



PROGRAM

DEM 2024

International Conference on
Decommissioning Challenges:
Role and Importance of Innovations

MAY 27-29, 2024

Palais des Papes
Avignon, France

Sfen

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Why take part?

The 8th edition of this 30-year-old conference will be focused on the **role and importance of innovations** and will address **decommissioning challenges/strategies, current and tomorrow's projects.**

Long term Decommissioning programs of nuclear facilities (NPPs, fuel cycle plants, research facilities, etc.) are major stakes for the nuclear industry, and we need innovation initiatives.

How to trigger innovation? How could we **attract young researchers and engineers in D&D?** What are **the next D&D, recycling and waste management** challenges? How to **anticipate the future dismantling of very new projects**, as SMR and AMR?

This Sfen international conference is **a unique opportunity to share worldwide experience** in the field of Decommissioning Strategy and Program Development, Regulation Evolution, Development of New D&Ds' Technologies, Initial Radiological State Characterization, Feedback & Challenges of D&D Complex Operations, Material and Radioactive Waste Management, Buildings and Sites Rehabilitation, Economic, Financial Aspects and Contracting of Dismantling Operations, Digital Contribution to D&D Operations.



**AN INTERNATIONAL
EVENT**



**PLENARIES AND
TECHNICAL SESSIONS**



**POSTERS
AND EXHIBITION**



**350 TO 500
ATTENDEES FROM
ALL OVER THE WORLD**



**NETWORKING
AND SIDE EVENTS**



AVIGNON
PALAIS DES PAPES



Organised by:



Sponsored by:

● Platinum



● Gold



● Silver



In cooperation with: IAEA, ENS, OECD-NEA

General information



Palais des Papes - Convention Center
Place du Palais des Papes
84000 Avignon - France

HOW TO COME?

BY PLANE

Marseille Provence Airport
45 mins drive from Avignon.
59 international destinations

BY TRAIN, 2 STATIONS

- Avignon Center Station
- Avignon TGV Station

A shuttle bus connects Avignon TGV station to Avignon center station in 4 minutes
All lines: www.voyages-sncf.com

BY TAXI

Taxis Radio Avignonnais
+ 33 (0)4 90 82 20 20

BY CAR

Highway A7
Exit Avignon Sud (Marseille, Nice, Italy)
Exit Avignon Nord (Lyon, Paris)
Highway A9
Exit Remoulins (Nîmes, Montpellier, Spain)
RN 7 and RN 100
National and Regional Traffic Information Center

ACCOMMODATION

Due to a peak traffic period, we highly recommend you to book your **transport tickets** and **accommodation** as soon as possible.



[Mercure Pont d'Avignon](#)

[Mercure Palais des Papes](#)

[Hôtel de l'Horloge](#)



[Hôtel du Palais des Papes](#)

[Hôtel Kyriad Palais des Papes](#)

TOURIST OFFICE [Local information]

<https://avignon-tourisme.com/en/>

EMERGENCY SERVICES

In case of an emergency, please Call 112



**CONFERENCE
OFFICE**

sfen.events@sfen.org

RESTAURANTS

You will find hereafter a range of local restaurants within a short distance from the Palais des Papes. There's something for everyone!



