



**IAEA**

**International Atomic Energy Agency**

*Atoms for Peace and Development*

**(Virtual event)**

**International Conference on Radiation Safety:  
Improving Radiation Protection in Practice**

**9–20 November 2020**

**Organized by the**

International Atomic Energy Agency (IAEA)

**In cooperation with the**

European Commission (EC)

Food and Agriculture Organization of the United Nations (FAO)

International Labour Organization (ILO)

OECD Nuclear Energy Agency (OECD-NEA)

Pan American Health Organization (PAHO)

United Nations Environment Programme (UNEP)

World Health Organization (WHO)

**Announcement and Call for Papers**

## A. Introduction

The International Atomic Energy Agency's (IAEA's) fundamental safety objective, as stated in *Fundamental Safety Principles* (IAEA Safety Standards Series No. SF-1), is to protect people and the environment from the harmful effects of ionizing radiation without unnecessarily restricting the many beneficial applications of radiation enjoyed by society.

Radioactivity and radiation sources are widely used in medicine, industry, research and agriculture, as well as for electricity generation, and make an important contribution to economic development and people's well-being. New applications of radiation are constantly being developed, posing ongoing challenges to ensure that an appropriate balance is maintained between the risks and the benefits, both for individuals and for society more broadly, from these activities. Maintaining public confidence requires that workers, patients, the public and the environment are adequately protected.

The system of radiological protection is based on three basic principles: justification, optimization and dose limitation. The principle of justification requires that decisions involving radiation exposure should do more good than harm. This concept is not unique to radiological protection, as many decisions in everyday life involve balancing benefits and risks. Once a decision has been made that a particular action is justified, the principle of optimization is applied. This requires that the selected radiation protection option be the best under the prevailing circumstances. Decisions on justification and optimization include societal, economic and environmental considerations. In many instances, the benefits considered in justification or in optimization accrue to society in general rather than to individuals. The third principle requires that no individual be subject to unnecessary radiation risks; this is ensured by limiting radiation doses received by individuals.

Over the years, the system of radiological protection has evolved in line with new scientific knowledge on the effects of radiation exposure. However, the system is not just about science; ethics and the sense of what is acceptable have also changed and should be appropriately reflected. This has brought particular challenges in that societal aspects will often be viewed — and therefore valued — differently in different circumstances, potentially resulting in different outcomes following the optimization process. Decision makers need to understand that their decisions have consequences and that radiation protection is normally only one of the factors to be considered.

Since publication of the International Commission on Radiological Protection (ICRP) recommendations in 2007, the IAEA safety standards classify radiation exposure into three categories: planned exposure situations, emergency exposure situations and existing exposure situations. Planned exposure situations are equivalent to what was previously referred to as 'practices' and are characterized by the fact that arrangements for protection and safety can be made prior to initiating the activity. On the other hand, both emergency exposure situations and existing exposure situations are not planned in advance and, as such, need to be managed differently.

Large-scale nuclear and radiological emergencies are rare, but when they do occur they can have impacts well beyond the State in which they take place. To adequately respond to such events, protection strategies need to be developed at the planning stage and, when necessary, implemented in a timely manner. Emergencies can also arise from the loss and misuse of sealed sources; while the impact of such events tends to be more localized, the radiation doses received by the exposed individuals are often much greater.

Existing exposure situations in particular cover a wide range of facilities and activities — including radon in homes, radionuclides in food and drinking water, international trade in commodities and consumer products, industrial applications involving exposure to naturally occurring radioactive material, and exposure of aircrew to cosmic radiation — and decisions on if and how to regulate these areas can be particularly challenging.

In 2014, the IAEA General Safety Requirements Part 3, *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards* (GSR Part 3), established requirements for protection and safety aimed at improving radiation protection of people and the environment. GSR Part 3 is supported by a large number of safety guides that address radiation safety in specific industries and for specific

sub-groups of the population. These safety guides build on the requirements of GSR Part 3 and provide practical advice, based on national experiences, on how the requirements can be implemented.

