

International Conference on Effective Nuclear and Radiation Regulatory Systems: Working Together to Enhance Cooperation



Monday, November 4, 2019 - Thursday, November 7, 2019

Scientific Program

The conference will consist of an opening plenary, a number of technical sessions, panel discussions, and a closing session.

The **opening plenary** will consist of opening addresses followed by a keynote panel discussion to highlight and prioritize regulatory policy and technical matters in nuclear and radiation safety and nuclear security.

The **topical sessions** will address the topical issues listed in Section C. After the discussions in the technical sessions, conclusions and recommendations will be drawn up.

Each session will consist of:

Opening of the session by the Chairperson(s);
Presentations to cover the topical issues specified; and
A period of time for answers to posed questions.

Panel discussions will address the items resulting from various technical session and keynote panel presentations and will focus on actions needed to enhance the global nuclear and radiation safety and nuclear security framework. Some contributed papers (see Section F) may be selected, if considered to significantly contribute to the topics of the sessions, to become part of the panel discussions. These discussions will bring into focus the essence of the various sessions and will be the cornerstone of the conference's activities; it will also provide strong input for the Conference's closing session.

In the **closing session**, summaries of the sessions according to the topical issues listed in Section C will be provided. The President of the Conference will present the summary and conclusions of the conference, including visions and strategies for the future, as well as issues for consideration by governments, regulatory bodies, and international organizations.

Regulating Nuclear Installations

Regulatory acceptance of innovative and emerging reactor technologies and systems, as well as supply chain management continue to be of interest to Member States. Many regulatory bodies also deal with topics such as life extension, the end of commercial operation, and decommissioning and remediation of legacy sites.

Topics for discussion include:

- a. Experience with innovative and/or emerging reactor technologies;
- b. Supply chain control, including Counterfeit, Suspect, Fraudulent Items and related issues;
- c. Ensuring safety and security as facilities age and/or prepare for long term operation; and
- d. Dismantling and decommissioning activities, storage/disposal facilities, and remediation of legacy sites.

Regulating Radiation Sources and Medical Facilities

Many Member States continue the establishment of a sustainable regulatory infrastructure to ensure the safety and security of radiation sources and radioactive waste with the aid of technical support. This work is particularly evident in the regulation of emerging technologies in industrial and medical applications.

Furthermore, medical exposure is by far the most common type of exposure to man-made radiation sources. It is estimated that the number of medical procedures using ionizing radiation has more than doubled over the past two decades.

This session also addresses regulating radiation sources and exposure, as well as their impact on patients, workers, and the public.

Topics for discussion include:

- a. Establishing regulatory infrastructure for radiation safety;
- b. Regulating medical applications of radiation:
 - Patient and/or worker protection; and
 - Interaction between multiple regulators, agencies, etc.;
- c. Regulating other radiation applications (e.g. food irradiation and industrial applications);
- d. Security of radioactive materials;
- e. Management of disused sources and decommissioning of radiation facilities; and
- f. Regulating exposure to radon.

Cross-Cutting Regulatory Areas

Cross-cutting areas exist that affect the regulation of both nuclear installations and radiation facilities and activities. These areas can be handled thematically and cooperatively by specialists from all applicable fields.

In addition, lessons can be learned internationally, as well as from other industries, to improve the effectiveness of regulatory bodies.

Topics for discussion include:

- a. Building capacity and capability
 - Human resource development;
 - Information and tools (e.g. research and development for safety assessments and decision making);
 - Education and training;
 - Knowledge management; and
 - Knowledge networks;
- b. The safety-security interface;
- c. Capturing and using regulatory experience to improve effectiveness, including introducing technologies already in use in other countries;
- d. Public communication, involvement, participation, and awareness; and
- e. Regulatory lessons learned from other industries:
 - High hazard industries (e.g. oil and gas and chemical);
 - Transport regulation (e.g. civil aviation, marine, rail and space/aeronautics); and
 - Forum for regulatory experience exchange with other industries, bodies, and/or policy organs.

Leadership and Management for Safety and Security

Part 2 of the General Safety Requirements, Leadership and Management for Safety (IAEA Safety Standards Series No. GSR Part 2), emphasizes that leadership for safety, an integrated management system, and a systemic approach (i.e. an approach relating to the system as a whole in which the interactions between technical, human and organizational factors are duly considered) are essential for adequate safety and for fostering a strong safety culture. Likewise, the Code of Conduct on the Safety and Security of Radioactive Sources recognizes the importance of fostering a safety culture and security culture in all organizations and among all individuals engaged in the regulatory control or management of radioactive sources.

This session considers the safety culture and security culture within regulatory bodies and the concept of building institutional structures to ensure nuclear and radiation safety. It also examines the regulatory oversight of programmes established to strengthen human performance to achieve a high level of safety and security.

Topics for discussion include:

- a. Organizational culture for safety and security;
- b. National approaches to institutional strength in depth and the systemic approach;
- c. Human, organizational, and technological factors;
- d. Integrated management systems for regulatory functions; and
- e. Prioritization of regulatory functions using the graded approach.

Strengthening International Cooperation

International cooperation is an important part of the global nuclear and radiation safety and nuclear security framework. This session will address the need to strengthen regulatory networks, technical assistance, technical and topical cooperation, and IAEA peer reviews including the dissemination of results to maximize the benefits for Member States and effectively support embarking countries.

This session also addresses emerging issues related to multinational activities and their impact on national responsibility for nuclear safety and security.

Topics for discussion include:

- a. IAEA peer reviews and advisory services;
- b. The International Regulatory Network;
- c. Supporting embarking countries; and
- d. Regional cooperation.