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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" is in line with and supports the IAEA Action Plan on Nuclear Safety.[1] It includes a summary of the key achievements on education and training in nuclear safety over the period 2001–2012. It is attached hereto for the information of Member States.

28 February 2013

[1] GOV/2011/59-GC(55)/14.

March 2013

Strategic Approach to Education and Training in Nuclear Safety 2013–2020

CONTENTS

A. Background

The Agency has a statutory function to establish standards of safety for protection of health and minimization of danger to life and property and to provide for the application of these standards, to operations assisted by the Agency, and at the request of the parties, to operations under any bilateral or multilateral arrangements, or, at the request of a State, to any of that State's activities in the field of atomic energy — including through education and training. The Agency's General Conference specifically emphasized the importance of education and training in resolutions GC(XXXV)/RES/552 (1991), GC(XXXVI)/RES/584 (1992), GC(43)/RES/13 (1999).

Subsequent General Conference resolutions GC(46)/RES/9, GC(47)/RES/7, GC(48)/RES/10, GC(49)/RES/9, GC(50)/RES/10, GC(51)/RES/11, GC(52)/RES/9, GC(53)/RES/10, GC(54)/RES/7, GC(55)/RES/9 and GC(56)/RES/9 underlined or emphasized the importance of education and training and knowledge management[2] in nuclear, radiation, transport and waste safety, and welcomed the ongoing commitment of the Secretariat and Member States to strengthening education and training in all areas of safety.

In 2000, in resolution GC(44)/RES/13, the General Conference urged the Secretariat to implement all the actions mentioned in Attachment 6 to document GOV/2000/34-GC(44)/7, which tasked the Secretariat "to intensify post-graduate course activities in accordance with General Conference resolution GC(XXXVI)/RES/584 on 'Education and training in radiation protection and nuclear safety' and to develop, in a systematic way, syllabuses and training material for specific target groups and specific uses of radiation sources and radioactive materials". The Secretariat was also urged to strengthen, within existing resources, the role of regional cooperation, the harmonization of training in nuclear safety and the application of IAEA safety standards.

In 2001, two Advisory Groups, one in the area of nuclear safety and one in the area of radiation and waste safety, produced strategic approaches to education and training, which were transmitted to Member States as Notes by the Secretariat.[3] The General Conference urged the Secretariat in resolution GC(45)/RES/10 to implement the two strategic approaches.

Since 2002, the General Conference has consistently reiterated the importance of the Agency's education and training activities.[4] In GC(56)/RES/9 the General Conference called upon the Secretariat "to strengthen and expand its programme of training and education activities, while focusing on building institutional, technical and managerial capabilities in Member States, and to continue its efforts to preserve its knowledge and institutional memory in nuclear safety" (para. 66).

The IAEA's activities over the period 2001–2006 under the integrated strategy for education and training in nuclear safety developed in 2001 were discussed at two technical meetings held in 2007

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[2] Mentioned for the first time in GC(56)/RES/9.

[3] Note by the Secretariat, 2001/Note 19, Report of the Advisory Group Meeting on Education and Training in Nuclear Safety (27-29 March 2001), and Note by the Secretariat, 2001/20, Report on Strategic Approach to Education and Training in Radiation and Waste Safety (23-27 April 2001).

[4] GC(44)/RES/13, GC(45)/RES/10, GC(46)/RES/9, GC(47)/RES/7, GC(48)/RES/10, GC(49)/RES/9, GC(50)/RES/10, GC(51)/RES/11, GC(52)/RES/9, GC(53)/RES/10, GC(54)/RES/7, GC(55)/RES/9 and GC(56)/RES/9.

and 2008 with the involvement of Member States and other international organizations[5]. Following the recommendations of these two technical meetings, a Steering Committee comprising experts from regulatory bodies in Member States was established in 2009. This Steering Committee had the remit of advising the Agency on how it could best support Member States' education and training programmes in nuclear safety and making recommendations as appropriate.

