



# ISOE International Symposium

## Tours, 21 – 23 June 2022



### Programme



Supported by





## ISOE International Symposium

*Tours, 21-23 June 2022*

The European Technical Centre of the Information System on Occupational Exposure (ISOE) is pleased to organize, in collaboration with and the support of Electricité de France (EDF), the 2022 ISOE International Symposium on Occupational Exposure Management at Nuclear Facilities.

The Symposium will be held in Tours, France, from the 21<sup>st</sup> to the 23<sup>rd</sup> of June 2022. It is co-sponsored by the OECD Nuclear Energy Agency (NEA) and the International Atomic Energy Agency (IAEA).

The Symposium is targeted at all those concerned with radiological protection at nuclear power plants: radiation protection managers and staff members, maintenance and operation planners, contractors, exposed workers, regulatory body representatives and international organisations. It is also opened to research reactors and professionals from other nuclear fuel cycle installations sharing common radiological protection issues.

Dealing with occupational radiation protection at the design, operation and decommissioning stages of installations, as well as accident situations, this new meeting point of radiation protection professionals under the heading of ISOE will be a great opportunity to share, at the international level, experiences and practices favouring a continuous improvement of radiation protection.

Furthermore, the accompanying Technical Exhibition will give participants the opportunity to see the latest developments from industrial and commercial companies active in fields of radiation protection.

Prior to the Symposium, on Monday 20 June 2022, two meetings devoted to specific audiences have been organised:

- A Radiation Protection Managers meeting
- A Regulatory Body Representatives meeting

We are looking forward to welcoming you in Tours,

Caroline SCHIEBER  
*Head of ISOE-ETC*  
*On behalf of the Programme Committee*



# ISOE International Symposium

*Tours, 21-23 June 2022*

## PROGRAMME COMMITTEE MEMBERS

<b>Lucie D'ASCENZO</b>	ISOE ETC, CEPN – France
<b>Laure-Anne BELTRAMI</b>	ISOE ETC, CEPN – France
<b>Borut BREZNIK</b>	Krško NPP – Slovenia
<b>Charlotte GUENAULT</b>	ASN – France
<b>Monika FÁRNÍKOVÁ</b>	Temelin NPP – Czech Republic
<b>Swen-Gunnar JAHN</b>	ENSI – Switzerland
<b>Timo KONTIO</b>	Loviisa NPP – Finland
<b>Jizeng MA</b>	IAEA
<b>Francesco MANCINI</b>	SOGIN – Italy
<b>Hans MEIJER</b>	Borssele NPP – Netherlands
<b>David MILLER</b>	ISOE NATC, University of Illinois – USA
<b>Guy RENN</b>	Sizewell B NPP – United Kingdom
<b>Caroline SCHIEBER</b>	ISOE ETC, CEPN – France
<b>Thorsten STAHL</b>	GRS – Germany
<b>Torgny SVEDBERG</b>	Ringhals NPP – Sweden
<b>Philippe WEICKERT</b>	EDF UNIE-GPEX – France

## CONFERENCE LANGUAGE

The conference language will be English.

## SYMPOSIUM VENUE

The Symposium will take place at:

Palais des Congrès de Tours  
26 Boulevard Heurteloup  
37000 Tours



# ISOE International Symposium

Tours, 21-23 June 2022

## DEDICATED MEETINGS – MONDAY 20 JUNE 2022

The ISOE Symposium will be preceded by two dedicated meetings devoted to specific audience.

**If you wish to participate to one of those meetings, please contact the relevant person as indicated below in order to register to one of these meetings.**

The registration to these meetings is free of cost.

Radiation Protection Managers Meeting	
09:00 - 17:00	Location: Palais des Congrès de Tours  <i>Contact-person:</i> <b>Philippe WEICKERT</b> , EDF – <a href="mailto:philippe.weickert@edf.fr">philippe.weickert@edf.fr</a>
Regulatory Body Representatives Meeting	
09:00 - 17:00	Location: Palais des Congrès de Tours  <i>Contact-person:</i> <b>Charlotte GUENAULT</b> , ASN – <a href="mailto:Charlotte.GUENAULT@asn.fr">Charlotte.GUENAULT@asn.fr</a>



