



International Atomic Energy Agency

BOARD OF GOVERNORS GENERAL CONFERENCE

GENERAL Distr.
Original: ENGLISH

Item 13 of the Conference's provisional agenda
(GC(46)/1)

MEASURES TO STRENGTHEN INTERNATIONAL CO-OPERATION IN NUCLEAR, RADIATION, TRANSPORT AND WASTE SAFETY¹

Report by the Director General

1. This document contains the following reports prepared pursuant to safety-related Board decisions and General Conference resolutions:

- Attachment 1 report on the development of an international research reactor safety enhancement plan;
- Attachment 2 report on the implementation of the Revised Action Plan for the Safety and Security of Radiation Sources;
- Attachment 3 report on radiological criteria for long-lived radionuclides in commodities;
- Attachment 4 report on safety in the transport of radioactive material;
- Attachment 5 report on the implementation of actions relating to the safety of radioactive waste management
- Attachment 6 report on preparations for the First Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management;
- Attachment 7 report on education and training in nuclear radiation, waste and transport safety; and

¹ The Nuclear Safety Review for the Year 2001, prepared in the light of the discussion of a draft during the March 2002 session of the Board (GOV/2002/4), has been published in hard copy and posted on the WorldAtom web site. In previous years, an extended version of the Nuclear Safety Review, supplemented with updated and more detailed information, was made available to Member States as an information document for the General Conference (most recently in document GC(45)/INF/3). In the interests of simplicity and avoiding duplication, this approach has been discontinued. Instead, the Secretariat will henceforth make available, for the March sessions of the Board, in addition to the draft Nuclear Safety Review for the previous year, detailed reports on the activities of the Agency during the previous year relating to its two statutory functions in the safety area: establishing safety standards and providing for their application. As the information in question will be available - following its consideration by the Board - to all Member States, reports on safety-related activities of the Agency will be submitted to the General Conference only pursuant to the relevant General Conference resolutions.

Attachment 8 report on actions arising out of the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

2. Reports on (a) the results of a meeting, to be held from 19 to 23 August, on the Code of Conduct on the Safety and Security of Radioactive Sources and (b) the findings of the International Conference on Occupational Radiation Protection due to take place in Geneva from 26 to 30 August will be issued in Addenda to this document.

RECOMMENDED BOARD ACTION

3. It is recommended that the Board take note of the reports contained in Attachments 1-8 to this document.

THE SAFETY OF NUCLEAR RESEARCH REACTORS

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.A, the General Conference endorsed a decision of the Board to request the Secretariat to develop and implement, in conjunction with Member States, an international research reactor safety enhancement plan which would include the following elements:

- the conduct of a survey of research reactor safety in Member States;
- the preparation of a Code of Conduct on the safety of research reactors; and
- the exploration of possible means to strengthen the system for monitoring the safety of research reactors.

2. Also in resolution GC(45)/RES/10.A, the General Conference requested the Secretariat to continue monitoring closely research reactors subject to Agency project and supply agreements and to assist Member States with such reactors in fulfilling all relevant safety obligations.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2001 SESSION

Survey of research reactor safety in Member States

3. On 14 January 2002, in preparation for the development of the international research reactor safety enhancement plan, the Secretariat sent questionnaires to 66 Member States with research reactors in order to gather comprehensive information about the reactors' safety status. As of 19 July 2002, responses had been received from 37 Member States. The Secretariat, which has started the process of analysing the responses already received, has sent reminders to the other Member States.

Preparation of a Code of Conduct

4. An open-ended meeting, attended by 39 technical and legal experts from 21 Member States, was held in May 2002 to prepare a Code of Conduct on the Safety of Research Reactors. The experts produced a first draft of the Code of Conduct, having agreed

- that it would differentiate between the responsibilities of the State, the regulatory body and the facility operator;
- that there would be a graded approach in the sense that the applicable requirements would vary depending on the hazards associated with the facility;
- on the conditions that must be fulfilled and the measures taken in order to ensure safety during periods of extended facility shutdown;
- and on the conditions that must be fulfilled and the measures taken in order to ensure safety during facility decommissioning.

The draft, copies of which are available on request from the Secretariat, will be further developed at the next open-ended meeting, which will take place from 16 to 20 December 2002. At that meeting, attention will focus on - inter alia - a mechanism for monitoring the implementation of the Code of Conduct and the role of the Secretariat.

Monitoring research reactor safety and helping to improve it

5. Missions of various types are being conducted as indicated below in the table entitled “Monitoring of and assistance in improving the safety of research reactors subject to project and supply agreements” and the table entitled “Other activities relating to research reactor safety”.

6. In addition, the Secretariat has organized training activities relating to safety culture, emergency preparedness, safety analysis, extended shutdown and decommissioning, and regulatory control, as indicated below in the table entitled “Training activities involving research reactors subject to project and supply agreements”.