In 2010, a revised strategic approach to education and training in the area of radiation, transport and waste safety for 2011–2020 was developed.[6]

In 2011, following the TEPCO Fukushima Daiichi nuclear power plant accident, the Agency developed the Action Plan on Nuclear Safety[7] (hereinafter the 'Action Plan'), which was endorsed by the General Conference at its 55th session. Capacity building in Member States is the subject of one of the 12 actions of the Action Plan. The Agency developed an integrated concept for capacity building encompassing its four main pillars: education and training, human resource development, knowledge management and knowledge networks. Education and training is one of the main pillars of capacity building under the Action Plan, and it also supports other actions of the Action Plan, such as those concerning strengthening of safety infrastructures for countries embarking on a nuclear power programme, strengthening of regulatory bodies, peer reviews and sharing of information.

In 2012, the Secretariat together with the Steering Committee conducted a review of achievements and events for education and training in nuclear safety over the period 2001–2012 and developed a "Strategic Approach to Education and Training in Nuclear Safety, 2013–2020". This strategic approach is proposed as a means of strengthening the Agency's support for capacity building through education and training in the area of nuclear safety.

The "Strategic Approach to Education and Training in Nuclear Safety, 2013–2020" described in this Note is in line with the Action Plan. It complements the "Strategic Approach to Education and Training in the area of Radiation, Transport and Waste Safety, 2010–2020" and supports the implementation of the IAEA Medium Term Strategy 2012–2017.[8]

B. Introduction

The implementation of education and training activities in nuclear safety over the period 2001–2012 needs to be continued in order to facilitate the further development of capacity building through education and training at the national level and to strengthen regional and global cooperation as much as possible.

The strategic approach to education and training activities in nuclear safety for 2013–2020 recognizes the importance of Member States' taking ownership of the tasks by developing and implementing national strategies to strengthen capacity building. It will require a high level of national commitment to put in place the mechanisms for building national capacity in nuclear safety.

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[5] In 2007, 22 Member States were represented in the first Technical Meeting. In 2008, the European Commission joined 19 Member States represented in the second Technical Meeting.

[6] Note by the Secretariat, 2010/Note 44, "Strategic Approach to Education and Training in the Area of Radiation, Transport and Waste Safety, 2011–2020 (Continuation of the strategic approach 2001–2010)".

[7] GOV/2011/59-GC(55)/14.

[8] GOV/2010/66.

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.

C. Implementation

C.1. Key Roles

The successful implementation of this strategic approach will require effective interaction between the Secretariat and Member States. In particular, it is expected that Member States will take responsibility for 'ownership' over the course of implementation of the strategic approach as Member States have the primary responsibility for building and maintaining capacity for nuclear safety.

The Secretariat, within its statutory function of providing for the application of the IAEA safety standards, has responsibility for overseeing the implementation of its training and educational activities. Consideration should also be given to utilizing the expertise available in regulatory bodies, operators, vendors, professional bodies, scientific societies and regional or international organizations.

It is important to monitor the implementation of the strategic approach, progress made and outputs. The Steering Committee on competence of human resources for regulatory bodies, representing Member States' regulatory bodies, can play an important role in this regard.

C.2. Components of the Strategic Approach

The proposed strategic approach for 2013–2020 is based on four key components:

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

C.2.1. National Strategies for Capacity Building

A national strategy for capacity building needs to be developed, implemented and periodically assessed. According to the Action Plan, Member States with nuclear power programmes and those planning to embark on a nuclear power programme should strengthen, develop, maintain and implement their capacity building programmes. This includes education, training and exercises at the national, regional and international levels. Capacity building as defined by the Agency within its support activities for the implementation of the Action Plan encompasses four main pillars: education and training, human resource development, knowledge management and knowledge networks. These four pillars are considered at a governmental level as well as for each of the 'stakeholder' organizations, such as the regulatory body, operating organization, educational institutions and technical support organizations.

In developing a national strategy for capacity building, the following considerations should be taken into account.