FOR A QUICK BITE TO EAT

- **LA BRASSERIE DE L'HORLOGE**

26 Place de l'Horloge, 84000 Avignon
+33 (0)4 90 01 91 82

- **PINOCCHIO**

29 Rue Théodore Aubanel, 84000 Avignon
+33 (0)4 90 82 60 90



FRENCH TRADITIONAL CUISINE

- **LE MOUTARDIER DU PAPE**

15 Place du Palais 84000 Avignon
+33 (0)4 90 85 34 76

- **LA SALLE À MANGER**

4 place de l'Amirande 84000 Avignon
+33 (0)4 90 14 20 20

- **LE CARRÉ DU PALAIS**

1 Place du Palais 84000 Avignon
+33 (0)4 65 00 01 01



FOR SPECIAL OCCASIONS BUT ALSO AFTER HARD DAYS WORK

RESERVATION REQUIRED

- **POLLEN**

18 rue Joseph Vernet, 84000 Avignon
+33 (0)4 86 34 93 74



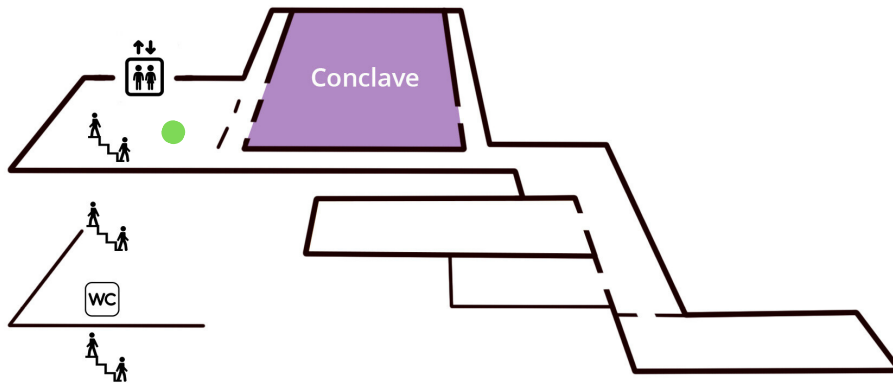
- **LA VIEILLE FONTAINE**

Hôtel d'Europe, 12 place Crillon, 84000 Avignon
+33 (0)4 90 14 76 76

