IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT AND WASTE SAFETY

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Outline

IAEA Strategic Approach to E&T in rad., transp. and waste safety
- *Principles of IAEA’s support to Member States in the field of E&T*

National Strategy for E&T in rad., transp. and waste safety
- *The guidance on a methodology to establish the national strategy*

IAEA support to build education and training infrastructures
- *Cooperation projects to promote the establishment of the national strategy*
"IAEA Strategic Approach to Education and Training in Radiation, Transport and Waste Safety 2011–2020"

Submitted to the IAEA Policy Making Organs in 2010, where it was endorsed by the General Conference

IAEA STRATEGIC APPROACH 2011-2020


Note by the Secretariat

Strategic Approach to Education and Training in Radiation, Transport and Waste Safety
2011–2020

Continuation of the Strategic Approach 2001–2010

A ten-year strategy for education and training in radiation and waste safety was developed by an Advisory Group of experts from Member States, and subsequently noted by the 2001 General Conference in GC(60)/RES/9, which urged the Secretariat to implement the aforementioned strategy. A steering committee, comprising experts from regional and collaborating centres in Member States, international organizations and the Secretariat, was established to advise the Agency on the implementation of the strategy and to make recommendations as appropriate.

Subsequent General Conference Resolutions GC(60)/RES/9, GC(61)/RES/7, GC(64)/RES/10, GC(64)/RES/9, GC(65)/RES/10, GC(67)/RES/11, GC(67)/RES/9 and GC(68)/RES/10 have underlined or emphasized the importance of sustainable programmes for education and training in nuclear, radiation, transport and waste safety, and have also welcomed the ongoing commitment of the Secretariat and Member States to the implementation of the strategy.

Towards the end of the ten-year period, the steering committee made an analysis of the overall achievements based on the effectiveness of the various components of the 2001–2010 strategy. The steering committee, noting the achievements of the 2001–2010 strategy, revised and updated it and recommended that it be continued for the period 2011–2020.

Steering Committee
MAIN ELEMENTS OF THE IAEA STRATEGY

- Vision

   *Education and Training infrastructures for building and maintaining national competence in radiation, transport and waste safety,*

   *are in place in Member States,*

   *consistent with IAEA safety standards*
MAIN ELEMENTS OF THE IAEA STRATEGY

- **Objectives**
  - To *strengthen* radiation, transport and waste safety infrastructures through building competence in MSs
  - To *ensure* that E&T programmes in MSs address the requirements of the IAEA safety standards
  - To *facilitate* the establishment of a *national strategy* for E&T in rad., transp. and waste safety in MSs

- **Output**
  - *Guidance on the establishment and implementation of a national strategy for E&T*
IMPLEMENTATION OF THE IAEA STRATEGY

- **Key players**
  - IAEA
  - Member States
  - Regional Training Centres (RTCs)
IMPLEMENTATION OF THE IAEA STRATEGY
Regional Training Centres

AFRICA:
- CRNA (Algeria - French)
- CNESTEN (Morocco, French)
- GAEC (Ghana - English)

LATIN AMERICA:
- ARN (Argentina - Spanish)
- IRD/CNEN (Brazil - Portuguese)

EUROPE:
- ISEU (Belarus - Russian)
- GAEC (Greece, English)

ASIA:
- NMA (Malaysia - English)
- AECS (Syria - Arabic)
### IMPLEMENTATION OF THE IAEA STRATEGY

<table>
<thead>
<tr>
<th>Activities</th>
<th>Stage I: Preparation</th>
<th>Stage II: Promotion</th>
<th>Stage III: Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of the competence building tools and guidance to establish a national strategy for education and training</td>
<td>Dissemination and promotion of tools and guidance at regional level among the Member States</td>
<td>Development and implementation of national strategies in Member States</td>
<td></td>
</tr>
<tr>
<td>Key-players</td>
<td>IAEA</td>
<td>RTCs</td>
<td>Member States</td>
</tr>
</tbody>
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Requirement 1

National policy and strategy for safety

- The government shall establish a national policy and strategy for safety..

- In the national policy and strategy, account shall be taken of the following: 
  
  .... The need and provision for human resources

- The governmental, legal and regulatory framework for safety includes:
  
  .... Provision for acquiring and maintaining the necessary competence nationally for ensuring safety
NATIONAL STRATEGY FOR E&T

Assess E&T Needs

Develop and Implement E&T Programme

Design National E&T Programme

Evaluate effectiveness

Have identified needs been met? Are there new needs?

