Strategic Approach to Education & Training in Nuclear Safety 2013-2020

The Agency developed a Strategic Approach for Education and Training in Nuclear Safety for the period 2013-2020 (herein after referred to as Strategic Approach) which was noted by the Board of Governors in March 2013. The Strategic Approach supports Capacity Building in line with the Nuclear Safety Action Plan. It builds upon the experience of the Agency’s education and training activities since 2002. The Strategic Approach identifies four main components:

- National strategies for capacity building;
- capacity building mechanisms;
- effective use of networking, regional and international cooperation;
- management systems, management of competence and knowledge management.

Efforts continued to strengthen management systems in the areas of competence and knowledge management. A new safety report, based on the safety standards, entitled “Managing the Competence of the Regulatory Body” was finalized and will be published in 2013 (Safety Reports Series No.79). The objective of this safety report is to provide guidance on managing the competence of staff of the regulatory body. This report also gives advice on training and development programmes for regulatory staff. It includes an appendix with considerations for countries embarking on a nuclear power programme. The new safety report supersedes TECDOC 1254 and offers an updated competence model for the regulator.

For further information please refer to http://gnssn.iaea.org/regnet/rcm/moc or contact NIS-Training.Contact-Point@iaea.org

### Quadrant model of competences for regulatory bodies

#### 1. Competences related to legal, regulatory and organizational basis
- 1.1 Legal basis
- 1.2 Regulatory policies and approaches
- 1.3 Regulations and regulatory guides
- 1.4 Management System

#### 2. Technical disciplines competences
- 2.1 Basic science and technology
- 2.2 Applied science and technology
- 2.3 Specialized science and technology

#### 3. Competence related to regulatory body’s practices
- 3.1 Review and assessment
- 3.2 Authorization
- 3.3 Inspection
- 3.4 Enforcement
- 3.5 Development of regulations and guides

#### 4. Personal and behavioural competences
- 4.1 Analytical thinking and problem solving
- 4.2 Personal effectiveness and self-management
- 4.3 Communication
- 4.4 Team work
- 4.5 Managerial and leadership competence
- 4.6 Safety Culture

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The Steering Committee on Competence for Human Resources for Regulatory Bodies (herein after referred to as the SC) held its annual meeting in December 2012 with the participation of 20 Member States. The SC discussed and endorsed the Strategic Approach, shared experiences in the implementation of national activities and advised the Agency on how it could best support Member States’ needs in education and training. The Agency’s Work Programme for 2013 was updated with the advice of the SC. This programme focuses on the implementation of the Strategic Approach to education and training in nuclear safety, establishment of a continuous improvement process for sharing relevant training information and the revision to the Basic Professional Training Course (BPTC) and the Regulatory Control Course. A website was developed for the Member States to share information, documents and discussion in the area of education and training in nuclear safety (http://gnssn.iaea.org/regnet/rcm/sc), including a members area for projects of the SC (http://gnssn.iaea.org/regnet/rcm/sc/auth).

The next plenary is scheduled for 29-31 October 2013.
EDUCATION AND TRAINING TOPICAL GROUP (ETTG)

The Education and Training Topical Group (ETTG) of the Asian Nuclear Safety Network (ANSN), held its annual meeting in October 2012. A work programme on education and training for 2013 was agreed upon by the ETTG in support of their national effort to build capacity. The ETTG was followed by a seminar on national policy and strategies for human resources development.

For further information please refer to http://www.ansn.org/Common/Topics/EducationandTraining.aspx (Registration for more details)
or contact NIS-Training.Contact-Point@iaea.org

SARCoN

SYSTEMATIC ASSESSMENT OF REGULATORY COMPETENCE NEEDS FOR REGULATORY BODIES OF NUCLEAR FACILITIES

The SARCoN tool questionnaires and software were updated in line with the new competence model and were provided to regional training organisations and individual users from educational institutions.

For further information please refer to http://www-ns.iaea.org/training/ni/sarcon.asp or contact NIS-Training.Contact-Point@iaea.org.

HUMAN RESOURCES DEVELOPMENT IN THE AREA OF SAFETY

Various advisory missions on human resources development in the area of safety and in support of the Member States’ national strategies for education and training were conducted to assist the regulatory body in the Philippines, Poland, Turkey and Thailand.