7. The missions conducted and the assistance and training provided - in many cases, as part of the Agency’s technical co-operation with Member States - have had positive effects; the safety concerns raised during them are being addressed by the research reactor operators and/or the regulatory bodies, and the safety levels at the research reactors are improving. In particular, in one Member State, the regulatory body now has the infrastructure necessary for the discharge of its functions; in one Member State without a regulatory body, the establishment of a “safety committee” by the operating organization has led to the improved supervision of research reactor operations and to the introduction of a radiation protection and emergency preparedness and response programme; research reactor operations and maintenance personnel in several Member States have been trained in areas such as emergency preparedness and procedures for safe shutdown and decommissioning; quality assurance programmes are now being implemented in several operating organizations; and the expertise in safety assessment has been enhanced in various regions.

**Monitoring of and assistance in improving the safety of research reactors
subject to project and supply agreements**

Dem. Rep. Congo	Kinshasa RR	2002	Evaluation of achievements (postponed from June 2002)
Indonesia	Bandung RR	Mar 2002	Follow-up INSARR mission
Romania	Pitesti RR	May 2002	INSARR mission
Dem. Rep. Congo	Kinshasa RR	May 2002	Expert mission on radiation protection
Dem. Rep. Congo	Kinshasa RR	May 2002	Expert mission on strategic utilization plan
Iran, Islamic Rep.	Tehran RR	June 2002	Assistance with seismic safety
Indonesia	Serpong RR	June 2002	Review of safety analysis report
Nigeria	Abuja RR	July 2002	Establishment of regulatory body
Chile	La Reina RR	Aug 2002	INSARR mission
Vietnam	Dalat RR	Aug 2002	Pre-INSARR mission
Nigeria	Zaria RR	Aug 2002	Review of docs. and regulatory framework

Other activities relating to research reactor safety

EC/Jt. Res. C.	Petten RR	Continuing	Assistance with PSA
China	Beijing	Dec 2001	Assistance with management of ageing
Netherlands	Delft RR	Feb 2002	Follow-up INSARR mission
Indonesia	Kartini RR	Mar 2002	Assistance with seismic safety
EC/Jt. Res. C.	Petten RR	Mar 2002	INSARR mission
Uzbekistan	Tashkent RR	Mar 2002	Follow-up mission
EC/Jt. Res. C.	Petten RR	May 2002	Assistance on safety culture
Libyan Arab J.	Tajoura RR	May 2002	Expert mission on safety analysis
Bangladesh	AERE RR	June 2002	INSARR mission
IAEA HQ, Vienna		June 2002	Meeting on the safety analysis of RRs
IAEA HQ, Vienna		July 2002	CRPs to improve the safety analysis of RRs

Training activities involving research reactors subject to project and supply agreements

Romania	Regional	Oct 2001	Emergency preparedness
Rep. of Korea	Regional	Nov 2001	Safety analysis tools for RRs
Latvia	Regional	Nov 2001	Extended shutdown and decommissioning
Chile	Regional	Dec 2001	Safety culture
Rep. of Korea	Regional	May 2002	Safety analysis tools for RRs
Rep. of Korea	Regional	May 2002	Emergency preparedness
USA	Regional	June 2002	Train the trainers
Indonesia	National	June 2002	Conduct of operations
Indonesia	National	July 2002	Qualification of inspectors

IMPLEMENTATION OF THE REVISED ACTION PLAN FOR THE SAFETY AND SECURITY OF RADIATION SOURCES

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.A, the General Conference endorsed a decision of the Board to request the Secretariat to implement the Revised Action Plan for the Safety and Security of Radiation Sources contained in the Attachment to document GC(45)/12.
2. The Board decision was taken on 10 September 2001, the day before the 11 September terrorist attacks on the United States of America, attacks which - within the Agency - led to a stronger focus on protection against nuclear terrorism. Implementation of the Revised Action Plan is therefore taking place in conjunction with efforts to strengthen “the Agency work relevant to preventing acts of terrorism involving nuclear materials and other radioactive materials”. Those efforts are being reported on in document GC(46)/INF/6 on “Nuclear security - progress on measures to protect against nuclear terrorism”.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE’S 2001 SESSION¹

Regulatory Infrastructure

3. A draft Safety Guide on the protection and safety of radiation sources in medicine, agriculture, research, industry and education was circulated to Member States for comment in July, and it is expected that the final draft will be ready for submission to the Commission on Safety Standards for endorsement during the first half of 2003. A companion Safety Report on approaches to the regulation of the radiation protection and safety of radioactive sources is in the final stage of preparation for publication.
4. Activities within the framework of the Model Project for upgrading radiation protection infrastructure in Africa, East Asia and the Pacific, Europe, Latin America and West Asia have continued. During the past year, five reviews have been performed of regulatory infrastructure for radiation safety established through the Model Project - and 11 more are scheduled for the next few months. In addition, plans have been made for a number of follow-up reviews. The Secretariat is revising technical document IAEA-TECDOC-1217, “Assessment by peer review of the effectiveness of a regulatory programme for radiation safety”, with a view to facilitating self-assessments by Member States .

¹ The original Action Plan [for the Safety of Radioactive Sources and the Security of Radioactive Materials] involved 15 actions, while the Revised Action Plan involves 27 new actions. Rather than reporting in detail on the status of each action, the Secretariat provides here a summary of key activities carried out under each of the seven Revised Action Plan headings.