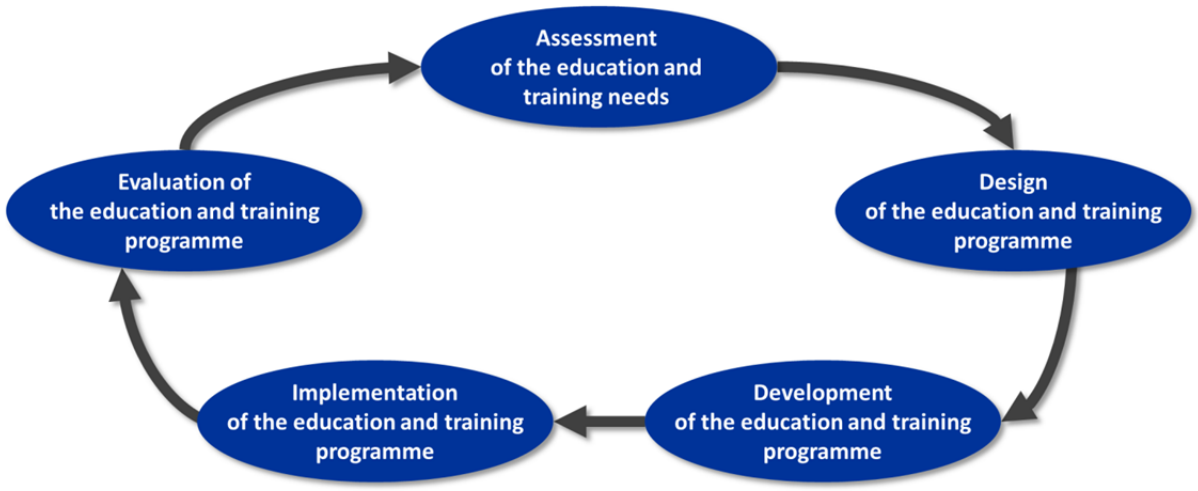

Fig. 1. Systematic approach for education and training programmes (starting at the top)

For an education and training programme, the systematic approach shown in Fig. 1 is recommended. The first task in the development of an education and training programme is to assess and prioritize education and training needs, with account taken of existing and foreseeable future facilities and

activities. When designing and implementing an education and training programme, the availability of national resources — which should be used as far as is possible — and the option of supplementing these with regional or international resources (for example from the Agency) should be taken into account. Finally, periodic evaluation of the education and training programme could lead to the identification of further education and training needs.

Human resource development is a second important pillar of capacity building. The national education and training programme should support the sustainable development of sufficient and competent human resources in order to ensure safety in the development of a nuclear power programme.

Knowledge management is another key area of capacity building. For countries embarking on a nuclear power programme, if a significant proportion of education and training activities are outsourced or are sourced from external assistance, it should be ensured that adequate knowledge transfer and ownership are achieved. In Member States with a mature nuclear power programme facing the challenges of an ageing workforce, preservation of knowledge on nuclear safety must be part of both the national and the organizations' strategy for capacity building.

Knowledge networks permit a continuous improvement in safety related knowledge. They strongly support education and training and human resource development, and they give access to lessons learned from experience and facilitate benchmarking activities. Regional projects on education and training, under the umbrella of technical cooperation and extra-budgetary programmes, as well as knowledge networks and regional networks, are essential components of the process of developing a sustainable education and training infrastructure for nuclear safety.

The Secretariat will continue to provide guidance and assistance to Member States, if requested and as appropriate, for the development and strengthening of their capacity building, in particular through education and training, in line with the Action Plan and consistent with IAEA safety standards.

The Secretariat will also continue to develop and deliver specific education and training support for Member States developing a nuclear power programme.

C.2.2. Capacity Building Mechanisms

The Agency has done considerable work in recent years to develop a comprehensive inventory of mechanisms to support capacity building (see Fig. 2). The subsections below elaborate on some of the mechanisms shown in Fig. 2. Cooperation between Member States and the Agency build upon the experience of using these capacity building mechanisms, by upgrading and adjusting the associated activities and continuously improving the support services for education and training offered by the Agency.