Existing regulatory/professional E&T requirements
Current and foreseeable facilities & activities → No. of people to be trained

Define E&T events & infrastructure to meet identified needs

IAEA

National Strategy for E&T

• Develop/expand E&T programmes/infrastructure
• Establishment of criteria (courses, lecturers)
• Consider outsourcing (international resources)

NATIONAL STRATEGY FOR E&T
A practical tool for assisting Member States to establish a national strategy for education and training in radiation, transport and waste safety
Annex I:

- illustrates the practical application of the guidance for a hypothetical country
- helps to visualize the implementation of the various steps of the process in a practical way.
## GUIDANCE - ANNEX I

<table>
<thead>
<tr>
<th>Practices using radiation sources</th>
<th>Number of facilities</th>
<th>Qualifying Expert (QE)</th>
<th>Radiation Protection Officer (RPO)</th>
<th>Operator</th>
<th>Health Professionals (HP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ex.</td>
<td>Fut.</td>
<td>Tot.</td>
<td>QE</td>
<td>QE Required</td>
</tr>
<tr>
<td><strong>INDUSTRIAL and RESEARCH</strong></td>
<td></td>
<td></td>
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<td>Industrial radiography</td>
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<td>2</td>
<td>13</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Industrial neutron facilities</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Industrial gauges and well logging</td>
<td>38</td>
<td>7</td>
<td>45</td>
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<td>35</td>
</tr>
<tr>
<td>Research activities: use of sealed and unsealed sources</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>7</td>
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<tr>
<td>Research accelerators &amp; reactors</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mineral extraction and processing companies (NORM)</td>
<td>10</td>
<td>2</td>
<td>12</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>MEDICAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental radiology (closed)</td>
<td>500</td>
<td>200</td>
<td>700</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Diagnostic and interventional radiology</td>
<td>620</td>
<td>120</td>
<td>740</td>
<td>37</td>
<td>37</td>
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<tr>
<td>Radiotherapy and brachytherapy</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Nuclear medicine</td>
<td>13</td>
<td>3</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td><strong>OTHER PRACTICES</strong></td>
<td></td>
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GUIDANCE NAT. STRAT. ON E&T

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<th>Output 3: Design of the national E&amp;T programme</th>
<th>Output 4: Development and implementation of the national E&amp;T programme</th>
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<td>Professional bodies and associations</td>
<td>Action 2</td>
<td>Action 6</td>
<td>Action 9</td>
<td>Action 15 Action 17</td>
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<td>Education and training providers</td>
<td>Action 2</td>
<td>Action 5</td>
<td>Action 10 Action 11</td>
<td>Action 18 Action 19</td>
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<tr>
<td>National Committee</td>
<td>Action 2</td>
<td>Action 8</td>
<td>Action 10 Action 11</td>
<td>Action 18 Action 19</td>
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Technical Cooperation Regional Projects on E&T
“Strengthening the Education and Training Infrastructure and Building Competence in Radiation Safety”

Africa : RAF9048

Asia and the Pacific : RAS9066

Europe : RER9109

Latin America : RLA9070-9075
Regional Workshops on National Strategies 2012 -2014

19 Regional workshops; > 300 participants from 90 Member States

- The guidance to establish a National Strategy for E&T has been disseminated among MSs
- Preliminary information collected by MSs
- Action Plans were drafted to establish a National Strategy for E&T
Take home points

- The establishment by Member States of a national strategy for E&T in radiation safety is one of the key factors to build sustainable capacity, in compliance with relevant IAEA Safety Standards.

- For that purpose IAEA has developed a guidance and supports MSs through technical cooperation projects.

- Future work of IAEA will include monitoring the progress made and analysing challenges faced and difficulties encountered, in order to identify possible solutions to be rendered to MSs (e.g. new workshops planned for 2014).
E&T - Division of Radiation, Transport and Waste Safety

Nuclear Safety & Security
- Nuclear Safety & Security
  - Safety & Security Framework
  - Technical Areas
  - Services for Member States
  - Safety & Security Publications
- Conventions & Codes
- Education & Training
  - Home page
  - Events calendar
  - Incidents & emergencies
- Nuclear installation safety
- Nuclear security
  - Radiation, transport & waste
  - Meetings
  - Special projects

Education and Training in Radiation, Transport and Waste Safety

Building competence through education and training in radiation safety is fundamental to the establishment of a comprehensive and sustainable national infrastructure for radiation safety, which in turn is essential for protecting people from the harmful effects of radiation. In order to establish a sustainable education and training infrastructure in radiation, transport and waste safety, Member States should develop a national strategy for building competence through education and training. Based on the approach provided in the Safety Guide "Building Competence in Radiation Protection and the Safe Use of Radioactive Sources."

The national strategy is based on 4 established phases, where the outcome of one phase is the starting point for the next phase. The design and development of an education and training programme for a national strategy requires the organization of training courses in radiation protection. IAEA Safety Reports Series No. 20: "Training in radiation protection and the safe use of radioactive sources" provides trainers and training organization with information on and examples of training methods and materials that have proven to be effective in use with appropriate target audiences.

http://goto.iaea.org/rtws-E&T