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


Maria Josefa Moracho Ramirez
Safety Officer and Training Coordinator
Department of Nuclear Safety and Security,
Division of Nuclear Installation Safety,
Regulatory Activities Section

April 2014
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
Global Approach

IAEA:
Defining policies, frameworks and providing materials and support for E&T activities

Regional Approach

Supporting IAEA Regional Networks, and Centres, providing E&T resources and expertise

National Approach

Member States:
Establishment and maintenance of HR and national E&T infrastructure

Global Networking
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” was noted by the Board of Governors (BoG) in March 2013.

Main components of the strategy

National Strategy for CB through E&T

Capacity Building Mechanisms

Regional Cooperation

Management Systems, Competence & Knowledge Management

April 2013

GNSSN
Systematic Process

1. Assessment of the education and training needs
2. Design of the education and training programme
3. Development of the education and training programme
4. Implementation of the education and training programme
5. Evaluation of the education and training programme

The process is cyclical, with feedback loops indicating continuous improvement.
Knowledge Framework

**Primary Audience**
- Regulatory Body Staff
- Technical Support Organizations
- Operators and Utility Staff
- Research Organizations and Educators
- Regulatory Body Staff, Facility Operators and TSOs

**Basic Knowledge**
- Standard Training Courses
  - Basic Professional Training Course on Nuclear Safety
  - Fundamentals on Nuclear Engineering

**Specialized Knowledge**
- Standard Training Courses
  - Safety training packages for countries embarking on a nuclear power programme or developing the first research reactor
  - Regulatory Control of NPPs
  - Safety Assessment of NPPs
  - Operational Safety of NPPs
  - Safety of Research Reactors and Fuel Cycle Facilities
  - Site Safety

**Specific Expert Knowledge**
- Tailored Topical Courses or Workshops
  - Authorization Process and Review and Assessment
  - Accident Analysis Methods and Probabilistic Safety Assessment
  - Accident Management
  - Ageing Management
  - Safety Assessment of Modifications
  - Safety Culture and Management of Safety
  - NPP Operator Regulatory Interface
  - Operational Experience and Feedback
  - Operational Practices
  - Reg. Aspects and Safety Documentation
  - Safety Analysis
  - Safety in Operation and Utilization
  - Management of Ageing
  - Safe Shutdown and Decommissioning
  - General Training Courses
  - Site Safety and External Hazard Assessment
  - Seismic Design and Qualification of Nuclear Installations

**On the Job Training and Practical Experience**
- Scientific Visits, Fellowships,
  - Observers in IAEA Safety Missions
BPTC
Basic Professional Training Course

Steering Committee on Competence of
Human Resources for Regulatory Bodies

New Video lectures, updated web, e-learning

ANSN/ETTG, ETRES, other

SARCON
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
Integrates old TECDOC 1254 and SARCON

Broader Scope: Facilities and Activities

New Appendix for NPP Newcomer Countries
Concept

Education and Training
Human Resource Development
Knowledge Management
Knowledge Networks

GOVERNMENT
REGULATORS
Operators
TSOs

Educational Institutions
Others

Capacity building
Guidance and Methodology

A. Guidance and Methodology

A.1 Introduction

The accident at TEPCO’s FDNPP has raised a number of concerns, including the need for enhanced nuclear safety and security. This result has been achieved by the Conference Plan for Nuclear Safety, in accordance of the Montreux Guidelines.

Module I

- Government NPI
- Area I Human Resources Development
- Area II Knowledge Management and Networks
- Area III Education and Training

Module II

- Educational Institutions
- Regulator
- Operator
- Area I Res Dev
- Area II Know Manage Net
- Area III Educ Tra
Pilot mission in Indonesia

26-29 June
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>
<thead>
<tr>
<th>TABLE 1: THE THREE PHASE APPROACH</th>
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<table>
<thead>
<tr>
<th>Activities</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
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<tbody>
<tr>
<td></td>
<td>Preparation</td>
<td>Promotion</td>
<td>Implementation</td>
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<tr>
<td>Complete the development of tools and guidance for capacity building through education and training in nuclear safety</td>
<td>Dissemination of tools and guidance at regional level and among Member States</td>
<td>Development and implementation of national strategies in Member States</td>
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| 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

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• Training Materials
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• 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

m.moracho.ramirez@iaea.org