International Action Plan for Occupational Radiation Protection

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BACKGROUND

According to the latest (2000) Report of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), an estimated 11 million workers worldwide are monitored for exposure to ionizing radiation. They incur radiation doses attributable to their occupation ranging from a small fraction of the global average background exposure to natural radiation up to several times that value.

The International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, BSS [1], establish a system of radiation protection of which the provisions for occupational exposure are a substantial component. Supporting guidance is provided in three interrelated Safety Guides, jointly sponsored by the IAEA and the ILO [2-4], describing, for example, the implications for employers in discharging their main responsibilities (such as setting up appropriate radiation protection programmes) and similarly for workers (such as properly using the radiation monitoring devices provided to them).

It should be noted, however, that radiation protection is only one factor that must be addressed in order to protect the worker's overall health and safety. The occupational radiation protection programme should be established and managed in co-ordination with other health and safety disciplines, such as industrial hygiene, industrial safety and fire safety.

Less than half of the occupationally exposed workers are exposed to artificial radiation sources. The majority is exposed to elevated levels of natural radionuclides receiving a higher average annual dose than those workers exposed to artificial sources. Some of these exposures are amenable to control but others are not.

INTERNATIONAL CONFERENCE

In order to address these issues the first International Conference on Occupational Radiation Protection, hosted by the Government of Switzerland, was organized by the IAEA, which convened it jointly with ILO. It was co-sponsored by the European Commission (EC) and held in co-operation with the World Health prganization (WHO) and the OECD Nuclear Energy Agency (NEA) and also with UNSCEAR, the International Commission on Radiological Protection (ICRP), the International Commission on Radiation Units and Measurements (ICRU), the International Electrotechnical Commission (IEC), the International Radiation Protection Association (IRPA) and the International Society of Radiology (ISR). It was held at the Headquarters of the ILO, Geneva, from 26 to 30 August 2002, and attended by 328 participants from 72 countries and 12 organizations.

The Conference was the first international conference to cover the whole area of occupational radiation protection, including infrastructure development, radiation monitoring, stakeholder involvement, and the probability of causation of occupational harm attributable to radiation exposure. The Proceedings of the Conference [5] contain all the presentations and discussions as well as summaries of each session and the findings and recommendations of the Conference. The contributed papers are provided on a CD-ROM, which accompanies the Proceedings.

The findings and recommendations of the Conference were considered in September 2002 by the IAEA General Conference, which requested the IAEA "… to look into the possibility of the IAEA co-operating

with the International Labour Organization and other relevant bodies in formulating and implementing…an international action plan for occupational radiation protection".

ACTION PLAN

The *Action Plan for Occupational Radiation Protection* was developed by the IAEA in co-operation with the ILO and reviewed by the organizations involved in the Geneva Conference, the International Confederation of Free Trade Unions (ICFTU) and the International Organisation of Employers (IOE), and also by the programme committee, chairpersons, keynote speakers, rapporteurs and panellists. The overall objective of the Action Plan is to focus the efforts of the relevant international organizations, in particular the IAEA and ILO, to assist their Member States in establishing, maintaining and, where necessary, improving programmes for the radiation protection of occupationally exposed workers. The Action Plan was approved by the IAEA Board of Governors on 8 September 2003.

Proposed Actions

The proposed actions for strengthening occupational radiation protection worldwide are grouped according to nine areas that provide a logical division of tasks to be carried out. A brief summary of the Action Plan (available on http://www-rasanet.iaea.org/downloads/meetings/action_plan_orp2003.pdf) is given below.

ILO Convention 115

The Geneva Conference noted that ILO has the overall responsibility for occupational safety and health, which it discharges in the radiation protection context mainly through the promotion of ILO Convention No. 115 - a powerful tool for enhancing occupation radiation protection. The Action Plan proposes increased collaboration between the IAEA and ILO to further promote the ratification and implementation of ILO Convention No. 115.

The ILO code of practice on "Radiation protection of workers (ionising radiations)"

This code of practice, published in 1987, has continued to be used by all three parties in ILO (workers, employers and governments) as the basis for protection standards to be observed in activities involving exposure of workers to ionizing radiation. However, there are differences between the terminology used in this code of practice and that used in more recent IAEA documents on occupational radiation protection that have been co-sponsored by ILO, and the view was expressed that the terminology used in the code of practice may need further consideration.

Co-operation between the IAEA and ILO in reaching developing countries

The Geneva Conference called for closer co-operation between the IAEA and ILO in strengthening occupational radiation protection in developing countries. The Action Plan brings up this issue, also emphasizing the importance of the participation of labour departments and of workers' and employers' organizations in the establishment of occupational radiation protection programmes.

Information exchange to promote greater awareness and understanding

Several of the findings of the Geneva Conference relate to information exchange between interested parties. Wider dissemination of information and more active involvement of workers, employers, regulators and radiation protection specialists in information exchange should lead to a better and broader understanding of radiation protection practices and promote the evolution of safety cultures in the workplace. Two actions should therefore be initiated:
- Development of publicity materials in the form of posters and leaflets that target groups of workers identified as likely to benefit directly from the information provided.
- The IAEA to provide a focal point, on a website, where networks may be established for exchanges of information, experience and lessons learned between interested parties. The European ALARA Network and the ISOE are good examples of such networks, as is ILO's International Occupational Safety and Health Information Centre (CIS) with its national collaborating centres.

