

## 16<sup>th</sup> EURADOS SCHOOL

### Contribution of dosimetry in the field of nuclear emergency preparedness and radiological accident management

Thursday, 15<sup>th</sup> June 2023

#### Scope

Ionising radiation is of huge benefit to society, including in medicine and industry. However, there remains a small but very real risk of radiation accidents or malicious events which may lead to small or very large numbers of individuals being exposed to unplanned doses, either patients, workers, or members of the public.

Ionising radiation dosimetry in its various forms, including environmental, computational, individual monitoring, internal and external dose assessment, is a crucial part of any radiation emergency response, not least following a large scale civil nuclear accident. In such scenarios, direct monitoring of doses to individuals and the environment as well as prediction of the pathways for exposure which relies on detailed calculations using a variety of models and approaches, directly support decision making in terms of incident resolution (who should try and fix the problem and how), as well as protective actions for potentially exposed members of the public and the environment. Dosimetry is also key to the recovery phase, including the initial and longer term clean up as well as the long-term consequences for exposed workers, members of the public, non-human biota and the environment.

The EURADOS School 2023 will seek to establish the basics of preparedness for nuclear emergency situations, before introducing the audience to the key considerations of dosimetric monitoring and modelling to support real time decision making and prediction of evolution of the accident, individual monitoring and external and internal dosimetry for individuals and the environment. The contribution of dosimetry to communication to the public and stakeholders, which is essential for both the acute and clean up phases of the incident, will also be considered, as will the next steps in terms of the longer term. Case studies on real or potential incidents will be presented to put the presented theory into practical context.

#### Topics

- > Introduction to past major nuclear accidents
- > Nuclear emergency preparedness
- > Radiation dosimetry and modelling in support of the acute and longer term response
- > Stakeholder involvement and communication

#### Scientific Committee

- > Liz Ainsbury (UK Health Security Agency – UKHSA, United Kingdom)
- > Isabelle Clairand (Institut de Radioprotection et de Sûreté Nucléaire – IRSN, France)
- > Marco Silari (European Organization for Nuclear Research - CERN, Switzerland)
- > Pedro Teles (University of Porto – FCUP, Portugal)
- > Filip Vanhavere (Nuclear Research Centre – SCK CEN, Belgium)
- > Arturo Vargas (Universitat Politècnica de Catalunya – UPC, Spain)

#### Event Accreditation

We have requested the EURADOS School to be accredited by EBAMP as CPD event for Medical Physicists. More information will be distributed later.

## Programme of the 16<sup>th</sup> EURADOS School

Time	Topic	Speaker
9:00	Welcome on behalf of the Scientific Committee	<b>Liz Ainsbury</b> and <b>Pedro Teles</b> UKHSA (UK) and IPO (Portugal)
9:05	Introduction - historical aspects, and the need for radiation emergency preparedness	<b>Eduardo Gallego</b> UPM (Spain)
9:35	Biological effects in nuclear and radiological accidents	<b>Isabel Bravo</b> IPO (Portugal)
10:05	When do we need a sound risk assessment based on monitoring and modelling in a nuclear emergency to assure proper decision making and a balanced long-term health care for the population?	<b>Wolfgang Raskob</b> KIT (Germany)
10:35	Coffee break	
11:00	Preparing for people monitoring and using the data to inform the wider monitoring programme	<b>Matt Simpson</b> UKHSA (UK)
11:30	EURADOS developments on emergency internal dosimetry	<b>María Antonia López</b> CIEMAT (Spain)
12:00	Biological and physical retrospective dosimetry	<b>Liz Ainsbury</b> UKHSA (UK)
12:30	Lunch	
13:30	Environmental monitoring and the use of unmanned aerial systems for radiological surveillance	<b>Arturo Vargas</b> UPC (Spain)
14:00	Contribution of computational dosimetry to the management of radiological accidents	<b>Christelle Huet</b> IRSN (France)
14:30	Current status of nuclear facilities in Ukraine and the associated radiological risks in wartime	<b>Olena Parenjuk</b> NAS (Ukraine)
14:50	Coffee break	
15:20	Case studies – Internal dosimetry and longer term population monitoring, Goiania	<b>Luiz Bertelli</b> LANL (USA)
15:40	Case studies - How useful is the dose assessment in the medical management of radiological accidents?	<b>Jean-François Bottollier-Depois</b> IRSN (France)
16:00	Case studies - The current nuclear risk in Europe	<b>Johan Camps</b> SCK CEN (Belgium)
16:20	Closure of the EURADOS School	