# ISOE International Symposium

Tours, 21-23 June 2022

## PROGRAMME

### TUESDAY 21 JUNE 2022

08:30 - 09:15	Registration
09:15 - 10:00	Opening Ceremony (ETC, OECD NEA, IAEA, EDF, ASN)
<b>Session 1.</b>	<b>RP at the Design Stage</b>
Chairpersons	<i>V. Rees (ONR, UK), C. Schieber (ISOE ETC – CEPN, France)</i>
10:00 - 10:20	Radiation Protection optimization at Design stage: application to EPR2 M. Longeot (EDVANCE/EDF), S. Poirrier (EDVANCE/Framatome), France
10:20 – 10:40	Computation of dose equivalent rates during the loading of spent nuclear fuel in a transport cask using Monte Carlo simulation F. Hoareau (EDF R&D), V. Buforn, C. Gaubert (EDF DIPDE), F. Thibaud (EDF DCN), France
10:40 - 11:25	Coffee-break, Visit of Exhibition, Posters
<b>Session 2.</b>	<b>New RP Technologies</b>
Chairpersons	<i>X. Descamps (EDF DPN-EM, France), T. Stahl (GRS, Germany)</i>
11:25 - 11:45	NextGen RP: Applying Remote and Automated Technologies to Enhance and Optimize Nuclear Power Plant Radiation Protection Operations D. Perkins, K. Kim, P. Tran, D. Cool (EPRI), USA
11:45 - 12:05	ECHO: an innovative device for the measurement of beta contamination in high and fluctuating gamma environments L. Bardou (EDF UNIE-GPEX), T. Le Noblet, V. Maussire (CARMELEC), France
12:30 - 14:00	Lunch Break



# ISOE International Symposium

*Tours, 21-23 June 2022*

<b>Session 3. Source-Term Management</b>	
<b>Chairpersons</b>	<b><i>B. Breznik (Krško NPP, Slovenia), G. Ranchoux (EDF DP2D, France)</i></b>
14:00 - 14:20	Chemical Engineering Perspective on PWR/BWR Colloid Removal to Reduce CRE and Mitigation of No. 1 Seal Failure for PWR Reactor Coolant Pumps P. Robinson ((n,p) Energy, Inc.), D. Hultquist (DC Cook NPP), R. Penney (Prairie Island NPP), R. Gerdus (Vermont Yankee NPP), USA
14:20 - 14:40	ALARA tools: Source Term Control at CNE Cernavoda C. Chitu, A. Nedelcu (Cernavoda NPP), Romania
14:40 - 15:00	Impacts of Ag-110m on Radiation Field Generation: Review of an innovative experiment E. Moleiro, A. Rocher (EDF UNIE-GPEX), T. Tribollet (Civaux NPP), France
15:00 - 15:20	Demonstration of High Purity Germanium Skid D. Perkins, J. McElrath, M. Mura (EPRI), L. Whiteker (Monticello NPP), USA
15:20 - 16:05	<i>Coffee-break, Visit of Exhibition, Posters</i>

<b>Session 4. ISOE &amp; UNSCEAR</b>	
<b>Chairpersons</b>	<b><i>J. Garnier-Laplace (OECD NEA), J. Ma (IAEA – ISOE co-Secretariat)</i></b>
16:05 - 16:35	30 Years of ISOE Global ALARA Sharing: Past, Present & Future B. Boyer, ISOE Chair
16:35 - 17:05	Occupational exposure to ionizing radiation: UNSCEAR Global Survey and ISOE DATA F. Shannoun, V. Holahan, UNSCEAR