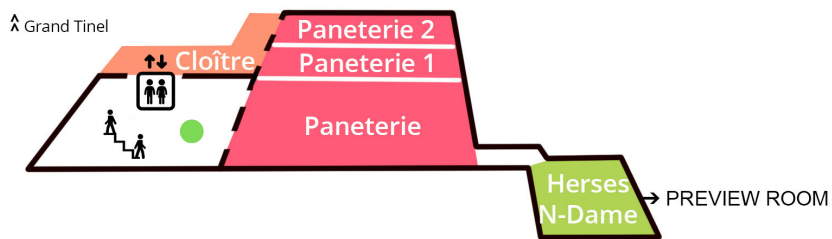


Floor plan

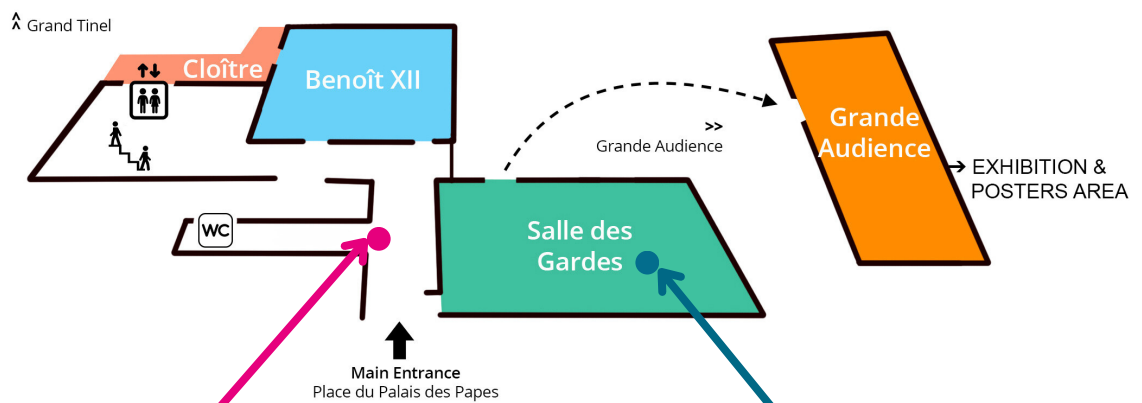
Level 3



Level 1



Level 0



Check-in

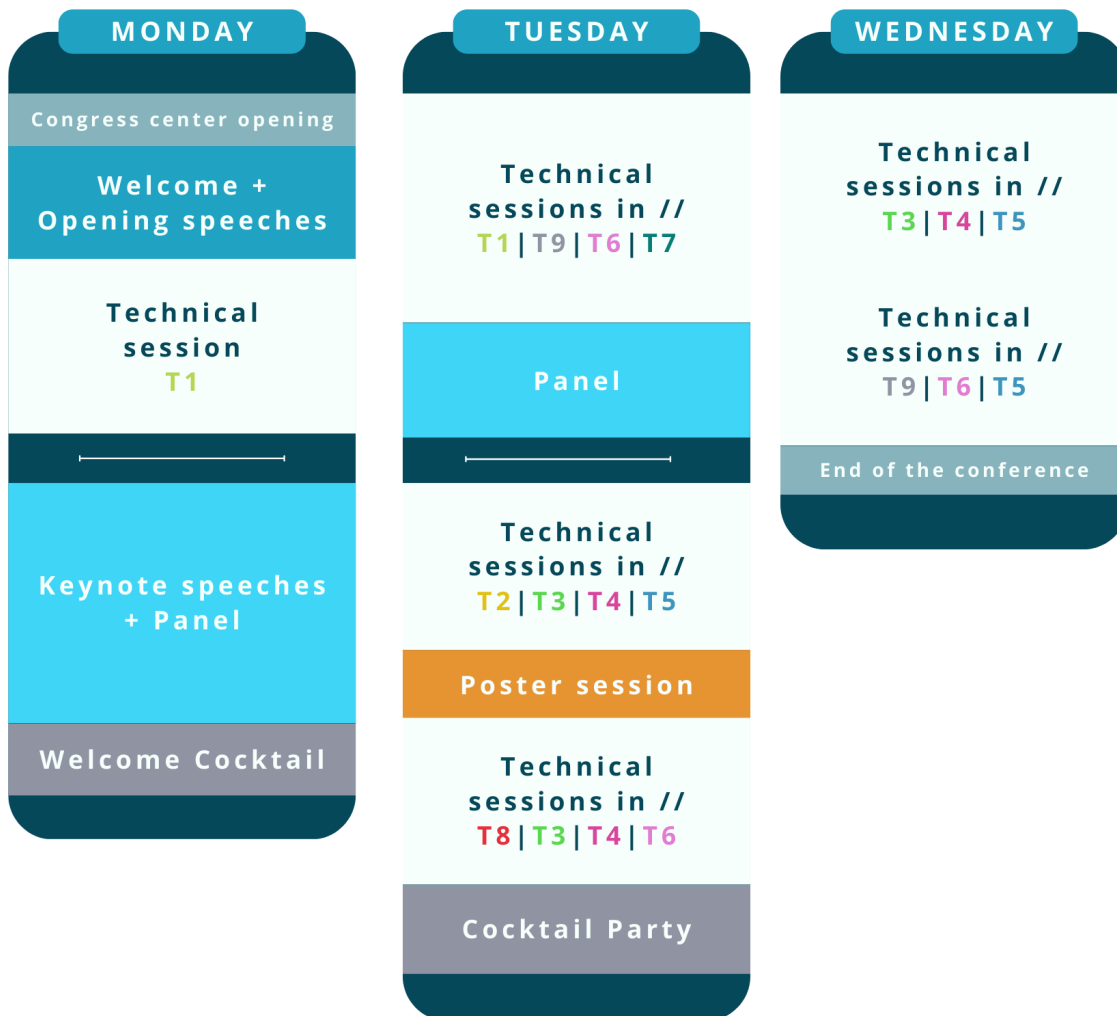
Conference office

Water fountain

● On level 1 and 3

Conference rooms: Conclave, Benoît XII, Paneterie 1 & Paneterie 2

Program overview



Topics

- 01 - Decommissioning Strategy and Program Development
- 02 - Regulation Evolution
- 03 - Development of New D&Ds' Technologies
- 04 - Initial Radiological State Characterization
- 05 - Feedback & Challenges of D&D Complex Operations
- 06 - Material and Radioactive Waste Management
- 07 - Buildings and Sites Rehabilitation
- 08 - Economic and Financial Aspects of Dismantling Operations
- 09 - Digital Contribution to Dismantling Operations

