

# **International Conference on Effective Nuclear and Radiation Regulatory Systems**

**Monday, 13 February 2023 - Thursday, 16 February 2023**

**Abu Dhabi**

## **Scientific Programme**

## **Topical Issue No. 1: Leadership through New and Emerging Challenges**

This session will provide an opportunity for regulatory bodies to share their experiences on how to ensure regulatory resilience; to better understand strategies, needs and ways to adapt and respond to unexpected challenges; and to share notable practices and lessons learned from regulatory experience.

Topics for discussion include:

- a. Regulatory implications of the COVID-19 pandemic in relation to business continuity: use of on-line applications, remote inspections, approaches to address regulators and operators' staffing challenges, and lessons learned for future regulatory enhancements;
- b. Expect the unexpected: how regulatory programmes keep ahead of rapidly changing threats, such as cyber security and unmanned aerial vehicles; and, sustaining human performance under chronic stressors on operations such as military presence, economic uncertainty or civil unrest;
- c. Climate change: regulatory strategies to ensure resilience of existing and new nuclear installations and enhanced efforts to monitor the external environment to be prepared for future demands.

## **Topical Issue No. 2: Harmonization, Innovation, and New Technologies: Approaches to Enhance Regulatory Agility**

This session will provide an opportunity to discuss regulatory strategies and programmes for innovative and advanced technologies in nuclear and radiological applications; international cooperation, harmonization of safety requirements and licensing approaches, and the application of a "graded approach" in regulatory activities.

Topics for discussion include:

- a. Developing or adapting regulatory strategies and programmes – including consideration of the "graded approach" – for nuclear applications, to include small modular reactors, transportable reactors and fusion reactors; and radiological applications, such as medical and industrial technologies;
- b. The role of harmonization in new and advanced technology regulation and the need for enhanced cooperation at regional and international levels;
- c. Use of technology, risk insights and research & development to advance the mission of the regulatory body, inter alia, targeted research activities, data analytics for risk assessment and decision making, information technology for greater connectivity, and the use of artificial intelligence and other technologies.

## **Topical Issue No. 3: Full Lifecycle Challenges and Strategies**

This session will address challenges and strategies related to the full lifecycle of nuclear and radiation facilities, including the establishment of a new programme, managing aging of nuclear and radiation facilities, decommissioning, and radioactive waste storage and disposal.

Topics for discussion include:

- a. Regulatory framework and infrastructure for new or expanding nuclear and radiation facilities;
- b. Supply chain oversight: dynamic challenges for new and aging facilities such as constraints in the supply chain, commercial grade dedication techniques, and counterfeit, fraudulent, and suspect items;
- c. Aging management of power and non-power applications: including design, operation, and extended operation phases;
- d. Decommissioning and waste management of power and research reactors, including interim and long-term storage challenges and strategies for managing spent fuel;
- e. The use of financial assurance instruments for lifecycle confidence, and strategies for radiological and environmental impact and control during the full lifecycle.

## **Topical Issue No. 4: Trusted Regulator: Cooperative Techniques to Promote Credibility and Resilience**

This session will address the importance of building stakeholder and public trust, communication, and the enhancement of stakeholder and public involvement in nuclear and radiation safety and security activities.

Topics for discussion include:

- a. Characteristics of a trusted regulator and processes for building stakeholders and public trust: stakeholder engagement and communication during the regulatory process; effective relationships between operators and regulators, regulatory independence and vision/mission statements as well as their role in communicating the regulatory body's priorities;
- b. International and regional cooperation for creating more effective partnerships;
- c. Enhancing regulatory programme effectiveness and credibility through self-assessments and peer reviews;
- d. Emergency preparedness and response: how to maintain effective emergency preparedness and response programmes, modernization options for regulators such as use of enabling technologies, coordination with offsite competent authorities and responders, effective coordination with neighbouring countries, international/regional organisations and jurisdictions and communication with the public.

## **Topical Issue No. 5: Capacity Building for the Future – Holistic Approaches for Nuclear and Radiation Safety and Security**

This session will discuss sustainable capacity building strategies and programmes including education and training, knowledge management, human resource development, and knowledge networks. It will focus on the exchange of best practices to prepare the next generation of regulatory professionals and leaders (or decision makers).

Topics for discussion include:

- a. Establishing durable capacity building programmes to align regulatory capabilities with future needs;
- b. Techniques to transfer knowledge to the next generation;
- c. Managing safety/security interface and maintaining safety and security culture;
- d. Cultivating a workforce of regulatory practitioners in nuclear and radiation safety and security;
- e. Attract and sustain technical experts including leveraging educational institutions for recruitment and ensuring competent regulatory staff in phasing out programmes;
- f. Promoting gender balance in the nuclear workforce;
- g. Preparing and empowering a new generation of leadership.

## **Special Panel Discussion: Regulating a Modern Era of Medical and Radioactive Materials Facilities and Applications - The Journey Continues**

This special panel will provide an opportunity to highlight progress made since the previous Regulatory Conference (hosted in 2019); to address current priorities and initiatives; and, to exchange experiences on the implementation of legal instruments including the Code of Conduct on the Safety and Security of Radioactive Sources and the Supplementary Guidance on the Import and Export of Radioactive Sources.

Topics for discussion include:

- a. Progress since the 2019 Regulatory Conference: Regulatory Systems: Working Together to Enhance Cooperation;
- b. Current priorities and initiatives:
  - Rays of Hope. IAEA Initiative to support the sustainable introduction or expansion of radiotherapy for cancer treatment and strengthening radiation safety legislation and infrastructure;
  - The role of legally binding and non-legally binding international instruments in strengthening national legislative and regulatory frameworks; and
  - Regulatory measures for the prevention, detection and response to nuclear and other radioactive material outside of regulatory control.
- c. Experiences with the implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and the Supplementary Guidance on the Import and Export of Radioactive Sources and Guidance on the Management of the Disused Radioactive Sources.

## **Conference Web Page**

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