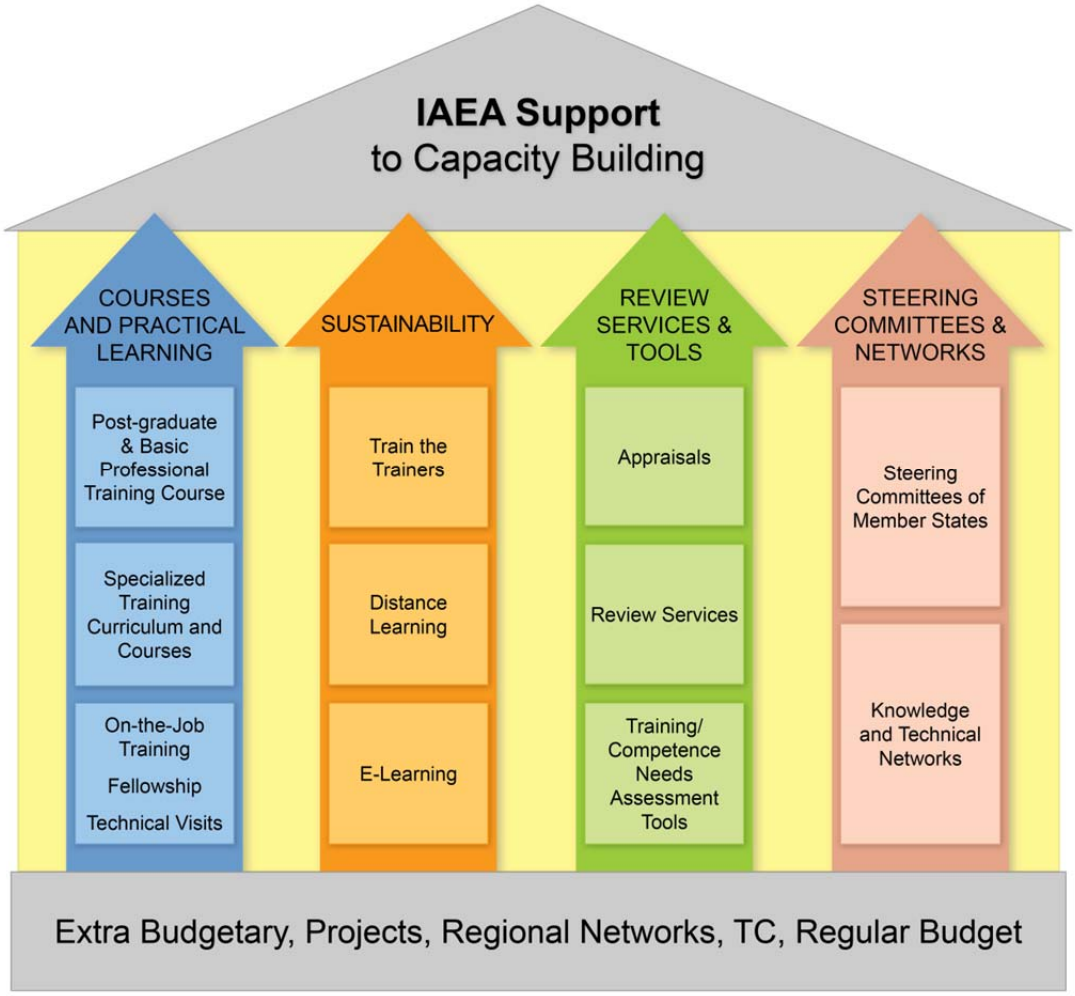

Fig. 2. Overview of IAEA mechanisms to support capacity building.

Training framework

The knowledge framework proposed for the Agency's education and training programme in nuclear safety is shown in Fig. 3, including the areas of competence on which training should be focused and the level of detail, as well as the target groups.

The areas of competence are identified according to the structure of the Agency's safety standards to emphasize the fact that all the training provided by the Agency is based on its standards and on recognized international good practices. The same approach is to be adopted by Member States that are providing nuclear safety training.

At the basic level of knowledge, training is intended to provide a broad overview of nuclear safety concepts and their application to the design and operation of nuclear power plants, fuel cycle facilities and research reactors. This training is primarily targeted at junior professionals who have recently become involved in nuclear safety related activities. However, the training is also appropriate for highly specialized professionals who wish to strengthen their knowledge of aspects of nuclear safety. The Basic Professional Training Course on Nuclear Safety (BPTC) developed by the Agency is the

main course offered at this level. The BPTC comprises 22 chapters covering all areas of safety, including defence in depth, management of safety, safety assessment, site evaluation, design, operation, regulatory control and communication with the public. The Agency offers another basic course on regulatory control, which gives an overview of regulatory frameworks, practices and approaches in line with the Agency's safety standards.

At the specialized level of knowledge, training courses are offered on safety assessment, regulatory control and regulatory functions, operational safety of nuclear power plants, and safety of research reactors and fuel cycle facilities. Target groups are technical staff of regulatory bodies, technical support organizations, operating organizations of nuclear power plants, research reactor operators and users, scientific personnel of research institutes, and educators.