Monday 27 May

08:00

Congress Center Opening - Check-in

09:30 - 10:30

Welcome and Opening

Welcome

Valérie Faudon, Sfen

Opening speeches

Jean-Christophe Patout - Orano, Gloria Kwong - IAEA, tbd CEA, Gabriele Grassi - OECD NEA, Sylvain Granger - EDF

10:30 - 12:30

 **T01: Decommissioning Strategy and Program Development - Various International Reactors Decommissioning Strategies**

181 - Status and trends in decommissioning of nuclear power plants worldwide: ENRESA's perspective

E.G. Neri (Enresa, Spain)

007 - Addressing national nuclear back-end since the start of the in-dustry

M. Macasek (Emirates Nuclear Energy Company, United Arab Emirates)

125 - ITER Decommissioning Challenges

D. Torcy (ITER Organization, France)

206 - Driving Real Innovation and Different Perspectives into solutions for Graphite Reactor Dismantling

S. Boniface (NDA, United Kingdom)

132 - A Holistic Approach to Reactors Decommissioning of 70 Years of Innovation

G. Al Haddad (CNL, Canada)

102 - Fessenheim NPP dismantling strategy: planning and transition phase

D. Morel (EDF, France)

12:30 - 14:00

 **Opening of the Exhibition - Finger Lunch**

14:00 - 15:00

Keynote speeches

To be announced soon

15:00-16:15

Plenary session "Nuclear Industry Attractiveness for Young Generations"

Signs of the global nuclear energy revival

> **Valérie Faudon**, Sfen - Executive director

Dismantling and waste management at the heart of new designs

> **Laurence Piketty**, CEA - Deputy general administrator & Sfen - D&D technical section Chairman

Recruitment challenges: the strengths of the nuclear sector and in particular in D&D's

> **Olivier Bard**, Gifen - General delegate

What training for nuclear and D&D's careers?

> **Vincent Chapurlat**, IMT Mines Alès - Professor

International cooperation: EC and Euratom actions in favor of innovative projects and nuclear training

> **Seif Ben Hadj Hassine**, European Commission - Policy officer, research & innovation

16:15-17:30

Panel «How the attractiveness of careers in nuclear D&D could be called into question?»

Moderator

> **Ben Bertaux**, IAEA - Junior decommissioning specialist & consultant

Speakers

> **Riccardo Chebac**, Politecnico di Milano - Nuclear graphite reactors engineer & co-founder of the startup GraphiCore

> **Fadoua El Moussaada**, Jacobs - Nuclear mechanical engineer

> **Marina Francis**, ANSTO - Counsellor (Nuclear) at Australian Permanent Mission to the United Nations Vienna

> **Mergim Jakupi**, SKB - Nuclear waste engineer & Vattenfall Nordic Nuclear Trainee

> **Archita Rajkumari**, IFE - Research scientist

17:30 - 17:45

ENS High Scientific Council 2023 PhD Award Ceremony

Presented by

> **Eric Proust**, President of the European Nuclear Society High Scientific Council

18:00 - 19:30

Welcome Cocktail

Sponsored by:  Westinghouse

Tuesday 28 May

08:00

Congress Center Opening - Check-in

08:30 - 10:30

T01: Decommissioning Strategy and Program Development - Various International Specific Equipment Decommissioning Strategies

185 - Lessons Learned During Decommissioning and Site Restoration of the Whiteshell Laboratories Project in Canada
B. Wilcox (CNL, Canada)

116 - Decommissioning of small facilities subject to licensing or notification under the Radiation Protection Act in Germany
P. Imielski (GRS gGmbH, Germany)

202 - D&D of Orano fuel cycle facilities : strategy and main challenges
P. Derycke (Orano, France)

180 - The Spanish Decommissioning Programme – Lessons learned from the Jose Cabrera NPP D& D Project
M. Ondaro (Enresa, Spain)