Source Management and Control, including the Management of Disused Sources

5. A technical document on the management of high-activity disused sources (IAEA-TECDOC-1301) is in press, and one on procedures for the conditioning and storage of long-lived spent sealed sources and one on disused source management involving disposal in boreholes are at the final draft stage. The final draft of a Safety Guide on the safety and security of radiation sources will be submitted to the members of the Radiation Safety Standards Committee (RASSC) in September for consideration at a subsequent RASSC meeting.

Categorization of Sources

6. The Categorization of Radiation Sources (IAEA-TECDOC-1191) is being revised to take account of new emergency response and security needs.

Response to Abnormal Events

7. A technical document on national strategies for the detection and location of orphan sources and their subsequent management is in final draft form and is due to be published before the end of the year. Technical documents on the prevention and detection of and response to the inadvertent movement of or illicit trafficking in radioactive materials have been submitted to the Publications Committee.

8. The status of several actions relating to emergency response is reported on in Attachment 8 to this document.

Information Exchange

9. A workshop for countries of West and Central Asia on the safety and security of radiation sources is to be held in Kazakhstan in August, and further such regional workshops are to be held in Mexico in September and Japan in November.

10. The Secretariat has begun planning for the Second International Conference of National Regulatory Authorities with Competence in the Safety and Security of Radiation Sources, which will take place in St. Petersburg in 2004 as a follow-up to a conference held in Buenos Aires in December 2000.

11. RADEV (the Agency's international database on unusual radiation events) is being made more user-friendly following international field trials involving users in a number of Member States. There are plans to issue a RADEV users' manual before the end of the year.

12. An International Catalogue of Sealed Radioactive Sources which is under development - and so far contains data on over 4000 sources, about 3500 devices incorporating sources and about 1000 manufacturers - is being tested for use as one of the Emergency Response Centre's tools.

13. The Secretariat is developing a communications tool kit which it plans to make available on the Agency's web site during the 2002 session of the General Conference.

Education and Training

14. The actions relating to education and training in the original Action Plan have been completed except for the preparation of a few practice-specific training modules. Several practice-specific training modules are now available, including some for regulators.²

International Undertakings

15. In May 2002, the Secretariat requested from Member States information about how they were implementing the Code of Conduct on the Safety and Security of Radioactive Sources. The Technical Committee meeting from 19 to 23 August to consider the effectiveness of the Code of Conduct will take account of the responses received from Member States.

16. The Secretariat has requested Member States to comment by 31 July 2002 on a proposal regarding the process for the development, testing and evaluation of a new warning sign for dangerous radioactive sources.

² See, in this connection, paragraphs 13-20 of Attachment 7.

RADIOLOGICAL CRITERIA FOR LONG-LIVED RADIONUCLIDES IN COMMODITIES

BACKGROUND

1. In September 2000, in resolution GC(44)/RES/15, the General Conference requested the Secretariat “to develop, using the Agency’s radiation protection advisory mechanisms and in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, during the next two years and within available resources, radiological criteria for long-lived radionuclides in commodities, particularly foodstuffs and wood, and to submit them to the Board of Governors for its approval”.

2. On 10 September 2001, the Board had before it, in document GOV/2001/29-GC(45)/12, a report on the status of the work being done on developing the requested criteria. It noted the difficulties encountered in responding to resolution GC(44)/RES/15 and expressed the wish that the Secretariat continue working towards meeting the request made of it in that resolution, taking into account the recommendations set out in paragraph 17 of document GOV/2001/29-GC(45)/12, using the mechanisms based on the Radiation Safety Standards Committee (RASSC), the Waste Safety Standards Committee (WASSC) and the Commission on Safety Standards (CSS) and inviting relevant international organizations to co-operate as appropriate. On 21 September 2001, the General Conference endorsed the Board’s request.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE’S 2001 SESSION

3. A group of consultants and a Technical Committee convened by the Secretariat met in December 2001 and February 2002 respectively for the purpose of continuing with the effort to produce a consensus on the issues which must be resolved in order to meet the request made by the General Conference in September 2000.

4. The Technical Committee, in which FAO and WHO were represented, recommended that the safety guidance developed by the various bodies convened by the Secretariat not include radiological criteria for foodstuffs and drinking water. In addition, it concluded that the current values in the Codex Alimentarius, which relate to the period immediately following a nuclear accident, were not directly applicable to the control of normal commerce involving foodstuffs, and it recommended that the FAO/WHO Codex Alimentarius Commission (CAC), which is responsible for specifying maximum activity concentrations of radionuclides in foodstuffs, review the foodstuff issue and develop guidance. The CAC is doing so in co-operation with the Secretariat. At the same time, WHO is reviewing its standards relating to radionuclides in drinking water.

5. The outcome of the meetings of the group of consultants and the Technical Committee was a draft Safety Guide relating to commodities other than foodstuffs and drinking water¹ that was submitted to RASSC and WASSC, which considered it at a joint meeting held in March 2002.

¹ The term *commodity* is being used to mean an article or raw material that can be bought or sold, including foodstuffs, water, metals, concrete, soil, plastics, wood, paper, etc., as well as mixtures of substances and materials, and goods, merchandise and consumer products made up of them.

