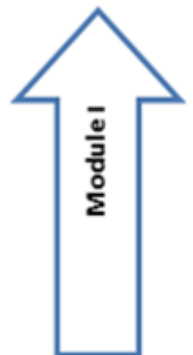


Guidance and Methodology

Rev2

Guidance and Methodology Assessment Building with Program Planning such

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 Tra	TSO	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?
	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?
	Government/NEPIO	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 Tra	Area I Reso Devel				
	Area I Human Resources Development				
	Area II Knowledge Management and Networks				
	Area III Education and Training				



A. Guidance and Methodology Assessment Building in the Member States and those Planning to

A.1. Introduction

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The Member requested following provided.

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APPENDIX A ADVANCE REFERENCE MATERIAL

Advance Reference Material (ARM) to be provided to the Team Coordinator at least two months prior to the mission

Number	Document/material	Please
5	Copy of the in-house training programme for the regulatory body, operating organizations, and TSOs, including: <ul style="list-style-type: none">• Course title and short description;• Course duration• Number of faculty and students.	

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 current utilization of nuclear energy in all of its forms, as well as the national vision for future utilization. The principal focus should be on current and future resources and the arrangements needed to develop these resources. Important 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-assessment 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,

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:

- 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.

Pilot mission in Indonesia
26-29 June



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

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IAEA Publications

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Education & Training

Training Resources and Materials

The establishment of sustainable education and training programmes is fundamental for the safe, secure and efficient development of the nuclear field. The IAEA offers a wide spectrum of activities in support of education, training, human resource development and capacity building including interregional, regional and national training courses and workshops; assist visits and review services; mentoring programmes; networks of managers and specialists for sharing good practices; publications that accumulate best international practices; supply of training materials and training tools; and internship programmes for the younger generations.

Main Training and Information Pages

- 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
- Analysis for Sustainable Energy Development
- Participating in the IAEA-TC Programme

Training Materials

- Radiation Protection of Patients - Free Material
- Nuclear Installation Safety Training Support
- Training Packages for Specialized Events
- NPES Publications and Documents
- Nuclear Knowledge Management - Main Activities
- Handbook on Nuclear Law

Training Services and Tools

- 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
- TC Programme for Training Course Participants

Training Courses and Fellowships

- Training Events Calendar
- Promoting Education and Training
- Radioactive Waste Management Training
- Training in Emergency Preparedness and Response
- Nuclear Security - Human Resource Development
- Nuclear Power Plant Simulators for Education
- Nuclear Power - Technology Training
- Networks of Centres of Excellence
- Technical Cooperation: Africa
- Technical Cooperation: Europe
- Technical Cooperation: Latin America
- InTouch System
- Selbendorf Labs - Training
- Selbendorf Labs - Chemistry Unit - Training
- Selbendorf Labs - Agrochemicals Unit - Training
- Joint FAO/IAEA - Nuclear Techniques in Food & Agriculture
- Nuclear Medicine - Meetings
- Radiation Oncology Physics Handbook
- Nutritional and Health-Related Environ. Studies
- Nuclear Data Section - IAEA/TCF Thesaurus Workshops
- Marine Environment Laboratories - Training Courses
- Fellowships in the Office of Legal Affairs
- Internet School of Nuclear Law - 2 Week Introductory Course

E-learning and Online Courses

- Centre for Advanced Safety Assessment Tools (CASAT)
- Web Support Expert Services for Energy Systems Analysis
- Atutor® - Learning Content Management System
- FAO / IAEA Training & Reference Centre
- Distance Learning Course in Radiation Oncology
- Nuclear Law Test

Links to IAEA Support - Regional Cooperation Networks

- Asian Nuclear Safety Network
- World Nuclear University
- AFRA Projects
- ARASIA Projects
- ARCAL Projects
- RCA Projects

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

Thank you for your attention

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



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Atoms For Peace

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