106 - Decommissioning of EDF Graphite Gas reactors - Civil engineering program
Y. El Hamdaoui (EDF, France)

009 - Modular and transportable ventilation system: a multi-purpose solution for nuclear decommissioning projects
P. Lely (EDF, France)

08:30 - 10:30

T06: Material and Radioactive Waste Management - Processes / Technology / Waste 1/2

170 - NPP Mühleberg Decommissioning – Dismantling and Disposal of water separator reheaters
S. Pudollek (Nagra, Switzerland)

146 - Conditioning of ion exchange resins : From Past to Future in a Sustainable Approach
L. Stefan (Orano, France)

063 - TN MW - Modular and Optimized triple purpose cask for wastes
C. Alistan (Orano, France)

034 - DEM&MELT: A Fit-for-Purpose Waste Treatment Solution
R. Didierlaurent (Orano, France)

027 - Assessment of moisture content during decommissioning of nuclear facilities using electrical impedance spectroscopy
T. Nurjahan (Technische Universität Dresden, Germany)

014 - Influence of geopolymer formulation on Sr²⁺ sorption properties
A. Varon (CEA, France)

08:30 - 10:30

T07: Buildings and Sites Rehabilitation

147 - Improved Clearance Verification for Sites

J. Jiselmark (Green Field Strategies AB, Sweden)

011 - Investigation of the influence of some key parameters in the groundwater flow and solute transport modelling for In-Situ Decommissioning projects

C. Androuet (CNSC, Canada)

161 - Development of Particulate Foam Flotation for Remediation of Radioactive Contaminated Soils

S. Faure (CEA, France)

136 - Photovoltaic power plants on uranium ore processing tailings storage facilities

N. Himeur (Orano, France)

089 - Contaminated Land Remediation on a nuclear facility under de-commissioning: two case studies

T. Le Druillennec (EDF, France)

203 - Ensuring Sustainability and Resiliency of Decommissioning and Remediation Projects in the Scope of Complex Sites

H. Monken-Fernandes (IAEA, Austria)

08:30 - 10:30

T09: Digital Contribution to Dismantling Operations - The Use of BIM in D&D

042 - The Role of Mock-Ups in Nuclear Decommissioning Programs: Past, Present, and Future

S. Delavalle (Veolia Nuclear Solutions, United Kingdom)

013 - Digitization of spatial data acquisition for building clearance

M. Muessle (Karlsruhe Institute of Technology, Germany)

097 - Digital twin – How digital technologies create value

S. Lelong (EDF, France)

143 - CNL Safely Advancing the Decommissioning of Complex Facilities in Canada through Digital Visualization

P. Aikens (CNL, Canada)

162 - Digital tools at decommissioning

J. Luukkanen (Fortum Oyj, Finland)

165 - Digitalization of dismantling - from operation to release of structures and components

M. Adam (Framatome GmbH, Germany)

10:45 - 12:15

Panel "waste management and sustainability"

Complete list of speakers to be announced soon

12:15 - 13:50

Finger Lunch

13:50 - 15:30

● **T02: Regulation Evolution**

030 - The work of the ENISS Waste and Decommissioning Safety Group

S. Carroll (Vattenfall, Sweden)

104 - Safety Demonstration graded with the risks level for EDF facilities being dismantled

E. Sueur (EDF, France)

164 - Preparing Decommissioning Regulatory Infrastructure for Embarking Countries with Ageing Nuclear Facilities: Case Study of Indonesia

R. Alamsyah (BAPETEN, Indonesia)

091 - Getting Brennilis Decommissioning Authorisation Decree: Feedback on the Process

J. Truffet (EDF, France)

209 - Nuclear Decommissioning: Safeguards Considerations

G. Kwong (International Atomic Energy Agency, Austria)

13:50 - 15:30

● **T03: Development of New D&Ds' Technologies - Innovations in D&D Preparation**

048 - Development of a 360° video application for hostile environment investigations

Y. Kerkhof (CEA, Univ. Montpellier, France)

072 - Using Innovative Technology and Techniques to Improve Reliability and Performance in Nuclear Decommissioning Projects