At a more specific expert level, workshops are generally preferred as they provide more appropriate conditions for an effective exchange of information and experience among participants. Some topical courses and workshops at this level are also indicated in Fig. 3.

The framework for education and training is complemented by practical on-the-job training provided on a case by case basis as scientific visits and fellowships under the Agency's auspices.

Workshops held in the framework of the Agency's safety services are a complementary and highly effective form of delivering training and providing for the exchange of experience. This approach has been used in particular in connection with operational safety services in the areas of safety management and safety culture. Training courses held in the framework of the Agency's safety services are primarily used to support 'self-assessments' of safety at regulatory bodies and nuclear power plants. At present, training courses are an integral part of the Agency's review safety services, in particular the Operational Safety Review Teams (OSART) service and the IRRS (Integrated Regulatory Review Service).

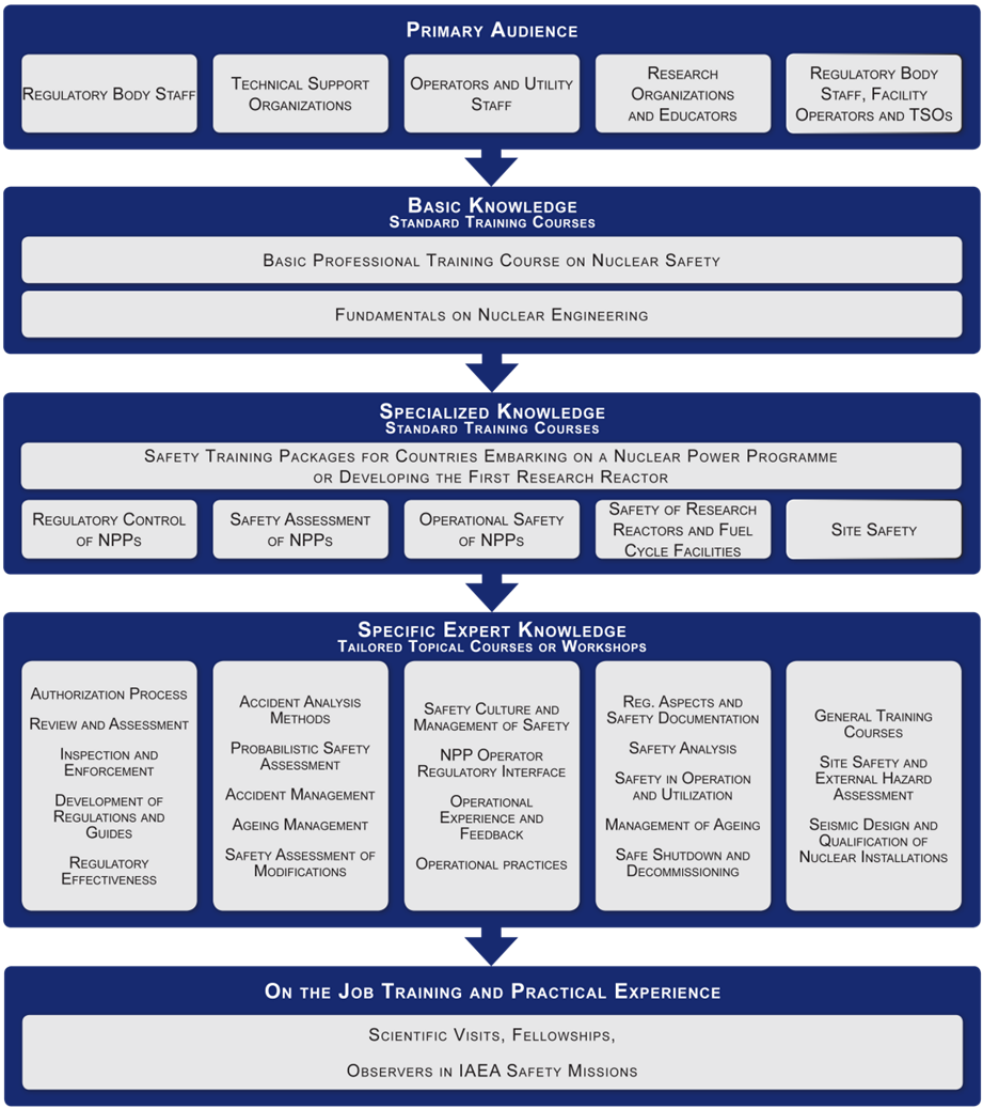

Fig. 3: Knowledge framework for nuclear safety

Train the trainers, self-study and e-learning

In the implementation of the 2001–2012 strategy, a comprehensive portfolio of training materials for train-the-trainers events and multimedia based learning was developed. These packages are available to Member States in DVD format and most of them have been posted as online video lectures on the Agency's public web site, IAEA.org. In the video lectures, Agency staff present and discuss the IAEA safety standards. Video presentations of Agency sponsored workshops are also included. The purpose of providing these materials is to support trainers in the design of training material in accordance with the IAEA safety standards, and to facilitate mutual learning and exchange of experience among Member States. Trainers and trainees can also use these materials for self-study purposes.

Specific train-the-trainers seminars have been delivered in order to assist trainers in the use of the Agency's materials and to tailor the materials to the trainers' needs. The train-the-trainers and e-learning concepts are recognized as being important means of optimizing resources and transferring the skills necessary for building competence in Member States. However, more use could be made of train-the-trainers events; in recent years only a few such events have been held. It is recommended that

train-the-trainers events be actively promoted. Further development of materials in support of training based on the Agency's safety standards is needed. .

On the job training

On the job training as a means of gaining basic practical training is useful for developing adequate skills in technical areas. Different modalities for on the job training, under the supervision of personnel with appropriate expertise, are available for gaining practical experience in specialized facilities. The Agency also provides support for on the job training activities through its fellowship programme.

Competence frameworks and tools for the assessment of training needs

