International Atomic Energy Agency

GENERAL CONFERENCE

GC

GC(XXXVII)/INF/318*/
29 June 1993

GENERAL Distr.
Original: ENGLISH

Thirty-seventh regular session
Sub-item 14(a)(i) of the provisional agenda
(GC(XXXVII)/1052)

MEASURES TO STRENGTHEN INTERNATIONAL CO-OPERATION IN MATTERS RELATING TO NUCLEAR SAFETY AND RADIOLOGICAL PROTECTION

STRENGTHENING RADIATION PROTECTION AND NUCLEAR SAFETY INFRASTRUCTURES IN COUNTRIES OF THE FORMER USSR[1]

Background

1. For the States of the former USSR which have nuclear power plants, there have already been international initiatives aimed at improving the safety of their plants. Assistance is being provided both bilaterally and multilaterally by various countries and by a number of organizations, including the IAEA, and a basic co-ordination structure for the activities in question has been set up by the G-24 countries in Brussels within the framework of the Commission of the European Communities.

2. Neither for the States with nuclear power plants nor for those without, however, has there been any co-ordinated international initiative to deal with the more widespread problem of the safety of facilities such as research reactors, uranium mining and milling facilities, and installations containing radiation sources used in medicine, agriculture and industry. The IAEA Secretariat therefore concluded some time ago that an initiative aimed at strengthening,

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*/ The Board considered a document on "Strengthening radiation protection and nuclear safety infrastructures in countries of the former USSR" at its June 1993 session and requested the Director General to submit its contents, after any necessary updating, to the General Conference as an information document.

[1] Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

in the short term, overall national infrastructures for radiation protection as well as for nuclear safety, including the establishment of adequate legal frameworks, could be of great value, and it approached the United Nations Development Programme (UNDP) with a proposal for such an initiative. UNDP agreed to the proposal early this year, and the initiative has been launched jointly by the two organizations, a Joint Secretariat being set up by UNDP and the IAEA for this purpose.

Joint UNDP/IAEA initiative

3. The initiative is a three-step operation:

- the first step was the holding of a "Forum for Information Exchange" of senior officials from countries of the former USSR and from various international bodies, financial institutions and potential supplier organizations for the presentation of information on, inter alia, relevant UNDP and IAEA activities, the radiation protection and nuclear safety situation in the countries of the former USSR, and the relevant plans and needs of those countries;

- the second step - the preparation of assistance packages for single countries or for countries with similar needs in the light of information provided during the Forum (and of information obtained through fact-finding missions in cases where a sufficiently clear picture did not emerge from the Forum) - recently got under way;

- the third step will be the implementation of assistance packages which will include short- and long-term expert services, specialized training, and materials and equipment.

Forum for information exchange

4. The Forum, which took place in Vienna from 4 to 7 May, was attended by representatives of Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrghystan, Latvia, Lithuania, Moldova, Russia, Ukraine and Uzbekistan and by observers from other States and from intergovernmental agencies and other organizations, including the Nuclear Energy Agency of OECD, the Commission of the European Community, the Group of 24, the European Bank for Reconstruction and Development and the World Bank.

Findings and observations

5. A group of consultants acting on behalf of the Joint Secretariat followed the deliberations at the Forum and held discussions with the participants in working groups. The consultants' findings and observations are as follows:

" *i)* *All countries have arrangements for radiological protection, based in the main, on structures, centralised in Moscow, of the former USSR. The break-up of the USSR has had two effects:*

a) *the removal of the central authority based in Moscow and the consequential need to develop or strengthen national authorities and*

b) *the move towards the development of national legislation and standards.*

The degree to which each country has been able to respond to these varies substantially.

