

Feedback from IRS Topical Studies and Events Applied to Safety Standards

The IAEA reviews safety standards periodically to assess the need for their revision to maintain and improve an integrated, comprehensive and consistent set of up-to-date user-friendly and fit-for-purpose safety standards.

The meeting Feedback from IRS topical studies and events to Safety Standards was held in Vienna from 4th to 8th May 2009. The objective of the meeting was to review the recommendations raised in the Incident Reporting System (IRS) topical studies and selected events in IRS database against the IAEA Safety Standards.

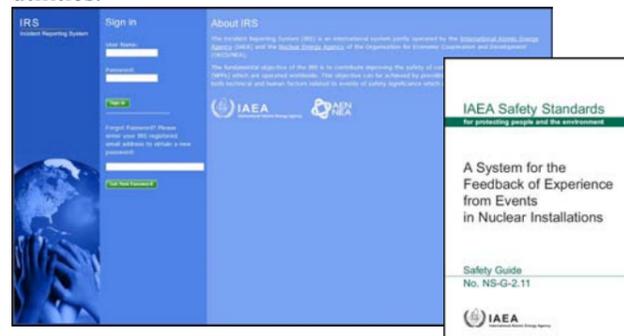
The meeting highlighted the fact that the recommendations made in the topical studies and the lessons learned from significant events have been mostly covered in the requirements and recommendations of the IAEA Safety Standards. This meeting also highlighted the extent to which the operating experience feedback from IRS has already been incorporated in the IAEA Safety Standards, while the identified gaps would provide an important feedback to enhancing the quality of IAEA Safety Standards.

During the meeting all the 16 topical studies published in the IRS web database were reviewed. The participants worked together to define the appropriate reference in the IAEA Safety Standards for each recommendation raised in the topical studies. Where

such references could not be found, recommendations have been made to consider them for inclusion in the relevant IAEA Safety Standards.

Some important gaps were identified in the areas of interaction between the grid and the Nuclear Power Plants and in the foreign material exclusion. The participants recommended that IAEA should consider the above issues in the revision of the concerned Safety Standards. In addition, it is recommended that the IAEA should consider the preparation of or new Nuclear Power Plants because of the great number of reactors under construction or planned in the recent years.

During the meeting, some areas have been marked as good practices which may have to be considered in the development of other materials such as IAEA-TECDOCs, or procedures to be developed/ used at the utilities.



Peer Review of Operational Safety Performance (PROSPER)

The purpose of the PROSPER service is to strengthen the ability of nuclear power plants to prevent operational failures through the identification, analysis and correction of the root causes of programme weakness. It is expected that nuclear power plant operators, in enhancing operational safety performance, conduct their own self-assessment of the effectiveness of their operational performance experience review programmes. An international PROSPER team then reviews the self-assessment by the plant and offers comments and recommendations to strengthen the conclusions of the self assessment. The IAEA Safety Standards together with the expertise of the PROSPER team members themselves form the bases of the review. Since the pilot mission to the Hartlepool Nuclear Power Plant in the UK in 2000, seven PROSPER missions have been conducted throughout the world.



Nuclear Safety Review for the Year 2008

Since 1984, the IAEA has produced an annual Nuclear Safety Review, which provides an overview and analysis of the issues, challenges and activities in nuclear, radiation, transport and waste safety around the world during the year.

In the draft version of the Nuclear Safety Review for the Year 2008, presented to and appreciated to the Board of Governors in March 2009, three general themes were discussed:

- (1) the continuous improvements in strengthening safety worldwide through international cooperation;
- (2) an expected increase of new entrant nuclear power programmes and the expansion of existing programmes;
- (3) and safety and security synergy.

infrastructures, capacity building including education and training; regulatory independence, incident and emergency preparedness and response, spent fuel and radioactive waste management, and multinational aspects of nuclear activities. In the area of safety and security synergy, in 2008 there was increasing awareness that processes need to be in place to ensure that safety activities do not compromise security and vice versa.



Regarding continuous improvements to strengthen safety worldwide, the focus was on operating experience feedback, knowledge networking, self-assessment and peer review. In the areas of new entrant nuclear programmes and expansion of existing nuclear programmes, activities centred on national safety

As part of a continuous improvement process, changes are introduced every year to enhance the usefulness of the document for Member States. Recent major changes include the addition of an Executive Summary, an expansion of the chapter on Global Nuclear Safety Trends, Issues and Challenges and the creation of a Trends, Issues and Challenges section for technical area.

The Secretariat staff has incorporated the comments from the Board of Governors and will have the final version of the Nuclear Safety Review for the General Conference in September 2009.

Education and Training Programmes at the IAEA Department of Nuclear Safety and Security

Capacity Building and Education & Training

Building and maintaining competence in the nuclear field and more specifically in nuclear and radiation safety and nuclear security is a major challenge for countries embarking on nuclear programmes and for countries with expanding and mature nuclear programmes. In this connection, international and national education and training (E&T) activities in the nuclear field are urgently needed to ensure the development and maintenance of safe and secure nuclear energy in the countries concerned. Major efforts must be directed towards attracting sufficient numbers of bright and highly motivated students to the field. However, it is also important to build up and maintain highly qualified human resources at the institutional level, including staff at national regulatory bodies.

Education and Training Programmes

Several General Conference (GC) resolutions dating back to 1991 have emphasized the importance of E&T in establishing and maintaining an adequate radiation protection and nuclear safety infrastructure and have requested the IAEA Secretariat to prepare “a comprehensive proposal for education and training in both radiation protection and nuclear safety”.