6. RASSC and WASSC agreed that the draft Safety Guide should be sent to Member States for comment as the next step in the process prescribed for the approval of Agency safety standards. The draft Safety Guide, entitled “Radionuclide content in commodities not requiring regulation for purposes of radiation protection”, was sent to Member States on 9 May 2002, with a request that comments be submitted to the Secretariat by 15 September 2002 at the latest. The Secretariat will revise the draft Safety Guide in the light of the comments received from Member States.

7. It is expected that a revised draft of the Safety Guide will be submitted to RASSC, WASSC and the Transport Safety Standards Committee (TRANSSC) for consideration at a joint meeting in December 2002. After endorsement by the three committees, the draft Safety Guide will be submitted to the CSS for approval.

8. The Board and the General Conference will be kept informed of the progress being made with regard to the radiological criteria for long-lived radionuclides in foodstuffs, drinking water and other commodities being developed by the CAC, WHO and the Agency respectively. The Secretariat will do its utmost to ensure consistency between the three sets of radiological criteria.

SAFETY IN THE TRANSPORT OF RADIOACTIVE MATERIAL

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.B, the General Conference, inter alia:
 - (a) requested the Secretariat to continue to seek regularly from each Member State data on how it regulates the transport of radioactive materials;
 - (b) expressed satisfaction with the progress made in revising the Regulations for the Safe Transport of Radioactive Material (the Agency's Transport Regulations);
 - (c) called for further efforts to examine and further improve measures and international regulations relevant to the international maritime transport of radioactive materials and spent fuel;
 - (d) encouraged further Member States to avail themselves of the Transport Safety Appraisal Service (TranSAS);
 - (e) requested the Secretariat to ascertain whether there were available spare resources to satisfy further requests for TranSAS missions from developing Member States;
 - (f) invited Member States availing themselves of TranSAS to consider offering to one or more representatives of concerned States the opportunity to accompany TranSAS missions as observers, with the consent of the recipient Member State; and
 - (g) welcomed the convening by the Secretariat of a Conference on the Safety of Transport of Radioactive Material early in 2003.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2001 SESSION

Information on how Member States regulate transport

2. In 2001, the Agency's transport safety web page carried inputs from 40 Member States on how they regulated the transport of radioactive material. In March 2002, the Secretariat again requested Member States to provide inputs (or updated inputs). As of 19 July 2002, two additional Member States had provided inputs and 25 of the aforementioned 40 Member States had provided updated inputs in response to the Secretariat's request. Thus, 2002 information was available for 27 Member States, with 2001 information still available for 15. An updated listing will be posted on the transport safety web page in August.

Revision of the Agency's Transport Regulations

3. In June 2002, following the 2000/2001 review cycle, the Commission on Safety Standards (CSS), on the recommendation of the Transport Safety Standards Committee (TRANSSC), endorsed - for publication in 2003 - an "as amended" version of the 1996 edition of the Agency's Transport Regulations which, although containing (in addition to changes of detail and editorial changes) some substantial changes vis-à-vis the 1996 edition, will not affect the certification of package designs. There will accordingly be an "as amended 2003" publication rather than a new edition of the Agency's Transport Regulations issued in 2003.

4. The next two-year review cycle was initiated early in 2002 with a request for proposals for changes to the Agency's Transport Regulations, to be considered by a revision panel. Approximately 200 proposals have been received. The revision panel will consider these proposals from 2 to 6 September 2002 and make recommendations on them for consideration by TRANSSC in February 2003. The views of the revision panel and TRANSSC will assist in determining whether a revised edition of the Agency's Transport Regulations will be necessary in 2005.

Improving measures and regulations relevant to maritime transport

5. The Secretariat is continuing to work closely with the International Maritime Organization (IMO), which is preparing to publish new emergency response guides that incorporate detailed inputs provided by the Secretariat. The IMO, which has made the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (the INF Code) mandatory for its Member States, is in the process of making much of the International Maritime Dangerous Goods (IMDG) Code, now incorporating all the requirements of the Agency's Transport Regulations, mandatory for them.

TranSAS Missions

6. The Secretariat has so far received requests for TranSAS missions from Brazil, Panama, Slovenia, Turkey and the United Kingdom. The TranSAS mission to Slovenia took place in 1999, and the mission report was made available to the General Conference in that year. The TranSAS missions to Brazil and the United Kingdom took place in April and June 2002 respectively, and the mission reports are being prepared. A pre-mission visit to Turkey took place in October 2001, and arrangements were recently agreed upon for funding the requested TranSAS mission from Agency technical co-operation resources. Preliminary discussions are being held with the Panamanian authorities about the planning of a TranSAS mission that will cover, inter alia, operations in the Panama Canal.

7. With regard to the General Conference's request that the Secretariat ascertain whether there are spare resources available to satisfy further requests for TranSAS missions from developing Member States, TranSAS missions to developing Member States can be financed from technical co-operation resources if they are requested as high-priority components of the requesting countries' national programmes of technical co-operation with the Agency in accordance with the established procedures of the Agency's Technical Co-operation Programme. The financial resources for TranSAS missions to other Member States must be provided by those Member States.

8. With regard to the General Conference's invitation to Member States availing themselves of TranSAS to consider offering to one or more representatives of concerned States the opportunity to accompany TranSAS missions as observers, the team which carried out the TranSAS mission to the United Kingdom was - with the consent of the United Kingdom Government - accompanied by three observers, the aim being to increase confidence in the team's findings.