ii) *In the interim period while national organizational arrangements are being established, there would appear to be the duplication of responsibility in some instances and possibly the lack of adequate responsibility in others. A further consequence is that the number of national authorities is in proportion to neither the size of the country nor the scope of the nuclear power programme and general uses of radiation sources. In those countries without a nuclear power programme, a single agency responsible for radiological protection of the workers and the public would undoubtedly be sufficient.*

iii) *Whatever arrangements are made the responsible institutions and authorities will need to develop their own expertise in the areas of policy, inspection and enforcement and this will have implications for the number of staff and the training of those staff.*

iv) *The setting up of training courses was stressed by most of the delegations as an urgent requirement. They strongly support the necessity for these courses to be made in languages that they can understand and request that account should be taken of the problems of transition between the ex Soviet Union system and the world wide basic safety standards. Although there is a consensus on the need for such training, it seems that until now there has been no in-depth reflexion on the topic, i.e.:*

- *quantification of global needs according to the sectors concerned (nuclear, medical, industrial, ...);*

- *distinction between updating of knowledge of experts presently involved in radiation safety field and junior staff or technicians.*

It would appear that the resources in a number of countries are only sufficient for a few experts to be trained annually and international assistance in this area is therefore required. Such assistance should be clearly targeted and as a prerequisite to the establishment of training courses, a full assessment of the training needs in the various countries should be carried out.

v) *The moves towards the developments of national legislation and standards of protection may not only require the training of key individuals in the above areas but also a general awareness of the standards of protection that are accepted throughout the world. Some countries already have a developing awareness of such standards particularly through existing programmes of co-operation; others, particularly those more remote from Europe are clearly in need of being brought into the mainstream of professional radiation protection activities and interchanges at the international level.*

vi) *Use of the International Basic Safety Standards (BSS) will be essential step for rebuilding a radiation protection infrastructure. Not only will it provide a basis for formulating national regulations and standards but also form the common basis for regional training. National regulations based on the BSS are also important to address common issues, such as emergency response, among neighbouring countries. Adoption of the BSS, or any other new protection standard, however is costly. It typically involves making appropriate changes in complementary documents; both by regulatory organizations and operators, training at all levels, changes in analysis and recording of dosimetric information, changes in some equipment, etc. How adoption can be accomplished with minimum cost will require study and guidance. One way to minimize impact of adoption, is for countries to become involved in developing the revision. This increases understanding of the standards and can provide opportunity to make adjustments to avoid foreseen problems.*

vii) *One very difficult problem to overcome when rebuilding the radiation protection infrastructure is to accomplish tasks in the proper sequence. Mapping the timing and sequence in which regulations and standards are amended, training provided at various levels, new equipment procured, and procedures altered is one of the most important and difficult first steps. It is made particularly difficult when resources for the infrastructure are*

provided from several sources including international agencies and other countries.

viii) *Lack of discussion by participating countries about certain safety issues of concern to many other countries was notable. Most, if not all,participating countries have very large radiation sources for medical therapy, industrial product irradiation and industrial radiography. Accidents with these types of sources have caused a substantial number of severe injuries, deaths and costly contamination in many parts of the world. Also there was little discussion about the supply of radioisotope sources, who does the evaluation of the safety design of the sources and associated equipment and assures manufacture under appropriate quality controls. This perhaps indicates a lack of awareness of the nature of the hazard and problems associated with radioisotope and electronic radiation devices.*

ix) *Countries that have had uranium mining and processing are experiencing problems with spoils and tailings stabilization. The safety of shallow land burial waste disposal facilities, many sited and operated from the 1950's, is largely unknown or unsatisfactory. Such sites are located in a majority of the countries. A few countries, now have no disposal capability, nor sufficient information about appropriate performance criteria, no sufficient capability to perform a site characterization necessary for proper location and operation. Countries with power reactors, other than Russia, have yet to formulate plans about what to do with the spent fuel. Lack of a solution may cause some reactors to shut down in the near future because storage capacity is filled. Decommissioning of reactor and fuel cycle facilities is a general problem not only because of technical issues but because financial resources to begin to address the problem are lacking.*

x) *Several countries expressed substantial concern about reactor safety in neighbouring countries as well as their lack of adequate emergency capability, particularly with respect to communication and radiological analysis. There are some situations where the military has abandoned radiation sources of unknown quantity, composition and hazard. This also has created substantial concerns in some instances.*

xi) *Many countries expressed concern about smuggling and customs control. It was not clear whether the central issue is radiation protection or safeguarding of strategic material. In either case, attempting to detect radioactive material at customs check points is unlikely to be very effective in preventing smuggling. To the extent that there is a problem, greater emphasis must be placed on strict accountability by operators."*