Against this background, the IAEA is organizing the International Conference on Radiation Safety: Improving Radiation Protection in Practice in Vienna, from 9 to 13 November 2020. The Conference is being organized in cooperation with the European Commission, the Food and Agriculture Organization of the United Nations, the International Labour Organization, the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, the Pan American Health Organization, the United Nations Environment Programme and the World Health Organization.

## **B. Objectives and Expected Outcomes**

The Conference aims to take stock of the worldwide radiation safety situation. It will provide a forum for the exchange of information on Member States' experiences in applying the system of radiological protection, as provided for in the IAEA safety standards, to the protection of workers, patients, the public and the environment. Both natural and artificial radiation sources fall within the scope of the Conference.

A particular focus will be given to the lessons learned from applying GSR Part 3 and improvements that could be considered to further facilitate its application. Discussion on changes in approach considered necessary for effectively dealing with new and emerging challenges in radiation protection is expected and encouraged.

The Conference has been scheduled to allow for input from the 5th International Symposium on the System of Radiological Protection, which is being organized by the ICRP and will be held in Adelaide, Australia, from 17 to 21 November 2019 and from the 15th International Congress of the International Radiation Protection Association, which will take place in Seoul, Republic of Korea, from 11 to 15 May 2020.

In preparing the programme for the Conference, the views of Member States were sought through regional workshops organized in Argentina (for the Americas region), Cyprus (for the Europe region), Singapore (for the Asia and the Pacific region) and the United Republic of Tanzania (for the Africa region). These workshops identified the key implementation issues in each region that would benefit from detailed discussion at the international level.

## **C. List of Topics**

The IAEA welcomes high-quality contributions on **all** aspects of the system of radiological protection, focusing in particular on the topics listed below. This is not an exhaustive list and other relevant topics will also be considered for inclusion.

### **1. Justification and optimization:**

- Accounting for societal values;
- Decision making and stakeholder involvement; and
- Review of justification decisions.

### **2. Dose constraints and reference levels:**

- How to establish appropriate dose constraints and reference levels;

- Regulatory and operational lessons;
- Optimization below the reference level; and
- Development and use of diagnostic reference levels.

**3. Applying the graded approach:**

- The graded approach to regulation;
- The graded approach to operational radiation protection;
- Managing hazards and risks.

**4. Conservatism in radiation protection:**

- Conservatism in the linear–no threshold model;
- Conservatism in dose assessment and modelling; and
- Communicating radiation risks.

**5. Planned exposure situations:**

- Practical application of radiological protection standards;
- Occupational dose limit for the lens of the eye;
- Authorized discharges and protection of people and the environment;
- Criteria for release of patients following administration of radionuclides; and
- Dose limit for the public in planned exposure situations.

**6. Emergency exposure situations:**

- Radiological criteria for transition;
- Optimized protection strategies; and
- Managing exposures of workers and the public.

**7. Existing exposure situations:**

- Radon in homes and workplaces;
- Natural and artificial radionuclides in food and drinking water; and
- Cosmic ray exposure of aircrew and space crew; implications of space tourism.

**8. Non-medical human imaging:**

- Exposures in medical facilities;
- Exposures in non-medical facilities; and
- Justification, optimization and ethical aspects.

**9. Exemption and clearance:**

- Exemption of practices and materials;
- Clearance of materials; and

- Trade in contaminated commodities.

#### **10. Capacity building:**

- Education and training;
- Competence in radiation protection; and
- Safety culture.

## **D. Target Audience**

The Conference, which will identify the key challenges and possible solutions in radiation protection that need to be addressed by the international community, will be of interest to regulators, researchers, operators and radiation protection professionals.

## **E. Structure**

The **opening session** will include welcome addresses from the IAEA and the Conference President. This will be followed by a keynote address and presentations by the cooperating organizations on key radiation protection challenges. The keynote speaker will be announced well in advance of the commencement of the conference.

