Strategic Approach to Education and Training 2013-2020 Nuclear Safety
Conclusions of the Steering Committee on Competence of Human Resources for Regulatory Bodies and

Maria J. Moracho
IAEA/Nuclear Safety and Security Department

10 April 2014
Content

• **Strategic Approach to E&T until 2020**
• **Vision, Objectives, Expected Outputs**
• **Systematic Approach**
• **Main components of the strategy**
• **Mechanisms for Building Capacity**
  – Postgraduate Courses
  – Materials for Self Study, E Learning
  – Curricula, Competency Frameworks, Training Needs Assessment in Safety
  – Nuclear Power Programme Newcomers
  – Global and Knowledge Networks, Asian Nuclear Safety Network/CB and Education and Training Topical Groups

• **The Role of the SC & Further Actions**
2001 a Strategy for E & T presented to the Board of Governors (BoG)
Based on experience implementing the 2001 strategy and developments including Nuclear Safety Action Plan an updated strategy was developed in consultation with a Steering Committee of regulators.

The new Strategic Approach was noted by the BoG March 2013
Vision, Objectives, Expected Outcomes

B.1. Vision
Adequate and sustainable programmes for education and training in nuclear safety consistent with the Agency’s safety standards are to be implemented by Member States in order to ensure that the highest possible levels of safety are achieved.

B.2. Objectives
1. Maintenance and continual improvement of Member States’ capacity building in nuclear safety, consistent with the Agency’s safety standards and best practices. Development of an education and training support programme by the Agency in cooperation with Member States and, as appropriate, other international organizations to support Member States’ implementation of their education and training programmes at a national and regional level.
2. Development by the Agency of a process for the effective and efficient implementation of the education and training support programme and ensuring the continuous improvement of its implementation.

B.3. Outputs
1. An education and training support programme in nuclear safety developed by the Agency in line with the Agency’s safety standards and based on a harmonized approach and standard materials.
2. Knowledge networks and training networks to foster cooperation, exchange of information, and dissemination of best practices and materials.
3. Establishment and support of national and regional training centres, delivering education and training programmes in line with the Agency’s safety standards.

B.4. Outcomes
1. Strengthened nuclear safety in Member States.
2. Improved national infrastructure for education and training based on a national strategy.
3. Increased application of the Agency’s safety standards in Member States.
4. Enhanced networking and cooperation within and among Member States.

10 April 2014
2. 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 Review and Assessment
  - Inspection and Enforcement
  - Development of Regulations and Guides
  - Regulatory Effectiveness
  - Accident Analysis Methods
  - 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

10 April 2014
Main components of the strategy

National Strategy for E&T

Capacity Building Mechanisms

Regional Cooperation and Global Networking

Management Systems, Competence & Knowledge Management

Extra-budgetary, Projects, regional networking, Regular Budget

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

I. Course and Practical Learning
   - Post-graduate & B.Sc.
   - Professional Courses
   - Specialized Training
   - Curricula and Courses
   - On-the-Job Training
   - Fellowships
   - Technical Visits

II. Sustainability
   - Distance Learning
   - E-Learning

III. Train the Trainers
   - Review, Sessions & Tools

IV. Appraisals
   - Review Services
   - Training
   - Competence Needs Assessment Tools

V. Steering Committee of Member States

http://www. @
Educational and training material

Postgraduate Educational Course in Radiation Protection

A Standard Syllabus for post-graduate Educational Courses in Radiation Protection (PGEC) was published in 2002. The PGEC is a comprehensive training programme aimed at training young professionals at graduate level or the equivalent for initial training to acquire a sound basis in radiation protection and safety of radiation sources, some of them would be expected to become the trainers in due time. PGEC is designed to provide both theoretical and practical training in the multidisciplinary scientific and / or technical bases of International recommendations and standards on radiation protection and their implementation. The Agency has been assisting the organization of the regular PGECs in different Regional Centres and in different Agency’s official

Basic Professional Training Course on Nuclear Safety (BPTC)

The Basic Professional Training Course on Nuclear Safety (BPTC) is intended to provide a broad overview of all the safety concepts and their application to nuclear power plants and research reactors design and operation. Its nature and scope are primarily oriented to junior professionals recently involved in nuclear safety-related activities. It is also appropriate for highly specialized professionals who lack a broader view of nuclear safety.

