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IAEA

60 Years

Atoms for Peace and Development

Labour Administration, Labour Inspection and
Occupational Safety and Health Branch
International Labour Organization
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radiation-protection/lang--en/index.htm](http://www.ilo.org/safework/areasofwork/radiation-protection/lang--en/index.htm)



OCCUPATIONAL RADIATION PROTECTION CALL-FOR-ACTION

Protecting workers exposed to radiation

What is occupational exposure?

Exposure to ionizing radiation can occur in a range of industries such as in mining and milling, in medical institutions, in educational and research establishments and in nuclear fuel cycle facilities. The term “occupational exposure” refers to the radiation exposure incurred by workers in the course of their work.

Protection of workers

Exposure of workers to radiation is a pressing issue in workplace safety. It can occur as a result of various human activities, including work associated with the different stages of the nuclear fuel cycle, the use of radioactive sources and X ray machines in medicine, scientific research, agriculture and industry, and occupations that involve handling of materials containing heightened concentrations of naturally occurring radionuclides. Adequate radiation protection of workers is therefore essential for the safe and acceptable use of radiation, radioactive materials and nuclear energy.

Less than half of the occupationally exposed workers are exposed to artificial radiation sources. High occupational exposure may occur in procedures such as interventional radiology or industrial radiography. The majority of occupationally exposed workers experience elevated levels of natural radionuclides during the course of their work.

The principal natural sources of radiation exposure, other than the mining and processing of uranium and thorium ores, are radon in buildings, rare earth extraction that contain significant traces of natural radionuclides, other underground workplaces and cosmic rays at aircraft altitudes.

The IAEA Radiation Protection and the Safety of Radiation Sources: International Basic Safety Standards (BSS) addresses all situations involving radiation exposure that is amenable to control as well as requirements on exemption and clearance.

1st International Conference

In order to address issues in radiation protection of workers, the 1st International Conference on Occupational Radiation Protection: Protecting Workers Against Exposure to Ionizing Radiation, was held in Geneva, Switzerland, from 26 to 30 August 2002.

It was hosted by the Government of Switzerland and organized by the International Atomic Energy Agency (IAEA), and convened jointly with the International Labour Organization (ILO). The Conference was co-sponsored by the European Commission (EC) and held in cooperation with other international organizations.

The recommendations and conclusions from the 1st conference resulted in an International Action Plan on Occupational Radiation Protection, approved by IAEA Board of Governors in September 2003. This plan has been accelerating and guiding international efforts in improving occupational radiation protection worldwide.

While the Geneva conference provided very broad international input on the status of occupational radiation protection at the time, much work remains to be done and specific challenges exist in the areas of medicine, naturally occurring radioactive material (NORM), and the nuclear industry in general. In addition, new developments in recent years have brought additional challenges that needed to be addressed by the international community of radiation protection experts.

2nd International Conference

The 2nd international conference on this topic, the International Conference on Occupational Radiation Protection: Enhancing the Protection of Workers—Gaps, Challenges and Developments, was held at the IAEA's Headquarters in Vienna, Austria, from 1 to 5 December 2014.

The Conference was organized by the IAEA and co-sponsored by the ILO, in cooperation with fifteen other international organizations. More than 500 participants attended the Conference from more than 79 Member States and 21 international organizations and associations.

The conference aimed to:

- exchange information and experience in the field of occupational radiation protection
- review advances, challenges and opportunities since the first conference on this topic
- identify areas for future improvement
- formulate conclusions and recommendations.

After weeklong discussions, nine key areas of focus were identified, requiring global. The Occupational Radiation Protection Call-for-Action, was the major outcome from this conference and comprises the nine key areas.



01



02

Implement the existing international safety standards to improve occupational protection of workers

- Assist Member States in facilitating implementation and encouraging a holistic approach for worker protection

Develop and implement new international guidance

- Develop new international safety guidelines for occupational radiation protection in different exposure situations, including advanced accelerator facilities and interventional radiology



03



Strengthen assistance to Member States with less developed programs for occupational radiation protection

- Support practical implementation of international safety standards

Did you know?

Annually there are:

~ 12 million occupationally exposed workers in non-nuclear industries

~ 0.8 million occupationally exposed workers in nuclear industry

Promote exchange of operating experience

- Support particularly industrial radiography and medical radiology
- Consider human factors, not just among Member States and regulatory authorities, but also among operators, radiation protection officers and vendors



05



Increase training and education in occupational radiation protection

- Equip workers with the necessary knowledge, skills and competencies to implement protection measures for workers
- Training and education includes periodic refresher training in radiation protection and practical measures to reduce exposures



06



Improve safety culture among workers exposed to ionizing radiation

- Promote safety culture by regulatory authorities through outreach and education



07



Develop young professionals in the area of radiation protection

- Assist young professionals particularly in developing nations
- Develop young professionals through communication, networking, training, research, hands-on experience
- Invite your professionals to participate in technical meetings and conferences



08



Convene an appropriate international forum to exchange additional information

- Identify lessons learned
- Implement plans for the protection of workers and helpers
- Strengthen worker preparedness
- Guide the development of measures for the rapid transition from planned exposure to emergency response
- Improve radiation protection in emergencies



09



Apply the graded approach of the IAEA International Basic Safety Standards (BSS): Radiation Protection and the Safety of Radiation Sources in protecting workers against exposures to elevated levels of naturally occurring radiation or radioactive materials

- Support flight crews, miners and other workers.



Would you like to know more?

The IAEA and other International Organizations provide freely available resources on line:

- ISEMIR IAEA Information System on Occupational Exposure in Medicine, Industry and Research: <https://nucleus.iaea.org/isemir>
- Occupational Radiation Protection Appraisals (ORPAS) missions to Member States: <https://www-ns.iaea.org/appraisals/radiation-appraisals.asp>
- Resources available at the ILO website: <http://bit.ly/29nwT43>
- ORPNET, a web-based network on optimization of the occupational radiation protection: goto.iaea.org/orpnet/
- An ILO code of practice - Radiation protection of workers (ionising radiations): <http://bit.ly/2c7fMap>
- NORM symposia organized every three years: <http://bit.ly/2bQ33VE>
- Occupational Radiation Protection Safety Guide: <http://bit.ly/2c7fUqA>
- Safety Report on Radiation Protection of Itinerant Workers: <http://bit.ly/2cjHUoi>
- Road map tool for Non-Destructive Testing (NDT) companies to assess radiation protection: <http://bit.ly/2bI89D0>