Specific competence profiles have been developed to assist Member States in conducting systematic and harmonized assessments of competence and training needs. With the assistance of the Steering Committee, the Agency has developed and periodically reviewed the guidelines for Systematic Assessment of Regulatory Competence Needs (SARCoN). SARCoN provides a methodology and includes a software tool for its application. SARCoN has been used in more than 22 Member States and is recognized by other international organizations, such as the European Commission. The methodology and software tool can be adapted to topical areas of safety.

Knowledge networks

The Agency has focused on facilitating knowledge networks, bringing together experts from Member States and fostering a global approach to enhancing safety.

The web-based Global Safety Assessment Network platform hosts the Safety Assessment Education and Training (SAET) Programme, which provides a 'self-assessment' methodology, a forum and 'webinars' (web based seminars) on nuclear safety topics. GSAN also supports training by making available information on the Agency's safety services, and a library of the Agency's safety standards and related publications.

In the regulatory area, the International Regulatory Network (RegNet) enables cooperation and the sharing of information among regulatory bodies. It also offers a platform for regulatory bodies to share training materials and other material to support the continuous improvement of regulatory competence and capacity. RegNet also supports the Integrated Regulatory Review Service by facilitating the exchange of information among experts.

The Regulatory Cooperation Forum (RCF) was established to help countries embarking on a nuclear power programme to develop a regulatory body for nuclear power that is effectively independent and competent. The RCF coordinates capacity building activities such as workshops and on the job training offered by States with mature nuclear power programmes, and takes into account support offered by the IAEA and other international organizations such as the European Commission.

These knowledge networks are an important element of the strategic approach which needs to be further developed.

Safety infrastructure, self-assessment tools and education and training peer reviews

Training and guidance in the application of the IAEA safety standards to achieve and sustain a safety infrastructure has been a core element of the strategic approach to education and training for countries

embarking on a nuclear power programme. Standard training modules have been developed and training courses have been delivered on the basis of IAEA Safety Guide No. SSG-16 *Establishing the Safety Infrastructure for a Nuclear Power Programme* [1]. Further work is required to further develop standard training materials[9] as well as the periodic assessment of progress and the systematic assessment of needs.

Specific guidelines for peer reviews of education and training have been produced and used in pilot exercises in the Asian region. These guidelines have been developed in line with the IAEA Action Plan. Advice from the peer reviews of education and training supports the application of the Agency's safety standards and the provision of education and training in the development of the safety infrastructure for a nuclear power programme.