# ISOE International Symposium

Tours, 21-23 June 2022

## WEDNESDAY 22 JUNE 2022

<b>Session 5.</b>	<b>Job Experiences (Part I)</b>
<b>Chairpersons</b>	<b><i>R. Parlone (Sizewell B, United Kingdom), J. Bonnefon (EDF DIPDE, France)</i></b>
09:00 - 09:20	ALARA in Repair of Reactor Vessel Flange Surface at Krško NPP B. Breznik (Krško NPP), Slovenia
09:20 - 09:40	Case Report of Incident with High Exposure of Radiation J. Isokivelä (Forsmark NPP), Sweden
09:40 - 10:00	Radiation protection measures during the steam generator heat transfer tubes cleaning at Dukovany NPP R. Svoboda, J. Novak (Dukovany NPP), Czech Republic
10:00 - 10:45	<i>Coffee-break, Visit of Exhibition, Posters</i>
<b>Session 6.</b>	<b>Experiments and new R&amp;D Developments</b>
<b>Chairpersons</b>	<b><i>H. Meijer (Borssele NPP, The Netherlands), P. Weickert (EDF UNIE-GPEX, France)</i></b>
10:45 - 11:05	3D-CZT Gamma-Ray Spectrometers and Imaging Spectrometers for Source Term Characterization at Palisades Nuclear Plant M. Mayers (H3D, Inc.), D. Nestle (Palisades NPP), W. Kaye (H3D, Inc.), USA
11:05 - 11:25	ASTRE Development S. Pומרouly, C. Monier, A. Geay, M. Charwath, S. Tonnoir, V. Lombard (EDF R&D), France
11:25 - 11:45	Development and Operations of the Ultra-Compact Embeddable Gamma Camera Nanopix F. Carrel (CEA LIST), R. Abou Khalil (Orano), V. Schoepff, J-M. Bourbotte, M. Gendreau, M. Imbault (CEA LIST), Z. Mekhalifa (Orano DS), Y. Moline, J-P. Poli, R. Woo (CEA LIST)
11:45 - 12:15	Synthesis of RPM and RB meeting days
12:30 - 14:00	<i>Lunch Break</i>



# ISOE International Symposium

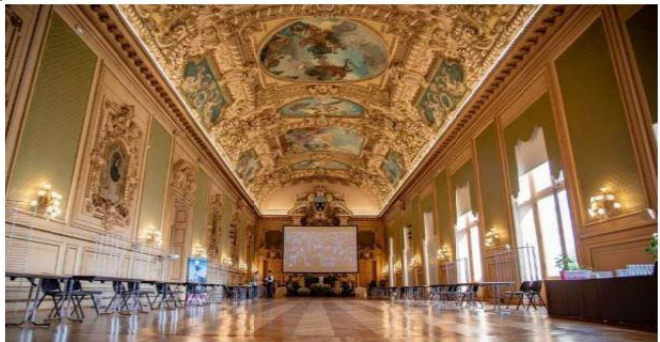
Tours, 21-23 June 2022

<b>Session 7.</b> Chairpersons	<b>RP Aspects of Post-Accident Situations</b> <i>C. Guenault (ASN, France), R. Svoboda, (Dukovany NPP, Czech Republic)</i>
14:00 - 14:30	Health Effects from the Chernobyl Accident E. Cléro (IRSN), France
14:30 - 15:00	Ten years at the Fukushima Daiichi Nuclear Power Station, then and now T. Suzuki (TEPCO D&D Engineering Company), Japan
15:00 - 15:30	The role of the radiological protection expert in stakeholder involvement in the recovery phase of post-nuclear accident situations: Some lessons from the Fukushima-Daiichi NPP Accident T. Schneider (CEPN), France

15:30 - 16:15	<i>Coffee-break, Visit of Exhibition, Posters</i>
---------------	---

<b>Session 8.</b> Chairpersons	<b>Job Experiences (Part II)</b> <i>B. Boyer (Watts Bar NPP, USA), S.-G. Jahn (ENSI, Switzerland)</i>
16:15 - 16:35	Corium stabilization: a challenging Radiation Protection project C. Peretti (EDF DIPDE), France
16:35 - 17:15	ALARA Experience with PWR Thermal Sleeve Replacement at Sizewell B G. Whyberd-Mills, R. Parlone, G. Renn (Sizewell B NPP), United Kingdom

19:30	<b>Symposium Dinner at City Hall</b>
	Address: 104 Boulevard Heurteloup 37000 Tours