M. Bjork (Orano GmbH, Germany)

036 - TOMIS: a transportable high-energy X-ray tomograph with low dosimetric impact for the characterization of large concrete nuclear waste packages

A. Sardet (CEA, France)

026 - Detection of Uranium Contamination in the Process of Dismantling and Decommissioning Nuclear Facilities

F. Salvador (CEA, France)

006 - Development of decontamination process for metallic radioactive effluents using precipitation

M. Robin (Subatech (UMR 6457), France)

13:50 - 15:30

T04: Initial Radiological State Characterization - Stats / Sampling / Optimisation

101 - Samples from activated structures of the Brennilis reactor block – Updating of the radiological inventory by calculation/measurement

Q. Deyres (EDF, France)

068 - Optimization of the trajectory of a Rover For 7D mapping of nuclear contamination using a Temporal Compton camera

M. Lopez (University of Technology of Troyes, France)

081 - Geostatistical deconvolution to map punctual sources from radiation measurements

Y. Desnoyers (Geovariances, France)

046 - CARTOSTAT a powerful software for the radiological characterization providing 2D and 3D cartography and sampling strategy from measurements with uncertainty and limit of detection data

N. Perot (CEA, France)

13:50 - 15:30

T05: Feedback & Challenges of D&D Complex Operations - Feedback of the Application of New Technologies in Decommissioning Activities

158 - Full System Decontamination (FSD) - A Possibility To Reach Melting Criteria

C. Topf (Framatome GmbH, Germany)

190 - Marcoule UP1 MAR200 Use of Remotely Handled Equipment Associated with Laser Cutting for Spent Fuel Dissolver Dismantling

F. Saby (Onet Technologies ND, France)

100 - INNOvative tools for dismantling of GRAphite moderated nuclear reactors: inno4graph project

L. Thenault (EDF, France)

074 - Hot Cells and Remote Equipment for D&D Legacy Waste Retrieval, and similarities with Fuel Debris Retrieval in Fukushima 1F

D. Ogawa (Orano, Japan)

051 - Dismantling of nuclear areas by using milling tools

F. Scelles (Orano, France)

15:30 - 16:50

Poster Session - Coffee Break

sponsored by:



16:50 - 18:30

● **T03: Development of New D&Ds' Technologies - Innovations on Worksite Operations**

148 - CASIMIR: system-level testing for electronics equipment in D&D operations

J. Favrichon (CEA, Univ. Montpellier, France)

193 - Robotic and Sensor Technologies for Nuclear Decommissioning of Department of Energy Sites

L. Lagos (Florida International University, United States of America)

123 - LD-SAFE: Laser Cutting Demonstration for Nuclear Power Reactors Dismantling

P. Daguin (ONET, France)

094 - FETCH : Fast Tube Extraction for Brennilis 2H2O Nuclear Reactor

J.M. Alvarez Palacio (EDF, France)

139 - Hazardous Situations Report in real time with a Smart Voice Assis-tant for the field workers

A. Joly (SPIX industry, France)

16:50 - 18:30

● **T04: Initial Radiological State Characterization - Characterization / Strategy**

144 - Focus on a Soil Management Plan: La Hague's Parc Aux Ajoncs experience

M. Rennesson (Orano, France)

179 - Initial radiological state characterization

M. Gomez (Enresa, Spain)

045 - Small data and statistical approach for graphite radiological characterization in gas-graphite reactor

N. Perot (CEA, France)

024 - DEMAIN, a scientific calculation tool for characterization of nuclear reactors in D&D

C. Le Loirec (CEA, France)

141 - Alpha Contamination Detection Monitor for Small Complex Objects

E. El Haber (CEA, Univ. Montpellier, France)

16:50 - 18:30

T06: Material and Radioactive Waste Management - Processes / Technology / Waste 2/2

189 - ANSTO's Synroc Waste Treatment Facility of Intermediate Level Liquid Waste from Mo-99 Production
R. Holmes (ANSTO, Australia)