The 2003 International Conference on the Safety of Transport of Radioactive Material

9. After lengthy informal consultations, it has been decided that the Conference will take place in Vienna from 7 to 11 July 2003. At a technical programme committee meeting in March 2002, representatives of 16 Member States and two international organizations agreed on the Conference's programme, which will include sessions on background issues, liability, the Agency's Transport Regulations and the regulatory process, potential improvements in the regulatory regime, radiation protection in transport, packaging for various types of radioactive material, compliance and quality assurance in transport, emergency preparedness and response, and communications with the public and between governments. The announcement of the Conference and a request for papers will be transmitted to Member States in August 2002.

IMPLEMENTATION OF ACTIONS RELATING TO THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

BACKGROUND

On 10 September 2001, the Board requested the Secretariat to implement the actions proposed in the Report on the Safety of Radioactive Waste Management contained in Attachment 1 to document GOV/2001/31-GC(45)/14, subject to the availability of resources, and to inform it, as appropriate, of their implementation. On 21 September 2001, in resolution GC(45)/RES/10.A, the General Conference endorsed the Board's request.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2001 SESSION

- **Action 1 Develop a common framework for the disposal of different types of radioactive waste.**

Work is under way on the preparation of a document providing a common framework of options appropriate for the management of different types of waste. The document will indicate how the different management options can comply with the basic safety principles for radioactive waste management. A draft of the document will be examined in September by the Subgroup on Principles and Criteria of the Waste Safety Standards Committee (WASSC).

- **Action 2 Assess the safety implications of the extended storage of radioactive waste and of any future reconditioning which may be necessary.**

A document on the safety implications of the long-term storage of radioactive waste is being prepared. It will include consideration of the ethical aspects and the sustainability of the long-term storage of long-lived waste. A draft of the document will be examined by WASSC's Subgroup on Principles and Criteria in September. This topic will also be considered at the International Conference on Issues and Trends in Radioactive Waste Management due to take place in Vienna from 9 to 13 December 2002.

- **Action 3 Promptly develop safety standards for geological disposal addressing, inter alia, issues of human intrusion, institutional control, retrievability and the content of the safety case.**

The development of safety requirements for geological disposal is well under way. A draft safety requirements document will be examined by WASSC in December.

- **Action 4 Develop an internationally accepted and harmonized approach for controlling the removal of materials and sites from the regulatory system.**

This action is part of the current work on the development of radiological criteria for long-lived radionuclides in commodities, in the course of which a draft Safety Guide entitled “Radionuclide content in commodities not requiring regulation for purposes of radiation protection” has been prepared (see Attachment 3 to this document).

- **Action 5 Develop a structured and systematic programme to ensure adequate application of the Agency’s waste safety standards.**

The Secretariat is developing standard packages of training material related to the safety of radioactive waste and is organizing radioactive waste management training courses within the context of the Agency’s technical co-operation activities. In addition, it is developing a regional programme for training (in Spanish) in radioactive waste management for Latin American countries.

- **Action 6 Explore ways to ensure that information, knowledge and skills concerning radioactive waste management are made available to future generations.**

A draft document has been prepared on the use of archiving as one means of preserving knowledge about radioactive waste disposal facilities for future generations. It will be examined by WASSC’s Subgroup on Principles and Criteria in September.

- **Action 7 Develop a step-by-step programme of work aimed at addressing the broader societal dimensions of radioactive waste management, including an appropriate mechanism to advise on such a programme and assess its suitability and progress.**

Information about the activities of Member States in the area of societal interaction has been examined by a group of consultants from a broad range of disciplines, who have proposed some basic principles which could be applied in guiding interactions between concerned parties (stakeholders) in Member States and also in guiding Agency activities. As a separate initiative, the Secretariat is considering ways in which to keep stakeholders better informed about, and possibly involve them in, the development of international waste safety standards. The subject of stakeholder involvement in waste repository siting decisions will be addressed at the aforementioned International Conference on Issues and Trends in Radioactive Waste Management.

LOOKING AHEAD

The Secretariat expects that the seven activities will be fine-tuned and expanded in the light of the conclusions of the International Conference on Issues and Trends in Radioactive Waste Management.

PREPARATIONS FOR THE FIRST REVIEW MEETING OF THE CONTRACTING PARTIES TO THE JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.A, the General Conference, noting with satisfaction that the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention) had entered into force on 18 June 2001, appealed to all Member States which had not taken the necessary steps to become Contracting Parties to the Joint Convention to do so in time to attend the First Review Meeting of the Contracting Parties.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2001 SESSION

2. At a meeting of the Contracting Parties held from 10 to 14 December 2001 in order to prepare for the First Review Meeting and attended by representatives of all 27 Contracting Parties,¹ three documents concerning the rules and arrangements for conducting meetings of the Contracting Parties - and essential for implementation of the Joint Convention - were approved: the *Rules of Procedure and Financial Rules*, *Guidelines regarding the Review Process* and *Guidelines regarding the Form and Structure of National Reports* (issued as documents INFCIRC/602, 603 and 604 respectively).²

3. Also at that meeting, the Contracting Parties decided: to hold an organizational meeting in Vienna from 7 to 11 April 2003; that the First Review Meeting would start on Monday, 3 November 2003, with a probable duration of two weeks (the final decision regarding the duration to be taken at the organizational meeting); and that the national reports for the First Review Meeting should be submitted to the Agency's Secretariat by the Contracting Parties not later than 5 May 2003.