Education and awareness

A) Basic education for workers

Occupationally exposed workers need to have a basic awareness and understanding of the risks posed by exposure to radiation and of the measures for managing those risks to enable them to understand the purpose of specific rules and procedures that they may be required to follow; to allay any unnecessary concerns about their safety and health; and to enable them to play the role that corresponds to their importance as stakeholders. It is therefore proposed that the IAEA, in consultation with ILO and drawing on the experience of trade unions and other stakeholder organizations, prepares and disseminates suitable information materials to workers' representatives and labour educators.

B) Education and awareness-raising of medical professionals

In new areas of medical practice, especially interventional radiology, there is a potential for very high occupational exposures. Attention needs to be paid to the control and reduction of such exposures, and this requires continued efforts in graduate and postgraduate education and in awareness-raising of the medical professionals involved. It is proposed that the IAEA, in consultation with professional medical bodies such as the ISR, critically examines existing postgraduate education and awareness-raising packages for medical professionals, including those now being produced by ICRP, develops and disseminates any further material as necessary.

Exposure to enhanced natural radiation in the workplace

The Geneva Conference concluded that clearer guidance was needed to assist regulatory bodies in deciding what activities to regulate and how to apply a suitable graded approach to the regulation of enhanced natural radiation that is compatible with protection against exposures from artificial sources. The IAEA has already initiated a programme of work on exposure to natural radiation, based on recommendations made at a technical committee meeting on *The Assessment of Occupational Protection Conditions in Workplaces with High Levels of Exposure to Natural Radiation* held in May 2001. In support of this programme, the IAEA should assist authorities in identifying activities involving exposure to natural radiation that may need to be controlled, and generate and disseminate additional sector-specific information on radioactivity levels, exposure conditions, and chemical and physical characteristics of airborne pollutants in workplaces involving naturally occurring radioactive material.

Promotion of a holistic approach to workplace safety

It is important that radiation protection and other safety measures in the workplace not conflict with each other - that, more positively, they reinforce each other in the overall context of safety awareness and safety culture. To promote a holistic approach the IAEA and ILO should collaborate in devising strategies for achieving a better understanding between radiation protection practitioners on one hand and occupational health and safety practitioners on the other and for developing coherent approaches to safety in the workplace.

Formulation and application of standards for the protection of pregnant workers and their embryos and foetuses

Presentations were made at the Geneva Conference which indicated that, in the case of certain radionuclides, some possible exposure routes for pregnant workers and their embryos and foetuses might not have been properly identified and that there might be a need for further international guidance on the formulation and application of standards for their protection. The IAEA is to review current information on this issue in order to determine whether the issue warrants action at the international level. In addition to the work described in the presentations made at the Geneva Conference, relevant work has been done in a number of countries and by a number of bodies (such as ICRP).

Probability of causation of occupational harm attributable to radiation exposure

ILO Convention No.121 (1964), concerning benefits in cases of employment injury, provides for compensation for diseases caused by ionizing radiation. The Geneva Conference noted, however, that occupationally exposed workers may develop diseases similar to those developed by members of the general public, including cancers. Some of these diseases may be attributable to radiation exposure at work, and a mechanism for deciding on attributability is essential. In several countries, mechanisms using probability-of-causation schemes based on dose records and agreed risk factors are being applied. Such schemes, which need to be agreed between employers and workers, can provide for rapid and appropriate compensation to workers or their dependents.

At the Geneva Conference, it was noted that dose reconstruction is an essential component of compensation schemes and the view was expressed that the international organizations should continue discussions directed towards the preparation of guidelines for assisting in the establishment of compensation schemes. An informal IAEA/ILO/WHO meeting held in 2000 produced a report on *The potential for developing joint international guidance for aiding decision making on attributing cases of detrimental health effects to occupational exposure to ionizing radiations,* including concrete recommendations for further work on this issue. The Action Plan is in support of the IAEA continuing its work on developing international guidance for aiding decision-making on the attribution of cases of detrimental health effects to occupational exposure to ionizing radiation, in collaboration with ILO, WHO, NEA and other relevant bodies and drawing on the experience of other stakeholders.

STEERING COMMITTEE

In order to ensure the successful implementation of the Action Plan the IAEA and ILO has established a Steering Committee with the overall remit to advise on, monitor, and assist in the practical implementation of the Action Plan. Participants in the Steering Committee consist of representatives of a number of interested Member States and interested international organizations, including employers' and workers' organizations.

The first meeting of the Steering Committee was held in Vienna 4-6 February 2004. The meeting agreed on the Terms of Reference for the Steering Committee and proposed concrete actions to be taken for the implementation of the Action Plan, also advising on priorities. The Steering Committee will meet again in 12-18 months.

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