Follow-up

6. On the basis of the information collected during the Forum, a **programme document** is being prepared by the IAEA/UNDP Joint Secretariat. An overall strategy and country-specific assistance packages will be described in this document. The country-specific assistance will be demand-driven rather than donor-driven, and every effort will be made to avoid duplication and to ensure that the assistance complements and reinforces all other ongoing efforts. Extensive use will be made of UNDP's experience in national capacity-building for foreign aid management and the IAEA's expertise in and capacity for providing comprehensive safety guidance. The Joint Secretariat will be responsible for preparing the programme and for its subsequent implementation.

7. The Joint Secretariat will provide the necessary technical expertise for preparation and implementation of the programme, including country missions as required. UNDP, jointly with recipient countries and interested donors, will mobilize the resources required for financing the programme and provide specialized management expertise and logistical support through regional or national field offices. UNDP's wide-area network will be made available in order to ensure access to the information required for building national capacities and facilitate communications between donors and recipients.

8. The following immediate actions are contemplated by the Joint Secretariat:

(i) Fact-finding missions of highly qualified technical experts will visit specific countries in order to complete the technical information exchange initiated at the Forum and in order to evaluate requirements, including training.[2]

(ii) A technical representative of each participating country will be invited to join in the preparation of new FAO-IAEA-ILO-NEA/OECD-PAHO-WHO Basic Safety Standards.

(iii) Each of the participating countries will be provided with a set of the relevant publications issued by the IAEA.

(iv) Advisory services and training will be provided in order to build up national management and execution systems for radiation protection and nuclear safety. Umbrella project facilities operating in the recipient countries will be used to provide these services in a responsive and cost-effective manner.

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[2] Fact-finding missions to Kazakhstan, Kyrghyzsthan and Uzbekistan are taking place in the second half of July.

(v) Training courses on specific radiation protection issues (e.g. radiation protection in medicine, radioactive waste management and disposal, control of illegal movements of sources, radiation safety in uranium mining and milling) will be organized.

(vi) Personal dosimetry services will be provided where the need is urgent.

(vii) Resource mobilization activities will be initiated immediately following the Forum with a view to attracting funding for implementation of the programme.

(viii) The programme document referred to in paragraph 6 will incorporate a summary document to be used in discussions with potential donors. It will contain (a) a statement of the purpose of the programme, (b) priorities for and principles of technical assistance, (c) specific programme components and a description of approaches to be taken, and (d) a listing of possible partners for the programme (e.g. other United Nations agencies and multilateral institutions, bilateral donors and the private sector).

UNDP financial assistance and other support; future needs

9. UNDP has already provided funding of US $200 000, which covered the costs of the first step of the initiative - the holding of the Forum - and will cover the costs of some subsequent actions - such as the immediate actions outlined in sub-paragraphs 8(ii) and (iii) above.

10. Also, UNDP officials have indicated that up to US $300 000 may be made available soon, primarily for the fact-finding missions foreseen as part of the second step (see sub-paragraph 8(i) above) and for preparation of the programme document referred to in paragraph 6 above.

11. UNDP will continue to provide logistical support through national and regional field offices. In addition, it will make available its specialized foreign aid management expertise.

12. At some point, UNDP will - on behalf of the Joint Secretariat - seek voluntary contributions for executing the programme.

13. Regular staff members of the UNDP and the IAEA have been carrying out the activities of the Joint Secretariat, and this situation will continue for the rest of 1993. Then, if the voluntary contributions for executing the programme are sufficient, the Joint Secretariat will perform its programme execution functions with the support of personnel serving on an ad hoc basis, the staff costs being met from the resources contributed.