NEA International Radiological Protection School (IRPS) at Stockholm University

Preparing Tomorrow's Radiological Protection Leaders

14-18 August 2023
Stockholm University
Sweden

PROGRAMME

NEA
NUCLEAR ENERGY AGENCY
International Radiological Protection School

Stockholms universitet

Strål säkerhets myndigheten
Swedish Radiation Safety Authority

ORGANISERS

The International Radiological Protection School (IRPS) is organised by the OECD Nuclear Energy Agency (NEA) in co-operation with the Swedish Radiation Safety Authority (SSM) and the Centre for Radiation Protection Research (CRPR) of Stockholm University. The IRPS 2023 session will be held at the CRPR in Stockholm, Sweden.

For further information regarding logistics, please contact (irps@oecd-nea.org).

IRPS 2023 web page:
www.oecd-nea.org/IRPS2023

Image: NEA Headquarters in Boulogne-Billancourt.

PROGRAMME (14-18 August 2023)

Day 0 – Sunday 13 August 2023

Registration of participants and welcome reception from 16:00-18:00 CEST.

Day 1 – Monday 14 August 2023

Registration of participants from 8:00-8:45 CEST.

Welcome		
9.00	**Welcome addresses by the organisers** • William D. Magwood, IV, Director-General, NEA • Michael Knochenhauer, Director General, Swedish Radiation Safety Authority • Catarina Rydin, Section Dean, Biology Section, Stockholm University 30 minutes (10 minutes per organisation)	
9.30	**Presentation of the NEA and ongoing activities** • Greg Lamarre, Head of Division, Division of Radiological Protection and Human Aspects of Nuclear Safety (RP-HANS), NEA • Group picture 30 minutes	

The RP system – Past, present and future I		
The basics: This topic will present a summary of the key aspects of the international system of radiological protection, and what they mean in regulation and practice. It is an introduction to the principles and structures that form the framework.		
10.00	**International radiological protection framework – The essentials I** The evolution and prevailing spirit of the international system of radiological protection will be summarised on the basis of the RP system as it exists today, taking ICRP Publication 103 into account. 30 minutes + 15 minutes discussion	*Richard Wakeford* *Jack Valentin*
10.45	Break	

Images: IRPS-2022.

11.05	**International radiological protection framework – The essentials II** Continuation of the session above. 30 minutes + 15 minutes discussion	*Richard Wakeford* *Jack Valentin*
11.50	**Practical application of justification, optimisation, dose limitation and related dose criteria** Some examples of the use of the RP system and problems encountered in its application in practice will be described. 30 minutes + 15 minutes discussion	*Ann McGarry* *Jack Valentin*
12.35	Lunch break	
13.35	**Radiological protection – Ethics** An overview of the ICRP's views on the ethics of radiological protection. 30 minutes + 15 minutes discussion	*Nicole Martinez* *Deborah Oughton*
14.20	**Moderated discussion with regulators: Current challenges and the future of the RP system** This session will discuss the current challenges that the RP system faces from a regulator's perspective. It will also address how to keep the RP system fit for purpose in view of the ongoing review and revision of the ICRP's general recommendations. 45 minutes + 15 minutes discussion **Moderator:** *William D. Magwood, IV*	*Rumina Velshi* *Mark Foy* *Michael Knochenhauer*
15.20	Break	

Application – Case study 1		
15.45	**Managing public and occupational exposure to radon** The case study covers different aspects of protection against radon exposure; radon measurements; reference level; remediation and management with examples and possible solutions.	*Ann McGarry* *Jie Hou*
18.15	End of day 1 – Food truck and beverages	

Day 2 – Tuesday 15 August 2023

The RP system – Past, present and future II		
Today's system of radiological protection and the challenges it faces: This module will discuss the underlying principles of the application of the international system of radiological protection, as well as the challenges it faces, such as RP of the environment, ethical considerations, or decommissioning and waste management.		
9.00	**Radiological protection constraints and reference levels** This session will introduce and discuss the use of numerical constraints as part of the process of identifying the optimal protection solution. 30 minutes + 15 minutes discussion	*Jack Valentin* *Ann McGarry*
9.45	**Areas of significant evolution since ICRP Publication 103** The current RP system, as described in ICRP Publication 103, is being scrutinised for possible revision to keep it fit for purpose. More than 50 reports have been published on this topic, indicating the direction of possible changes. This presentation will describe some ideas and how they evolved, and will provide a short assessment of ongoing work on the new fundamental recommendations. 30 minutes + 15 minutes discussion	*Thierry Schneider* *Andrzej Wojcik*
10.30	Break	
10.50	**Health risk estimates, dose criteria and the use and limitations of the effective dose** The numerical criteria recommended by the current RP system will be discussed along with their intended uses. The lecture will also develop the effective dose concept as well as its use in different contexts. 30 minutes + 15 minutes discussion	*Richard Wakeford* *Chris Clement*
11.35	**RP of the environment** The framework, the underlying concepts and application of protection of the environment in different exposure situations will be developed with a focus on the way it was created and how it is evolving. 30 minutes + 15 minutes discussion	*Jacqueline Garnier-Laplace* *David Copplestone*
12.20	Lunch break	