¹ As of 19 July 2002, there were still 27 Contracting Parties, as follows: Argentina, Austria, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Luxembourg, Morocco, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and the United Kingdom.

² A report on the 10-14 December 2001 meeting was issued in document GOV/INF/2002/3. The report and the three INFCIRC documents have also been made available on the Internet.

EDUCATION AND TRAINING IN NUCLEAR, RADIATION, TRANSPORT AND WASTE SAFETY

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.C, the General Conference stressed “the special importance of education and training in nuclear, radiation, transport and waste safety, as well as in other areas of nuclear science and technology” and urged the Secretariat “to implement the Strategic Plan as mentioned in the Note by the Secretariat ‘2001/Note 20’ and conclude long-term formal agreements with regional centres for education and training activities” and “to continue to strengthen, subject to the availability of resources, its current efforts in this area, and in particular to assist Member States at regional and national training centres and collaborating institutions that would arrange for such education and training to be conducted in the relevant official languages of the Agency”.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE’S 2001 SESSION

2. A major objective has been helping Member States to put into place sustainable programmes of education and training in nuclear, radiation, transport and waste safety, with a view to promoting safety and the application of the Agency’s safety standards. The main activities have focused on: the preparation of standard training material; the development of distance learning tools; “training the trainers”; and providing advisory services to Member States.

Nuclear safety¹

3. Within the framework of technical co-operation projects for the Europe region, a basic professional training course on nuclear safety and a training course on safety assessment to assist decision-making were held in France and Spain respectively in May 2002 and a training course on the management of operational safety at nuclear power plants and a workshop on safety analysis related to the life extension of nuclear power plants were held in Germany and Slovenia respectively in June 2002.

4. Within the framework of an extrabudgetary programme on the safety of nuclear installations in South East Asian, Pacific and Far East countries, workshops were held in the Republic of Korea on - inter alia - safety analysis methodology (in November 2001) and emergency preparedness and response for research reactors (in June 2002).

5. A regional workshop on the Agency’s nuclear safety standards and guides was held in Japan in December 2001. The lectures, given by Agency staff members, were video-recorded, and the edited recordings are now available in CD-ROM form with viewgraphs for self-study of the Agency’s nuclear safety standards.

6. In June 2002, a “train the trainers” course on a wide range of research reactor safety issues and on training methodology was held at Argonne National Laboratory, United States

¹ In the area of nuclear safety, over 100 training courses and other training events are being organized by the Secretariat every year. They are being organized within the framework of various technical co-operation projects and extrabudgetary programmes and, in many cases, are associated with the provision of Agency safety services.

of America. Use was made of the extensive standard nuclear safety education and training material that the Secretariat has been preparing.

7. Standard material for training in the regulatory control of nuclear power plants has been published in the Agency's Training Course Series. It is already available in CD-ROM form and on the Agency's nuclear safety web site.

8. Following the completion in 2001 of the first phase of an extrabudgetary programme on the accident analysis of RBMK nuclear power plants, with the focus on comparing Russian and Western accident analysis computer codes and methodologies for selected accident scenarios, work has started on developing and validating - for installation at the Kursk NPP - a comprehensive safety and accident analysis system for training nuclear power plant personnel.

9. A technical document entitled "Training the staff of the regulatory body for nuclear facilities: A competency framework" (IAEA-TECDOC-1254) was issued (in English) in November 2001, and a Russian version is being prepared. The proposed framework is being tested in Brazil, the Czech Republic, Pakistan and the Russian Federation.

10. Training continued to be provided for regulators and operators through the Agency's safety services, with the focus on guidance for and peer reviews of self-assessment at nuclear power plants and research reactors. Several workshops were conducted on operational safety - including safety management and safety culture - at nuclear power plants and research reactors.

11. The Secretariat has established an advisory service designed to assist Member States in reviewing their national education and training programmes, and there have already been pilot missions to South East Asian, Pacific and Far East countries.

12. A table with information about the Agency's nuclear safety education and training material will be provided by the Department of Nuclear Safety on request.

Radiation, transport and waste safety

13. Following an evaluation of "IAEA Education and Training Activities for Radiation Protection", reported on in Attachment 2 to document GOV/INF/2002/7, the External Evaluation Panel concluded that "the Agency has performed well in providing radiation protection education and training activities with high quality technical content. A significant majority of the Agency's training participants and beneficiary institutions in the Member States are satisfied with the training they are receiving, and, in many cases, contributing to."

14. Postgraduate educational courses in radiation protection and the safety of radiation sources were held at regional centres in Argentina (in Spanish), Belarus (in Russian), Malaysia and South Africa (in English) and the Syrian Arab Republic (in Arabic). The courses, based on the Secretariat's Standard Syllabus, were attended by about 100 participants.

15. A large number of workshops and other training events relating to radiation, transport and waste safety were organized within the framework of the Model Projects on upgrading radiation protection infrastructure in Africa, East Asia and the Pacific, Europe, Latin America and West Asia.