C.2.3. Effective Use of Networking, Regional Cooperation and Regional Training Centres (RTCs)

Networking, regional cooperation and regional training centres play an important role in the implementation of the strategy for education and training. The Education and Training Topical Group (ETTG) of the Asian Nuclear Safety Network (ANSN)[10], supported by the Agency, has been an example of productive regional cooperation and harmonized regional approaches to training. Between 2006 and 2010, the ETTG built a General Competences Framework (GCF) based on Agency publications. The GCF identified different levels of knowledge (basic, medium and expert) and different target audiences (regulatory bodies, operating organizations and technical support organizations). The ETTG made training materials available via the GCF and shared them on its web-based platform. By analysing which parts of the GCF were relevant in their national situations and for their future plans, ETTG Member States can construct a national education and training framework, which they can use for planning and prioritizing external assistance.

In addition to the Asian network, the Agency is increasingly supporting and cooperating with networks such as the Arab Network of Nuclear Regulators (ANNuR)[11], the European Nuclear Safety Regulators' Group (ENSREG)[12], the Forum of Nuclear Regulatory Bodies in Africa (FNRBA)[13] and the Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (Foro).[14]

Regional cooperation and RTCs will continue to play an important role in helping to implement the 2013–2020 strategic approach, and full advantage should be taken of this capability. In particular, RTCs can act as regional nodes for building competence in nuclear safety within the regions with the assistance of the Agency. It would be beneficial for the implementation of the overall strategic approach for the RTCs to be involved, specifically in the following areas of work:

- Continued delivery of education and training activities;

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[9] http://www-ns.iaea.org/tech-areas/safety-infrastructure/default.asp?s=117&l=118

[10] http://ansn.iaea.org/default.aspx

[11] http://gnssn.iaea.org/sites/auth/regnet/thematicregionalnetworks/annur_en/default_en.aspx

[12] http://www.ensreg.eu/

[13] http://gnssn.iaea.org/sites/auth/RegNet/ThematicRegionalNetworks/FNRBA/default.aspx

[14] http://www.foroiberam.org/web/index.php

- Collaboration with the Agency in the promotion of the Agency's safety standards and the development of standardized training materials;
- Assistance to individual Member States, in collaboration with the Agency, in establishing and implementing national strategies for building competence through education and training.

To fulfil this role effectively, due consideration needs to be given to:

- Strengthening RTCs, in particular via long term agreements, promoting quality management systems within RTCs, and on-going evaluation of the effectiveness of RTCs;
- Expanding the inter-centre network to include other training centres in Member States;
- Making continued and extended use of the added value of RTCs in developing and advancing competences in the region, in particular via fellowship programmes, regional workshops to assist States in the development of national strategies, and the development or translation of materials.

Collaborating training centres will play an important supplementary role in assisting the Agency to implement the strategic approach, and will collaborate with RTCs and national training centres; for example, by providing expertise, equipment, lecturers or fellowship opportunities.

Much work remains to be done in networking educational institutions and training centres in the area of nuclear safety, particularly to assist countries embarking on a nuclear power programme.

C.2.4. Management Systems, Competence and Knowledge Management

Adequate management systems are essential for the effective implementation of capacity building programmes in nuclear safety. The IAEA safety standards refer to competence, training, human resources and knowledge management, both in IAEA Safety Requirements and in IAEA Safety Guides. Many of these references recognize the importance of competence, knowledge and training within the various topical areas of safety; some of the most direct references[15] can be found in Refs [2], [3], and [4]. The Agency has increased its efforts, guidance and courses in support of the IAEA safety standards, especially in processes relating to training, management of regulatory competence and development of human resources. These important activities will continue and need to be further developed in the future.

D. Monitoring Process

D.1. Monitoring

To be successful, the strategic approach needs to be adaptable and flexible in order to meet changing needs. Consequently, there is a need for on-going observation and review to ensure that the implementation of the strategic approach continues to meet its objectives.

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[15] Ref. [2], Sections 4.3, 4.4, 5.22; Ref. [3], Section 4.4 under "Managing information and knowledge"; Sections 4.6 and 4.7 under "Competence"; Sections 4.8 to 4.25 under "Awareness and training"; Section 5.6 bullet 7 on "Knowledge management"; Ref. [4], Requirement 18; Ref. [5], Section 4 on "Staffing" and Section 5 on "Training of staff".