13.20	**Decommissioning and waste management from an RP perspective** A general introduction to decommissioning and the associated safety priorities, with specific consideration of RP aspects, and the management of radioactively contaminated waste materials from an environmental perspective. 30 minutes + 15 minutes discussion	*Simon Carroll* *David Copplestone*
14.05	**Post-accident food safety management – towards resolving remaining challenges** The topic of trade in food after a nuclear accident will be presented as an illustration of the challenge to implement RP in practice. The discussion will refer to existing guidance from international organisations and the NEA's work in progress. 20 minutes + 10 minutes discussion	*Ann McGarry* *Thierry Schneider*
14.35	**Roundtable and views on the topics discussed during the day with ICRP, EC, IAEA, NCRP and NEA** Representatives of the respective organisations will be invited to briefly comment on the different challenges that the RP system faces as introduced during today's sessions (and beyond). The session will include an open debate with the participants. 30 minutes + 15 minutes discussion **Moderator:** *Richard Wakeford*	*Chris Clement* *Jie Hou* *Stefan Mundigl* *Mike Boyd* *Jacqueline Garnier-Laplace*
15.20	Break	

Application – Case study 2		
15.40	**Decommissioning, clearance and site release, with a focus on radiological protection of the environment** Participants will consider aspects of how environmental assessments can help to determine the best environmental outcome for disposal of radioactively contaminated waste from an environmental perspective.	*David Copplestone* *Simon Carroll*
18.10	End of day 2	

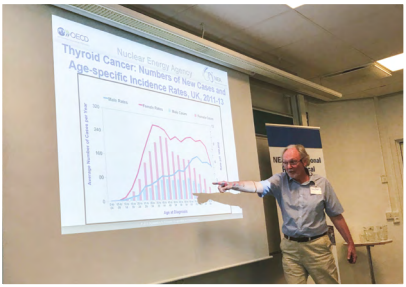
Day 3 – Wednesday 16 August 2023

State of the art of RP science		
What we know, and what we don't know: This session will address: the state of the art in radiobiology, in epidemiology and in the medical application of ionising radiation, as well as the role and mission of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). RP and occupational exposure will also be addressed.		
9.00	**Radiation biology** The most up-to-date scientific understanding of the biological interactions of ionising radiation will be discussed. A practical exercise in observing cell chromosomal damage will be proposed. 30 minutes + 15 minutes discussion	*Andrzej Wojcik*
9.45	**Radiation epidemiology** The epidemiological results provided by various exposed populations will be discussed: the fundamental and compelling evidence on the health effects of radiation exposure observed in the Japanese survivors of atomic bombs (often referred to as the life span study); findings from other cohorts such as medically, environmentally, or occupationally exposed groups. 30 minutes + 15 minutes discussion	*Dominique Laurier* *Richard Wakeford*
10.30	Break	
10.50	**UNSCEAR** The lecture will describe the role, purpose and work programme of UNSCEAR in the RP landscape, and will give some examples of scientific evaluations recently achieved. 30 minutes + 15 minutes discussion	*Ferid Shannoun* *Borislava Batandjieva-Metcalf*
11.35	**Overview of occupational radiological protection at a nuclear power plant** The lecture will summarise the radiological protection challenges that exist in operating a pressurised water reactor and will describe the engineering controls and organisational arrangements that are used to optimise radiation doses. 30 minutes + 15 minutes discussion	*Guy Renn* *Thierry Schneider*
12.20	Lunch break	

13.20	**Radiological characterisation and environmental monitoring strategies** The lecture will explore the characterisation of radiologically contaminated sites, discuss best practice for environmental monitoring and consider strategies for dealing with what might be found. 30 minutes + 15 minutes discussion	*Kathryn Higley* *David Copplestone*
14.05	**RP in diagnostic and therapeutic healthcare** The lecture will describe how the system applies to the RP of patients and healthcare professionals, with many examples. 30 minutes + 15 minutes discussion	*Mika Kortesniemi* *Kimberly Applegate*
14.50	Break	

Application – Case study 3		
15.10	**Clinical accident and biological dosimetry** The 2001 Bialystok accident (www.iaea.org/publications/6749/accidental-overexposure-of-radiotherapy-patients-in-bialystok) will be discussed with a focus on management, dose reconstruction and medical treatment of the victims.	*Andrzej Wojcik* *William Small*
17.40	End of day 3 – Vasa Museum visit and dinner	

Images: IRPS-2019.