16. During national and regional training events, the Secretariat used training modules covering topics such as: radiation protection in diagnostic radiology, radiotherapy and nuclear medicine; the authorization and inspection of radiation sources in industrial radiography; emergency preparedness; and the safe transport of radioactive material. The training modules have been distributed for testing, and feedback from the training events and the testing is being taken into account in the process of validating them.

17. Secretariat staff are participating in the meetings of a European Union working group on education and training in different areas of radiation protection. Their participation has already resulted in improved co-operation between the Secretariat and the European Union.

18. In March 2002, a Technical Committee on the implementation of the strategy for education and training in radiation and waste safety agreed on by an Advisory Group last year (see paragraphs 8-11 of document GOV/INF/2001/9-GC(45)/INF/6) called for the holding of the first meeting of the Steering Committee established for implementation of the strategy before the end of the year and for the establishment of an inter-centre network to facilitate the exchange of information relating to training. The first meeting of the Steering Committee is scheduled for 25-29 November 2002.

19. In June 2002, a group of consultants considered how to make the distance learning material being used in the field of radiation protection interactive by, in particular, adapting the existing paper-based distance learning material for e-learning.

20. Tables with more detailed information about the Secretariat's efforts in the area of education and training in radiation, transport and waste safety will be provided by the Department of Nuclear Safety on request. Most of the training events have been organized or supported within the framework of technical co-operation Model Projects on radiation protection.

ACTIONS ARISING OUT OF THE CONVENTION ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT AND THE CONVENTION ON ASSISTANCE IN THE CASE OF A NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY

BACKGROUND

1. Under the Convention on Early Notification of a Nuclear Accident (the Early Notification Convention) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (the Assistance Convention), the Agency performs a number of functions concerned with preparedness for and response to nuclear and radiological emergencies. Also, in fulfilling its statutory responsibilities it develops and applies safety standards relevant to emergency preparedness and response.

2. The Secretariat carries out the necessary activities primarily through its Emergency Preparedness and Response Unit (EPRU), which operates the Agency's Emergency Response Centre, and implements arrangements described in the Emergency Notification and Assistance Technical Operations Manual (ENATOM).

3. In September 2000, in resolution GC(44)/RES/16, the General Conference, *inter alia*, recognized "the need for enhanced efforts by the IAEA in preparing the co-ordination of international response and promoting regional co-operation among the States Parties [to the Early Notification Convention and/or the Assistance Convention] for the purpose of making international response more consistent and coherent" and requested the Director General "to continue to evaluate and, if necessary, improve the capability of the IAEA Emergency Response Centre to fulfil its role" and "to report, as appropriate, to it at its forty-sixth [2002] regular session on the implementation of this resolution."

4. In September 2001, the General Conference, in resolution GC(45)/RES/10.A, encouraged the Secretariat and Member States to follow up on the recommendations made by the First Meeting of Representatives of National Competent Authorities identified under the Early Notification Convention and the Assistance Convention (the first Competent Authorities' Meeting, held in June 2001).

5. In March 2002, the Board, which had before it (in document GOV/2002/6) a report on "Encouraging Member States to strengthen their emergency response capabilities and enhancing the capabilities of the Agency's Emergency Response Centre",

- encouraged those Member States which were still not party to the Early Notification Convention and/or the Assistance Convention to accede;
- urged States Parties to the Assistance Convention to consider nominating teams for ERNET (Emergency Response Network - a network of qualified emergency response teams that has been established by the Secretariat);
- encouraged Member States to offer cost-free assistance to the EPRU in implementing some of the recommendations made by the first Competent Authorities' Meeting; and

- endorsed the plans of the Secretariat for supporting the strengthening of international, national and regional arrangements for nuclear or radiological emergency response, and encouraged Member States to actively support them.

RESPONSE TO EMERGENCIES

6. Between 1 July 2001 and 30 June 2002, reports to the Agency of 30 events resulted in the Emergency Response Centre taking action to verify, provide information or advice and/or offer its good offices. In four cases, emergency assistance was provided in response to requests made under the terms of the Assistance Convention:

- (a) Poland - accidental overexposure of five radiotherapy patients at the Bialystok Oncology Centre. France, Germany and the United States of America made specialized medical expertise available, and Sweden provided an expert in physical dosimetry. France accepted one of the patients for medical treatment and has offered to accept others.
- (b) Georgia - accidental exposure of three persons to two powerful strontium-90 orphan sources in a remote, mountainous region. The Czech Republic, France, Norway and Turkey provided resources in support of the initial treatment of the two seriously overexposed persons. Subsequently, these persons were received by France and Russia for specialized medical treatment. With the help of the Secretariat and of France, India, Turkey and the United States, Georgian personnel have undergone training and have been searching for further orphan sources.
- (c) Afghanistan - evaluation by a Secretariat team, at the request of the Office of the United Nations Secretary-General, of a potential radiological emergency situation attributable to an unsecured cobalt-60 source.
- (d) Uganda – emergency assessment by a Secretariat team of the safety and security of an impounded cobalt-60 source and the provision of advice regarding its correct disposal.