This will entail:

- Regular review and assessment of progress made in the development of national strategies, including periodic 'self-assessments', sharing of experience and regional coordination for education and training in nuclear safety. This will enable Member States and the Secretariat to share experience and lessons learned. It will facilitate the evaluation of progress made in the development of the different components of a national strategic approach for capacity building in Member States. It will also facilitate the compliance of Member States with the requirements and recommendations of the relevant IAEA safety standards. The information gained will be used by the Agency to evaluate progress made in implementing the strategic approach.
- Provision by RTCs, universities or other international centres of training activities at an appropriate level of quality and in line with the Agency's safety standards. These institutions play a key role in the regional and global implementation of the strategic approach. The Steering Committee, as well as other advisory groups representing Member States, will continue its work and support the implementation of the 2013–2020 strategic approach.

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 **Preparation**	**Phase II** **Promotion**	**Phase III** **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.

The conclusion of each phase can be marked by key milestones:

- End of Phase I — Guidance for strengthening capacity building through education and training, as requested by Member States, will be available for dissemination within the regions.

- End of Phase II — Relevant tools and guidance will be available to Member States within the regions.
- End of Phase III — Member States will be actively using tools to implement national strategies for building capacity through education and training in nuclear safety.

E. Conclusion

The Strategic Approach to Education and Training in Nuclear Safety for the period 2013–2020 builds upon the experience of implementing the strategic approach to education and training in nuclear safety developed in 2001 (Note by the Secretariat 2001/19). Since 2001, the Agency has devoted significant resources to developing and implementing mechanisms to support capacity building (see Fig. 2). This experience has led to the development of a more comprehensive, refined and better targeted Strategic Approach to Education and Training in Nuclear Safety for the period 2013–2020.

The Action Plan endorsed by General Conference at its 55th session includes an action on capacity building which is directly supported by the strategic approach presented in this Note. Moreover, this strategic approach supports the Action Plan in actions relating to peer reviews, strengthening of regulatory bodies, countries embarking on a nuclear power programme, and communication and dissemination of information.

The Strategic Approach to Education and Training in Nuclear Safety for the period 2013–2020 is in line with the IAEA Medium Term Strategy[16] and complements the Strategic Approach to Education and Training in Radiation, Transport and Waste Safety for the period 2010–2020.[17] Both strategic approaches in nuclear safety and in radiation, transport and waste safety are aligned and support capacity building programmes. Experience in implementing these strategic approaches is expected to strengthen education and training in Member States as well as to pave the way for future efforts to integrate into one strategy the main pillars of capacity building for all areas of safety.

[16] GOV/2010/66.

[17] Note by the Secretariat, 2010/Note 44, "Strategic Approach to Education and Training in the Area of Radiation, Transport and Waste Safety, 2011–2020 (Continuation of the strategic approach 2001–2010)".

Annex

Summary of key achievements in education and training in nuclear safety, 2001–2012

The following tasks were completed over the period 2001–2012 as key achievements:

- Development of basic courses such as the Basic Professional Training Course (BPTC) and the Regulatory Control (RC) course, both also available on the Internet as e-books;
- Development of curricula and 'self-assessment' tools such as the Safety Assessment Education and Training (SAET) programme and Systematic Assessment of Regulatory Competence Needs (SARCoN);
- Establishment of a Steering Committee on Competence of Human Resources for Regulatory Bodies;
- Establishment of the Global Safety Assessments Network (GSAN);
- Long term agreement for holding the IAEA Basic Professional Training Course in the Latin America region;
- Establishment of the Asian Nuclear Safety Network's (ANSN's) Topical Group on Education and Training and agreement with the Korea Institute of Nuclear Safety to provide annual training in line with the IAEA safety standards in the Asia region;
- Development of training packages for countries embarking on a nuclear power programme;
- Updating of training material for postgraduate training and specialized training events;
- Production of comprehensive multimedia materials, including video lectures, and their dissemination on the Internet and in DVD format;
- Development of a centralized Agency web page for training resources.

References

[1] INTERNATIONAL ATOMIC ENERGY AGENCY, Establishing the Safety Infrastructure for a Nuclear Power Programme, IAEA Safety Standards Series No. SSG-16, IAEA, Vienna (2012).

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[4] INTERNATIONAL ATOMIC ENERGY AGENCY, Governmental, Legal and Regulatory Framework for Safety, IAEA Safety Standards Series No. GSR Part 1, IAEA, Vienna (2010).

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