Day 4 – Thursday 17 August 2023

The RP system – Towards a more holistic approach		
New dimensions of a more holistic approach to RP over the last decade: This module will discuss some of the most important influences on the radiological protection system over the last decade, expanding the purely science-based approach with a more holistic view that also takes into account socio-economic factors.		
9.30	**Social science and sound communication to support RP** This session will describe the importance of social sciences and stakeholder relationships to facilitate the understanding of concerns and the communication of scientific knowledge to support informed RP decisions. 30 minutes + 15 minutes discussion	*Deborah Oughton* *Nicole Martinez*
10.15	**The importance of stakeholder involvement** This discussion will focus on the importance of stakeholder involvement in the context of radiological protection in order to account for the general well-being of people in a holistic approach. 30 minutes + 15 minutes discussion	*Noboru Takamura* *Jacques Lochard*
11.00	Break	
11.20	**Experience from former accidents – from emergency to recovery** This session will draw on lessons learnt from former accidents, in particular from the Chernobyl and Fukushima Daiichi accidents, to describe a framework for the protection of people and the environment in a nuclear accident. It will also provide a useful introduction to the subsequent case study on emergency and recovery management. 30 minutes + 15 minutes discussion	*Toshimitsu Homma* *Thierry Schneider*
12.05	**Emergency preparedness and response in practice** This session will introduce practical aspects of nuclear or radiological emergency consequence management. 30 minutes + 15 minutes discussion	*Christopher Mogg* *Peter Bryant*
12.50	Lunch break	

Images: IRPS-2022.

13.50	**Risk communication** The session will cover the principles of risk communication related to RP, how to identify and address the target audience, how to develop and implement techniques to achieve effective communication, and how to manage misinformation/ disinformation. This session will also present ongoing training, particularly the NEA Risk Communications Training Course, and other related activities. 45 minutes + 15 minutes discussion	*Lauren Matakas* *Deborah Oughton* *Greg Lamarre*
14.50	Break	

Application – Case study 4		
15.10	**Emergency and recovery management** The case study will confront the participants with the multidimensional nature of nuclear emergency and recovery management in practice, based on the challenges experienced in the mid-term and in the recovery phase of the Fukushima Daiichi Nuclear Power Plant accident. Participants will assess a case study scenario and address key issues, such as: preparedness; responsibilities and their evolution; justification of protective actions; or holistic optimisation of protection.	*Thierry Schneider* *Toshimitsu Homma*
17.40	End of day 4	

Day 5 – Friday 18 August 2023

Wrapping up		
9.30	**Mini workshop on challenges in applying the RP system** Participants are invited to send short abstracts prior to starting the school in which they depict a past or future situational example presenting RP challenges, possibly from their professional experience. Two speakers will open the session to present examples from the private and the public sector perspectives. Three participant abstracts will be presented. Keynote presentation from the World Nuclear Association (15') Keynote presentation from the European Commission (Euratom) (15') Presentation (participant abstract) (10') Presentation (participant abstract) (10') Presentation (participant abstract) (10') Q&A and roundtable discussion with all participants and faculty on examples, fields of interest and practical experience. (60')	*Sama Bilbao y León* *Stefan Mundigl* *Richard Wakeford* with all of the faculty
12.00	Lunch break	
13.00	**Self-assessment quiz** A short multiple-choice quiz to provide participants with a self-assessment of their learning progress during the week in a relaxed atmosphere. Results of the test are anonymous. 60 minutes	*David Copplestone* with all of the faculty
14.00	Break	
14.15	**Open discussion with the entire faculty and all participants** This session will provide an opportunity for participants to ask any remaining questions they might have, taking advantage of the presence of the faculty members. Similarly, any recommendations and feedback will be welcome. 30 minutes	*Richard Wakeford* with all of the faculty
14.45	**Closing** 15 minutes	*Richard Wakeford* *NEA*
15.00	End of IRPS-2023	

Questions and contact information

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