MAKING RESPONSE CAPABILITIES MORE CONSISTENT AND COHERENT

7. In March 2002, the Board approved Safety Requirements on “Preparedness and Response for a Nuclear or Radiological Emergency” (contained in document GOV/2002/5). Compliance with these requirements should result in greater consistency between the emergency response criteria and arrangements of different States, which would facilitate emergency response at the regional and the international level.

8. The Secretariat has finished updating the technical document IAEA-TECDOC-953, “Method for the development of emergency response preparedness for nuclear or radiological accidents”, and the updated version will shortly be issued in the Agency’s Emergency Preparedness and Response Series.

9. It is expected that the next edition of the Joint Radiation Emergency Management Plan of the International Organizations will be co-sponsored by the European Commission, FAO, the Agency, ICAO, OECD/NEA, the United Nations Office for the Co-ordination of

Humanitarian Affairs (OCHA), the United Nations Office for Outer Space Affairs (OOSA), the Pan American Health Organization (PAHO), WHO and WMO and that it will be issued before the end of 2002.

10. In May 2002, Norway hosted a meeting of 28 experts from 19 countries and two international organizations for the purpose of developing an action plan to follow up on the outstanding recommendations of the first Competent Authorities' Meeting. Three working groups were subsequently established to prepare papers relating to the long-term sustainability of the international preparedness and response system, to international assistance in a nuclear or radiological emergency and to international communications in such an emergency. The papers will be considered at the second Competent Authorities' Meeting, scheduled for 2-6 June 2003.

EVALUATING AND ENHANCING THE CAPABILITIES OF THE AGENCY'S EMERGENCY RESPONSE CENTRE

11. A fundamental purpose of the Early Notification Convention and the Assistance Convention is the creation of an international network of authorized contact points and competent authorities. The principal response functions assigned to the Agency under the two Conventions relate to: receiving and transmitting notifications, other information and assistance requests; liaising with other relevant international organizations; providing resources; and co-ordinating assistance. In addition, the Emergency Response Centre authenticates and verifies unconfirmed reports of nuclear or radiological emergencies and endeavours to provide authoritative information without undue delay, and acts as the Secretariat's co-ordinating point for the provision of timely and accurate information for communication to State representatives and the news media.

12. The Secretariat has developed preparedness and response arrangements that include: designations of staff members with relevant responsibilities and authority; maintenance of a Nuclear Accident/Radiological Emergency Assistance Plan (NAREAP); detailed procedures and checklists for use by response personnel; a training and exercise programme; maintenance of the Emergency Response Centre, with its communications and information handling technology and arrangements for the rapid deployment of appropriately equipped response teams and for the rapid procurement of equipment and supplies; maintenance of ENATOM; and liaison with other international organizations as described in the Joint Radiation Emergency Management Plan of the International Organizations.

13. Following a recent internal review of the Secretariat's emergency preparedness and response system, it has been recommended, inter alia: (i) that the Interdepartmental Liaison Group for Emergency Preparedness be vigorous in identifying weaknesses in the NAREAP and in developing contingency arrangements to minimize the Emergency Response Centre's vulnerability; (ii) that ERNET be institutionalized with the help of an outside expert; (iii) that ways be sought of harmonizing the arrangements for INES and Illicit Trafficking Database reports with the arrangements for emergency response; (iv) that larger premises at the VIC be sought for the Emergency Response Centre; (v) that the radiological emergency response and preparedness training of Agency staff be strengthened; and (vi) that the Secretariat's arrangements for dealing with the media in emergency situations be strengthened.

14. The Safety Requirements on “Preparedness and Response for a Nuclear or Radiological Emergency” (especially paragraphs 53–55, 68 and 69) imply that the Secretariat will need to extend its operational arrangements so as to be able to rapidly inform States of a notification received of a nuclear or radiological emergency of actual, potential or perceived radiological significance for States other than the State in which the triggering event occurs. The Secretariat will perform the necessary functions through its emergency preparedness and response system. They also imply (in paragraph 123) that the Secretariat will need to strengthen its arrangements for co-ordinating with notifying States releases of information to the media. The EPRU and the Division of Public Information will review those arrangements soon.

15. The Secretariat has received an extrabudgetary contribution from the United States of America towards projects for upgrading the Emergency Response Centre’s computer environment and communications and display systems, for improving the Centre’s web site¹, and for institutionalizing the ERNET concept through the development and implementation of standard procedures, the provision of training and the organization of team exercises. In this regard, the Secretariat is already preparing an update of its ENAC (Early Notification and Assistance Conventions) web site for release at the end of 2002. Proposals for increasing the physical space of the Emergency Response Centre are being considered in the context of the programme of asbestos removal at the VIC.

16. The actions described above are all relevant to responding to emergency situations involving terrorist acts, and successful implementation of these three projects will facilitate the EPRU’s involvement in the strengthening of Secretariat arrangements for responding to such acts (see document GC(46)/INF/6, “Nuclear security - progress on measures to protect against nuclear terrorism”, where the EPRU’s activities related to protection against nuclear terrorism are described under Activity Area VI).

¹ In addition, since September 2000 the Netherlands has been providing cost-free expertise in support of work relating to aspects of the Emergency Response Centre’s web site.