- *A sustainable capacity building E&T programme in Member States compatible with the requirements of the IAEA Safety Standards and nuclear security guidance.*
- *An E&T support programme at the IAEA aiming to promote information exchange and strengthen the role of regional centre network.*

In 2000, following the development of education courses in radiation protection, an important milestone was achieved with the preparation of standardized training material and a long term programme for training at regional training centres. Since then, the IAEA has reoriented its E&T programmes in nuclear, radiation, transport and waste safety, nuclear security and emergency preparedness and response to achieving self sustainability in Member States.

Long term objectives in E&T are: (1) to achieve national self-sufficiency in carrying out education and training programmes; (2) to strengthen national radiation protection and nuclear safety and security infrastructures; and (3) to meet immediate national needs in States requesting assistance.

IAEA E&T Training Support Group

Currently, the internal IAEA Education and Training Support Group (ETSG) provides for in-house coordination and advice on activities supporting E&T delivered by the IAEA to Member States with a view to optimizing resources, continuously improving effectiveness and avoiding duplication between IAEA programmes.

The main outcomes of the ETSG are: the IAEA Policy on Education and Training Support to Member States, the establishment of an internal web site for sharing information on IAEA activities, a comprehensive glossary of E&T related terms is under development and the first seminar on the Integrated Approach to Capacity Building and Human Resources Development will be offered to all IAEA professional staff in 2009.

The Department of Nuclear Safety and Security (NS) Working Group on Coordination of E&T Support to Member States

In April 2009, the NS working group on Coordination of Education and Training Support to Member States was established to help ensure that E&T support to Member States is provided, when practical, in an integrated, consistent and optimized manner, and in-line with the IAEA policy on E&T. The working group provides a forum for sharing knowledge, experience and good practices, particularly in methods for curriculum development, standardized syllabi and training material; for developing an E&T knowledge base repository; and for planning, implementing and evaluating the department’s E&T activities

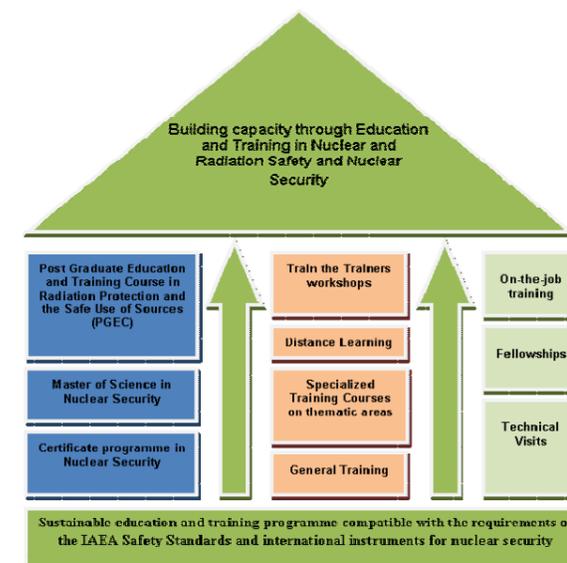
E&T activities in the Department of Nuclear Safety and Security



The departmental E&T programme is comprehensive and compatible with the requirements of the IAEA Safety Standards, security guidelines and related international instruments. It includes educational courses such as post graduate courses, Master of Science or Certificate courses; basic professional and specialized training courses, on-the-job training, technical visits and fellowship programmes. The programme also includes the concept of network centres to strengthen capacity building at national, regional and international levels.

The Post Graduate E&T Course in Radiation Protection and the Safe Use of Sources (PGEC) has been run for many years. It provides a very comprehensive level of E&T for professionals in radiation protection and safety practitioners. An educational programme in Nuclear Security, including a Master of Science programme and a Certificate programme is intended to be published in 2009. Basic professional training courses in nuclear safety are also offered and regional cooperation in nuclear safety in the Asian region is supported through the E&T group of the Asian Nuclear Safety Network (ANSN).

The department also provides specialized courses of short duration. These vary from very technical courses for narrow target audiences, e.g. transport, individual monitoring and emergency response, to more generalized courses for categories of persons such as regulators. Such courses reflect the requirements of the relevant sections of the standard syllabus but generally go on to develop the subject matter or equip the student with particular specific skills.



In the area of safety of nuclear installations, E&T focuses on providing for regulatory competence, developing guidelines and tools for the systematic assessment of training needs and networking through the establishment of a steering committee for human resources and competence in regulatory bodies.

The training programme in nuclear security can be tailored to the needs of the various organizations responsible for nuclear security and it covers all areas of nuclear security. The department also assists States with the establishment of Nuclear Security Support Centres (NSSC) to accelerate and ensure the dissemination of sustainable nuclear security knowledge, skills and culture in a country.

The system of training in the area of emergency preparedness and response is organised in accordance with the requirements for training, drills and exercises, as in the IAEA Safety Requirements GS-R-2. Training is based on the concept of achieving self-sustaining E&T in Member States. Competence is acquired, developed and maintained through an established programme of training. The training covers a wide audience, from emergency managers and planners, to staff of regulatory authorities and civil protection personnel, among others.

Tailored workshops and training events are implemented in several areas of nuclear and radiation safety and nuclear security. More practical and on the job training is supported through fellowships, extension of basic courses and simulator based tools for safety assessment. Training materials and video presentations in the application of the IAEA safety standards and other material produced in the department is made available via the department’s website (<http://www-ns.iaea.org>).