# ISOE International Symposium

Tours, 21-23 June 2022

## THURSDAY 23 JUNE 2022

<b>Session 9. RP and Decommissioning</b> <b>Chairpersons</b> <i>E. Thoelen (ENGIE Electrabel, Belgium), I. Calavia (CSN, Spain)</i>	
09:00 - 09:20	ISOE Working Group on Radiological Protection Aspects of Decommissioning Activities at Nuclear Power Plants (WGDECOM) – Outcomes and feedback G. Ranchoux (EDF DP2D), L.-A. Beltrami (ISOE-ETC – CEPN), France
09:20 - 09:40	Decommissioning project, management and planning aspects for the decommissioning of Research Reactor Ispra E. Amoroso, F. Mancini, D. Manes, A. Paratore, E. Grossi, S. Ravera (SOGIN), Italy
09:40 - 10:00	Radiological investigations in hard-to-access zones during D&D operations by remote OSL/FO dosimetry S. Magne, M. Horpin (CEA LIST - Laboratoire Capteurs Fibres Optiques), W. Husson (CEA LIST - Laboratoire Capteurs Architectures Electroniques), S. Dogny (ORANO), P.G. Allinei, O. Guéton, M. Ledieu (CEA DEN - DTN-SMTA-LMN), B. Leibovici (SDS Group), France
10:00 - 10:20	Development of a Cask for Interim Storage and Final Geological Disposal in Switzerland Approach, Challenges and Realization S. Pudollek (Nagra), E. Neukäter, R. Graf (Mühleberg NPP), Switzerland
10:20 - 11:05	<i>Coffee-break, Visit of Exhibition, Posters</i>
<b>Session 10. RP Indicators</b> <b>Chairpersons</b> <i>J. Isokivelä (Forsmark NPP, Sweden), E. Neukäter (Mühleberg NPP, Switzerland)</i>	
11:05 - 11:25	Improving occupational radiation exposure using ALARA tools: performance indicators C. Chitu, A. Nedelcu, L. Samson (Cernavoda NPP), Romania
11:25 - 11:45	Dose per RCA-hour; a useful radiological protection indicator? R. Parlone, G. Renn (Sizewell B NPP, United Kingdom), B. Joerger (Penly NPP, France)
11:45 - 12:05	RP Management Recovery Plan at EDF: Indicators and Tools P. Weickert (EDF UNIE-GPEX), France
12:05 - 12:20	Distinguished Papers and Closure of the Symposium



# ISOE International Symposium

Tours, 21-23 June 2022

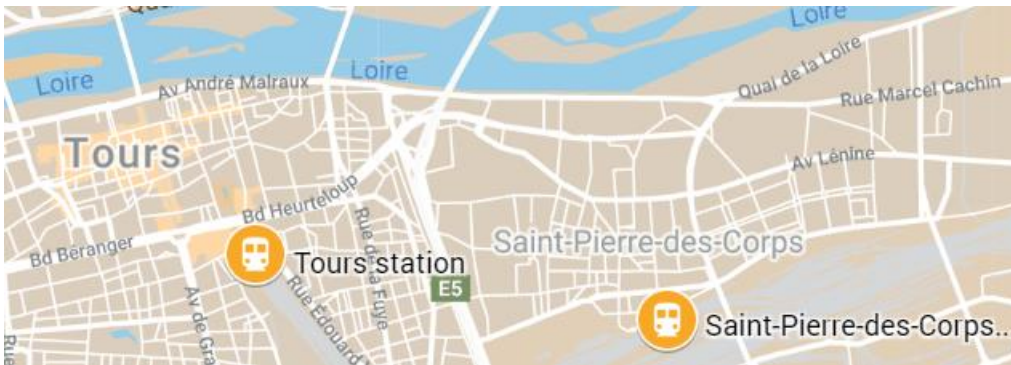
## FRIDAY 24 JUNE 2022

**Technical Visit to Civaux NPP is cancelled**

## HOW TO GET TO TOURS?

Tours is located at about 250 km from Paris.  
The high-speed train TGV is the fastest way to get to Tours.

There are 2 Railway Stations: Tours Centre and Saint-Pierre-des-Corps



Journey time:

- From Paris to Tours Centre: 1h10
- From Paris Charles de Gaulle Airport to Saint-Pierre-des-Corps: 1h45

## REGISTRATION TO THE SYMPOSIUM

	Registration Fees	Online Registration
Participant	500 € VAT included	<a href="#">Registration form</a>
Commercial Booth	2000 € VAT included	<a href="#">Booth Registration form</a>

**Payment of the fees must be done after online registration and receipt of the invoice**

Information can also be found on ISOE website: [www.isoe-network.net](http://www.isoe-network.net)