115 - Aerosol characterization during laser cutting of stainless-steels for underwater, air and nitrogen conditions in the framework of LD-SAFE project
E. Porcheron (IRSN, France)

076 - Microscale Dissolution of Cerium and Zirconium Oxide Nanoparticles for Nuclear Fuel Debris Retrieval
Y. Zhang (University College London, United Kingdom)

159 - STORAGE application: Calculation of hydrogen formation resulting from mineral ion-exchange resin irradiation
I. Boughattas (Orano, France)

133 - Optimisation of the process for the synthesis of sodium nonatitanate using anatase and study of its ion exchange properties for use in nuclear wastewater treatment
Y. Raghavendra (Bhabha Atomic Research Centre, India)

16:50 - 18:30

T08: Economic and Financial Aspects of Dismantling Operations

110 - Decommissioning and radioactive waste management in France: regulation and focus on EDF (organization and financial aspects)
F. Noat (EDF, France)

140 - Update on Decommissioning Cost Estimation Activities from the NEA
N. Bergh (Westinghouse Electric Company, Sweden)

065 - Optimising the dismantling cost at the design phase - Framatome solutions for the NUWARD SMR
L. Sgandurra (Framatome, France)

157 - Waste Management in Decommissioning
E. Kalviainen (Fortum Oyj, Finland)

154 - Circular economy in a nuclear back-end context
A. Larsson (Cyclife-EDF, Sweden)

19:30 - 22:00

Cocktail Party

Sponsored by: 
orano

Wednesday 29 May

08:00

Congress Center Opening - Check-in

08:30 - 10:30

T03: Development of New D&Ds' Technologies - Achievements Resulting from Innovations

211 - AI, data and robotics for decommissioning and Norwegian Nuclear

I. Szóke (Institute for Energy Technology, Norway)

061 - PHENIX, Sodium removal from Phenix secondary loops - Focus on the first loop treatment

F. Dominjon (CEA, France)

088 - Remote dismantling of the internal structures of Superphenix fast breeder reactor

E. Delon (EDF, France)

035 - An innovative use of carbon brush for the electrochemical decontamination of wastes

M. Gal (Orano, France)

103 - Robotics in nuclear facility remediation for category 0 surfaces

M. Iborra (EDF, France)

187 - Gamma-ray Imaging Inside a Reactor Vessel to Support HIFAR Decommissioning

B. Begg (ANSTO, Australia)

08:30 - 10:30

T04: Initial Radiological State Characterization - Mesure

135 - The Backgrounds and Current Status of Analytical Activities in Fukushima Daiichi NPP

K. Kato (NDF, Japan)

112 - Elucidating α -contamination of reactor buildings by analyzing the stagnant water for decommissioning Fukushima Daiichi NPS

A. Nitta (JAEA, Japan)

098 - Innovative alpha-detection system based on radiochromic diacetylenic monomer

V. Desgranges (EDF, France)

155 - Development and field-test of an "in-situ" alpha air monitor in a harsh environment

Y. Tsubota (JAEA, Japan)

049 - Destructive analysis for radiological characterization of graphite samples originated from G1 reactor

C. Gautier (CEA, France)

039 - Characterisation of nuclear irradiated graphite by non-destructive beta spectrometry using an MLEM deconvolution algorithm

L. Fleres (CEA, Univ. Montpellier, France)

08:30 - 10:30

● **T05: Feedback & Challenges of D&D Complex Operations - Feedback of PWR Decommissioning Projects**

129 - Optimized Segmentation of the Crystal River Unit 3 Reactor

S. Guillot (Orano USA, United States of America)

121 - Dismantling of the Ågesta PHWR Reactor Vessel and Internals

N. Bergh (Westinghouse Electric Company, Sweden)

201 - Progress of restoration activities in the José Cabrera D&D project

E. Gimeno Blesa (Enresa, Spain)

050 - Segmentation and Removal of the BR3 Biological Shield

K. Van den Dungen (SCK CEN, Belgium)

134 - Implementation and Results of the Full System Decontamination operation with Framatome CORD® UV process at Fessenheim nuclear power plant prior to decommissioning