Training materials have been produced and published which consist of lectures and presentations given during the Asian Nuclear Safety Network seminar “Policy on Human Resources Development for Safety Infrastructure”. The first part provides an introduction to Human Resource Management related to SSG-16 actions, the second an overview of IAEA support.

Workshop available on DVD upon request and online at http://www-ns.iaea.org/training/ni/train-on-hrd.asp

Target audience: Staff of regulatory authorities and its technical support organizations. Viewers should be involved in activities related to education and training as well as human resources development, training managers and senior staff with decision capacity to advise on overall education and training programmes in their country.

For further information please refer to the site mentioned or contact NIS-Training.Contact-Point@iaea.org.

SEISMIC SAFETY ASSESSMENT

A training course on Tsunami Hazard Assessment was held in August 2012 in Vienna. 10 trainees from 10 Member States participated. Tsunami simulation and hazard assessment methodologies were lectured, and operational methodologies of tsunami analysis software were instructed. This was a hands-on-training so the participants actually used the software in solving sample problems. In addition, the participating countries were provided with the software to continue with their site specific assessments.

For more information please refer to https://issc.iaea.org or contact issc@iaea.org.
SAET AND GSAN

A major Safety Assessment Education and Training (SAET) programme is the European Commission (EC) funded “Safety Assessment Training Programme for Jordanian Nuclear Regulatory Commission (JNRC) Staff”. In the framework of this Programme the IAEA is delivering a series of 15 training workshops aimed to increase the capacity of JNRC in the area of safety assessment.

The Norwegian funded Programme on “Strengthening of Nuclear Safety Competence in Developing Countries” is one of the main Extra Budgetary Programmes (EBP) through which the Safety Assessment Section (SAS) is providing Malaysia and Vietnam training based on the SAET curriculum. In the framework of this Programme the IAEA implemented a series of workshops addressing the essential knowledge aspects of performing and reviewing deterministic and probabilistic safety assessments and practical applications in these areas.

Starting in June 2012, the Safety Assessment Section (SAS) in cooperation with the Regulatory Activities Section (RAS) are organizing Zwentendorf Plant Walk down Workshops using the Austrian Zwentendorf Nuclear Power Plant (never commissioned), which is now available for training and demonstration purposes. The workshops provide: an introduction to the IAEA safety standards referencing plant walk downs; instructions in preparing for and performing a plant walk down; access to the Zwentendorf nuclear power plant (NPP) to conduct the walk downs, and; instructions on post walk down activities.

Prepared by instructors from USNRC, the programme contains lectures on different plant systems and actual walk down practices inside the plant.

Two workshops were conducted in June and September 2012, with extensive participation from embarking countries, and 2 more are scheduled for June and September 2013.

For further information please contact GSAN.Contact-Point@iaea.org.

CAPACITY BUILDING


For more information please refer to http://www-ns.iaea.org/coordination/capacity-building.asp or contact NSweb-Coordination-Contact-Point.Managers@iaea.org.

Online Presentation from the GNSSN Steering Committee meeting on NSAP action 9 - capacity building

Concept of capacity building
A project plan was developed and a kick-off meeting was held with the purpose of updating the Agency’s regulatory control text book and its associated work book. This project will be realized during 2013. The expected output is an updated electronic book available and free of charge for the Member States.

The documents under revision dated 2002 are available at http://www-ns.iaea.org/training/ni/train-reg-bod.asp

For further information please contact NIS-Training.Contact-Point@iaea.org

Systemic Approach to Safety and Human and Organizational Factors

The Agency has also provided, upon request, assistance on how to more effectively prepare and manage unexpected events at nuclear power plants. Knowledge captured during the technical meeting on Managing the Unexpected – from the Perspective of the Interaction between the Individuals, Technology and Organization was spread in variety of forms. All presentations from the meeting were filmed and compiled into training material for Member States’ use. The material is available on the Agency’s website at http://www-ns.iaea.org/training/ni/train-on-mtu.asp.

Target audience: Trainers in NPP regulation and operations, suppliers, newcomers and technical support organizations.

Media: 7 DVDs with Video-Synchronized Power Point Presentations or 18 Online Video Presentations.

For further information please refer to the address above or contact Operational-Safety.Contact-Point@iaea.org.