Regulatory Control of Nuclear Power Plants (NPPs)

The purpose of this book is to support IAEA training courses and workshops in the field of regulatory control of nuclear power plants as well as to support the regulatory bodies of Member States in their own training activities. The target group is the professional staff members of nuclear safety regulatory bodies supervising nuclear power plants and having duties and responsibilities in the following regulatory fields: regulatory framework; regulatory organization; regulatory guidance; licensing and licensing documents; assessment of safety; and regulatory inspection and enforcement. Important topics such as regulatory competence and quality of regulatory work as well as emergency preparedness and public communication are also covered.
Fundamentals and Basic Professional Training

E&T Online Video Presentations

Presentations on Safety of Research Reactors

E & T on IAEA Safety Standards

**SST-02**
Safety Standards for Nuclear Installation Safety
Vienna, 2010

Read disclaimer

Design and Safety Assessment

Download Presentation on IAEA Safety Standards for Design and Safety Assessment.pdf

Video Presentation on Safety Standards for Design and Safety Assessment

International Seismic Safety Center

**Nuclear Security eLearning**

The first IAEA Nuclear Security eLearning Course

The Use of Radiation Detection Instruments

**IAEA | Radiation Protection of Patients (RPOP)**

Home Information for Additional Resources Special Groups Member Area

Information for

- Health Professionals
- Member States
- Patients and Public

Member Area
- Member States Area
- Drafts Management Area

Social Media

Facebook Twitter E-mail

Free Material

- Diagnostic and Interventional Radiology
- Radiotherapy
- Nuclear Medicine
- Prevention of Accidental Exposure in Radiotherapy
- Cardiology
- PET/CT
- Paediatric Radiology
- Digital Radiology
- Doctors using fluoroscopy outside radiology (Urologists, Gastroenterologists, Orthopaedic surgeons etc.)

The training material on this site is available for free downloading (subject to conditions specified in 'Intended use' and 'Disclaimer' below), and are on the topics of Radiation Protection in:
Curricula, Competency Frameworks, Training Needs Assessment in Safety

Competence Needs Assessment Process

The guidelines provide a step-by-step approach to identify the gap between the existing and the required competences and define the associated training needs, with a focus on nuclear facilities.

Education, Training and Capacity Building

The Safety Assessment Education and Training Programme (SAET) has been designed to support the Member States with development of required safety assessment capacity and competency. The Programme provides courses and training necessary to achieve knowledge of safety requirements associated with the design and operation of nuclear facilities, and focuses on development of specialized knowledge essential for assessment and evaluation of safety.

A comprehensive and sustainable training programme

A multilevel programme – from introductory to analyst training

SAReCoN Seminars and Application Tool

The IAEA has provided training seminars on how to use SAReCoN in more than 18 countries, one of the main objectives of the seminars is to adapt the tool to the particular Member State.
Welcome to Steering Committee on
"Competence of Human Resources for Regulatory Bodies"

Past and Future Meetings

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Location</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-10-24</td>
<td>5th Plenary Meeting of the Steering Committee</td>
<td>Room M7, VIC, Vienna</td>
<td>10/26/2013 9:30 AM</td>
<td>10/31/2013 3:00 PM</td>
</tr>
</tbody>
</table>

News

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-10-24</td>
<td>Documents for the 5th Meeting of the Steering Committee available</td>
</tr>
<tr>
<td>2013-05-24</td>
<td>Report of the Bureau Meeting finalized and uploaded</td>
</tr>
<tr>
<td>2013-05-23</td>
<td>Report of the 4th Meeting of the Steering Committee finalized and uploaded</td>
</tr>
<tr>
<td>2013-02-11</td>
<td>Draft Report from 4th SC Meeting</td>
</tr>
</tbody>
</table>

Documents
The Role of the SC & Further Actions

- To Prepare and advise on Action Plans to implement the strategy in Education and Training
  - *Already on going through our work programme*
- To conduct periodic assessment of the implementation of the strategy and,
- To feedback and share experience and advise the IAEA on current and future supporting actions
- To prepare the next strategic cycle
Conclusions of the 5th SC on E&T

- The Steering Committee is integrated in the GNSSN
- It will be the Steering Group supporting REGNET and the GNSSN in the area of Management of Regulatory Competence, knowledge, Education and Training
- ToR are being revised,
- Meeting hosted by the ONR in Liverpool next week
Capacity Building for establishing Safety Infrastructure for Nuclear Power Programmes

Introduction

Education and Training

Introduction

The establishment of sustainable education and training programmes are fundamental to safety to ensure that proper skills are acquired and that adequate levels of competencies are achieved and maintained.

Past Activities
Thank you for your attention