L. Schwaller (Framatome, France)

055 - Application of a sophisticated robot system in the remotes cutting and fragmentation of RPVI of Germany's Mülheim Kärlich Power Station – practical experiences of the first year of operation

F. Henglein (Orano GmbH, Germany)

11:00 - 13:00

● **T05: Feedback & Challenges of D&D Complex Operations - Feedback, Challenges of Decommissioning Complex Nuclear Sites**

127 - Advancing Chalk River Laboratories Decommissioning Through Learning and Innovation

C. Griener (CNL, Canada)

093 - EDF INDUSTRIAL DEMONSTRATOR - A way to mitigate risks and to ensure safe decommissioning activities

P. Lefevre (EDF, France)

019 - Dismantling Preparation - MAR400 Pools P&Q Case

Y. Chevalier (CEA, France)

153 - Latina NPP - Boilers Dismantling Design

E. De Geronimo (Sogin, Italy)

057 - Optimizing Nuclear Power Plant Decommissioning: The Rip & Ship Strategy for Steam Generators at NPPs in Germany

T. Lopian (Framatome GmbH, Germany)

126 - Primary circuit and auxiliary systems dismantling in Trino NPP

P. Bronzi (Sogin, Italy)

11:00 - 13:00

● **T06: Material and Radioactive Waste Management - Management Strategy Including SMR**

178 - Materials management at Garoña NPP D&D by Enresa: strategies, innovation, and optimization
D. Espejo (Enresa, Spain)

083 - Management Options for Non-compliant Radwaste Packages During the Clean-up Phase
C. Decanis (CEA, France)

066 - Waste-led decommissioning: global solutions to local projects
T. Majchrowski (Cyclife GmbH, Germany)

156 - Waste Management in Small Modular Reactors: "is it receiving enough attention?"
D. David (Framatome GmbH, Germany)

118 - Waste Management Applied to Molten Salt Reactor
R. Lemaire (Naarea, France)

099 - An example of methodology for analysing SMR/AMR waste
A. Saturnin (CEA, France)

11:00 - 13:00

● **T09: Digital Contribution to Dismantling Operations - Innovative Digital Solutions to Faster Decommissioning Preparation**

021 - Coupling Graphics Processor Unit with Expected-Value Estimator for Global Mesh Tallies in Monte Carlo Simulations
H. Hutinet (CEA, France)

022 - Gaussian Process based estimation of dose equivalent rate for discontinuous signal and varying source localization
P.L. Antonsanti (CEA, France)

105 - Fessenheim pressurizer decommissioning scenario simulations focus on occupational radiation exposure
N. Andrews (EDF, France)

047 - Agile and intuitive robotics for D&D operations: use case of automated laser cutting with waste sorting
L. Labarussiat (CEA List, France)

077 - How serious games coupled with e-learning methods can provide a basis for training operators in technical concepts: an example with laser-cutting process for nuclear worksite dismantling operations
V. Testard (INSTN, France)

064 - Requirements Management Analytics Enabled by Model Based System Engineering and Artificial Intelligence for Decommissioning and Dismantling Projects
E. Roumili (Assystem, France)

13:00

End of the Conference

Posters

01: Decommissioning Strategy and Program Development

114 - Laser Nuclear Decontamination and Decommissioning with Manual and Fully Automated Laser Robotic Solutions
J. Duchazeaubeneix (MELIAD, France)

02: Regulation Evolution

023 - Interactions between the process of obtaining a dismantling decree and end-of-operation operations
C. Brouillard (CEA, France)

03: Development of New D&Ds' Technologies

018 - Robotic retrieval and infrared hyperspectral imaging for sorting
G. Canneau (CEA, France)

044 - Remote dismantling of the internal structures of Superphenix fast breeder reactor
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210 - AI, data and robotics for decommissioning and Norwegian Nuclear
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G. Dinslage (Helmholtz-Zentrum, Germany)

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T. Barretto (Karlsruhe Institute of Technology, Germany)

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