Illustration of the ITO concept
## UPCOMING EDUCATION & TRAINING EVENTS

Please also visit: [http://www-ns.iaea.org/training/calendar.asp?s=9&l=73](http://www-ns.iaea.org/training/calendar.asp?s=9&l=73)

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Location</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun 11-14</td>
<td>SALTO workshop for Kozloduy</td>
<td>Kozloduy, Bulgaria</td>
<td><a href="mailto:R.Krivanek@iaea.org">R.Krivanek@iaea.org</a></td>
</tr>
<tr>
<td>Jun 13-14</td>
<td>Regional Workshop on Site Survey and Site Selection Process</td>
<td>Ankara, Turkey</td>
<td><a href="mailto:A.Altinyollar@iaea.org">A.Altinyollar@iaea.org</a></td>
</tr>
<tr>
<td>Jun 17-21</td>
<td>Regional Workshop on Nuclear Safety Tailored for Regulators (ANSN/ETTG)</td>
<td>Daejon, Republic of Korea</td>
<td><a href="mailto:U.Bezdeguemeli@iaea.org">U.Bezdeguemeli@iaea.org</a></td>
</tr>
<tr>
<td>Jun 24-27</td>
<td>Workshop on the Development of an Information System for Experience and Feedback during Construction and Commissioning of a new NPP</td>
<td>Haiyang, China</td>
<td><a href="mailto:H.Tanaka@iaea.org">H.Tanaka@iaea.org</a></td>
</tr>
<tr>
<td>Jun 24-27</td>
<td>Workshop on the implementation of Integrated Management Systems for Research Reactors</td>
<td>Vienna, Austria</td>
<td><a href="mailto:A.Shokr@iaea.org">A.Shokr@iaea.org</a></td>
</tr>
<tr>
<td>Jun 24-27</td>
<td>Workshop on safety culture analysis and improvement activities</td>
<td>Dessel, Belgium</td>
<td><a href="mailto:M.Haage@iaea.org">M.Haage@iaea.org</a></td>
</tr>
<tr>
<td>Jun 24-28</td>
<td>Workshop on Complementary Safety Assessments for Research Reactors following the Lessons Learned from Fukushima Daiichi Accident</td>
<td>Vienna, Austria</td>
<td><a href="mailto:A.Shokr@iaea.org">A.Shokr@iaea.org</a></td>
</tr>
<tr>
<td>Jul 1-5</td>
<td>National Workshop on Regulatory Approaches and Regulatory Framework</td>
<td>Manila, Philippines</td>
<td><a href="mailto:U.Bezdeguemeli@iaea.org">U.Bezdeguemeli@iaea.org</a></td>
</tr>
<tr>
<td>Jul 1-5</td>
<td>Workshop on Essential Knowledge of Evaluation of the Safety Analysis Report (SAR) - Chapter 15</td>
<td>Kuala Lumpur, Malaysia</td>
<td><a href="mailto:P.Wells@iaea.org">P.Wells@iaea.org</a></td>
</tr>
<tr>
<td>Jul 8-12</td>
<td>Modular workshop on writing safety regulations based on the IAEA SS (SSG 16)</td>
<td>Vienna, Austria</td>
<td><a href="mailto:U.Bezdeguemeli@iaea.org">U.Bezdeguemeli@iaea.org</a></td>
</tr>
<tr>
<td>Jul 8-12</td>
<td>Workshop on Integrated Management Systems - emphasis on owner operator</td>
<td>Vienna, Austria</td>
<td><a href="mailto:S.Koenick@iaea.org">S.Koenick@iaea.org</a></td>
</tr>
<tr>
<td>Jul 8-12</td>
<td>Workshop on Kola Nuclear Power Plant</td>
<td>Polyarni Zori, Russian Federation</td>
<td><a href="mailto:A.Polyakov@iaea.org">A.Polyakov@iaea.org</a></td>
</tr>
<tr>
<td>Jul 22-26</td>
<td>Workshop on Regulatory Approaches for Licensing of NPPs and Development of Related Nuclear Safety Regulations</td>
<td>Ulan Bator, Mongolia</td>
<td><a href="mailto:J.Jubin@iaea.org">J.Jubin@iaea.org</a></td>
</tr>
<tr>
<td>Jul 24-26</td>
<td>Workshop with Canadian utilities on Long Term Operations (LTO) and Ageing Management (AM)</td>
<td>Ottawa, Canada</td>
<td><a href="mailto:R.Krivanek@iaea.org">R.Krivanek@iaea.org</a></td>
</tr>
<tr>
<td>Aug 19-21</td>
<td>Safety Culture Assessment Training</td>
<td>Bushehr, Islamic Republic of Iran</td>
<td><a href="mailto:M.Haage@iaea.org">M.Haage@iaea.org</a></td>
</tr>
<tr>
<td>Aug 19-30</td>
<td>Training Course on Leadership and Management of Nuclear Power Programme for newcomers and expanding nuclear power countries</td>
<td>Argonne, United States of America</td>
<td><a href="mailto:D.Grades@iaea.org">D.Grades@iaea.org</a></td>
</tr>
<tr>
<td>Aug 19-21</td>
<td>National Workshop on Development of Processes for Regulatory Activities</td>
<td>Jakarta, Indonesia</td>
<td><a href="mailto:A.Khatoon@iaea.org">A.Khatoon@iaea.org</a></td>
</tr>
<tr>
<td>Aug 26-30</td>
<td>Regional Workshop on Essential Knowledge of Site Evaluation for Nuclear Power Plants</td>
<td>Kuala Lumpur, Malaysia</td>
<td><a href="mailto:O.Coman@iaea.org">O.Coman@iaea.org</a></td>
</tr>
</tbody>
</table>
EDUCATION & TRAINING MATERIALS