A series of **topical sessions** will address key radiation protection issues. Each topical session will include invited and submitted papers and will conclude with a general discussion. A final decision on the issues to be covered and the papers to be presented in each topical session will be made by the Programme Committee.

**Round-table discussions** will be organized, providing the opportunity for focused discussions and feedback from the conference participants on relevant topics.

Depending on the number of abstracts received, **poster sessions** will also be organized.

The **closing session** will include a summary of the main conclusions of the conference, delivered by the Conference President, and closing remarks from the IAEA.

## **F. Papers and Posters**

All participants who wish to give presentations (orally or in the form of posters) at the conference must submit a synopsis on one of the topics listed under Section C. All submissions, apart from invited papers, must present original work and should not have been published elsewhere.

### **F.1. Submission of Synopses**

Synopses (one or a maximum of two printed A4 pages, including figures and references) must be uploaded to the conference's file submission system (IAEA-INDICO), which will be available on the

conference web page (see Section P) from **20 January 2020** until **15 April 2020**. No other submission route will be accepted. Specifications for the layout will be available on INDICO.

In addition, authors must electronically submit the following two forms to their appropriate governmental authority (see Section G) for transmission to the IAEA. These forms must be received by the IAEA no later than **1 June 2020**:

- Participation Form (Form A)
- Form for Submission of a Paper (Form B)

**IMPORTANT:** The Programme Committee will consider uploaded synopses only if these two forms have been received by the IAEA through the established official channels (see Section G).

## **F.2. Acceptance of Synopses**

The Secretariat reserves the right to exclude synopses that do not comply with its technical or scientific quality standards and/or that do not apply to one of the topics in Section C above.

This conference has plenary technical sessions, so no parallel technical sessions will be organized. For this reason, the number of contributions that can be accepted for oral presentation is limited. Authors who prefer to present their papers as posters are requested to indicate this preference on Form A and in INDICO, at the time of submitting their extended synopsis.

Authors will be notified by **15 July 2020** as to whether their submission has been accepted for presentation at the conference, either orally or as a poster.

## **F.3. Proceedings**

Following the conference, the IAEA will publish a report containing summaries of the plenary and technical sessions. The proceedings will be made free to read online and print copies can be ordered, at a special discounted price, during or after the conference.

# **G. Participation and Registration**

All persons wishing to participate in the conference must be designated by an IAEA Member State or should be members of organizations that have been invited to attend. The list of invited organizations is available on the conference web page.

In order to be designated by an IAEA Member State, participants are requested to send the following form(s), as applicable, to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority):

- Participation Form (Form A): participation only; no deadline if only Form A is submitted.
- Form for Submission of a Paper (Form B): participants submitting a paper through INDICO must send the completed and signed Form B together with Form A to their competent national authority for onward transmission to the IAEA () by **1 June 2020**.

Participants who are members of an organization invited to attend are requested to send the above form(s) through their organization to the IAEA ().

## H. Distribution of Documents

A preliminary programme will be made available on the conference web page (see Section P) before the start of the conference. The final programme and all accepted synopses will be available upon on-site registration at the conference.

## I. Working Language

The working language of the conference will be English. All communications must be sent to the IAEA in English.

## J. Venue

The conference will be held virtually.

## K. Key Deadlines and Dates

Submission of synopses through IAEA-INDICO	<b>15 April 2020</b>
Submission of Form B (together with Form A) through official channels	<b>1 June 2020</b>
Notification of acceptance of extended synopsis for oral or poster presentation	<b>15 July 2020</b>
Submission of Form A only (no paper submission, no grant request)	<b>No deadline</b>

## L. Exhibits

A virtual exhibition is planned. Details will be discussed with interested exhibitors.

## **M. Conference Secretariat**

### **General postal address and contact details of the IAEA:**

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on administrative matters to the IAEA's Conference Services Section.

## **N. Conference Web Page**

Please visit the IAEA conference web page regularly for new information regarding this conference:

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