More than 550 copies of Agency DVDs containing video lectures were disseminated; web hits increased in the area of training materials and the newsletter on education and training was made accessible to 35 new users. Twenty-six new video lectures relating to different aspects of safety infrastructure and safety culture were produced and provided free of charge through the Agency’s website and in DVD format. These video lectures are intended to foster the exchange of knowledge and experience amongst Member States and therefore to support their knowledge and competence management.

RECENTLY PUBLISHED TRAINING MATERIALS

**Nuclear Safety Action Plan Action 9 – Capacity Building**, presented by Dr Shahid Mallick
Media type: Online Presentation.

**The Strategic Approach to Education and Training in Nuclear Safety 2013-2020**, presented by Ms Maria Moracho-Ramirez
Media type: Online Presentation.

**Managing the Unexpected – From the perspective of the interaction between Individuals, Technology and Organization**
Media type: Lecture series of 18 online presentations, also available on DVD upon request.
Available at: [http://www-ns.iaea.org/training/ni/train-on-mtu.asp?s=100&l=106](http://www-ns.iaea.org/training/ni/train-on-mtu.asp?s=100&l=106)

**Policy on Human Resources Development for Safety Infrastructure**
Media type: Lecture series of 7 online presentations, also available on DVD upon request.
Available at: [http://www-ns.iaea.org/training/ni/train-on-hrd.asp?s=100&l=106](http://www-ns.iaea.org/training/ni/train-on-hrd.asp?s=100&l=106)

**Safety of Research Reactors**
Media type: Lecture series of 14 online presentations, now also available on CD upon request.
Available at: [http://www-ns.iaea.org/training/ni/train-on-rr1.asp?s=100&l=103](http://www-ns.iaea.org/training/ni/train-on-rr1.asp?s=100&l=103)

USEFUL LINKS

**Nuclear Installation Safety Education & Training**

**Workshops and Online presentations**
[http://www-ns.iaea.org/training/ni/workshops.asp](http://www-ns.iaea.org/training/ni/workshops.asp)

**Regulatory Competence Management**
[http://gnssn.iaea.org/regnet/rcm](http://gnssn.iaea.org/regnet/rcm)

**Shared Web Space of the Steering Committee**
[http://gnssn.iaea.org/regnet/rcm/sc](http://gnssn.iaea.org/regnet/rcm/sc)

**Training Events Calendar**
[http://www-ns.iaea.org/training/calendar.asp](http://www-ns.iaea.org/training/calendar.asp)

**Interdepartmental Education & Training**

**Education & Training in Nuclear Safety & Security**
[http://www-ns.iaea.org/training/default.asp](http://www-ns.iaea.org/training/default.asp)

**International Regulatory Network (RegNet)**
[http://gnssn.iaea.org/regnet](http://gnssn.iaea.org/regnet)

**Global Safety Assessment Network (GSAN)**
[http://gsan.iaea.org](http://gsan.iaea.org)

**Online Lectures for Safety Assessment**

Impressum

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