



10th edition of the

Summer School on Nuclear Decommissioning and Waste Management

European Commission, Joint Research Centre

9-13 July 2018, JRC Ispra (Italy), Building 36

Course Programme

Support to the Programme by:



Monday 9 July 2018

Session 1:

INTRODUCTION TO NUCLEAR DECOMMISSIONING AND WASTE MANAGEMENT

Chair: Pierre Kockerols, European Commission Joint Research Centre

09:00	Welcome and Presentation of the course, <i>Franck Wastin, Joint Research Centre</i>
09:45	Intro to the life-cycle of nuclear power <i>Pierre Kockerols, Joint Research Centre</i>
10:15	<i>Coffee break and group picture</i>
10:45	What is radioactive waste? Overview of safety standards and overview of ongoing radioactive waste projects <i>Gérard Bruno, International Atomic Energy Agency</i>
11:30	What is nuclear decommissioning? <i>Francesco Troiani, SOGIN Italy</i>
12:00	European rules for the management of radioactive waste <i>Gianfranco Brunetti, European Commission, DG for Energy (tbc)</i>
12:30	<i>Buffet lunch</i>
13:30	Example of a nuclear facility (in 3D imaging) Introduction to the practical exercises and 'case studies' in groups <i>Pierre Kockerols, Joint Research Centre</i>
14:15	Overview nuclear decommissioning safety standards and overview ongoing projects <i>Gérard Bruno, International Atomic Energy Agency</i>
14:45	What about the public opinion and the interaction with society? <i>Marie-Claire Cantone, University of Milano</i>
15:15	<i>Coffee break</i>
15:45	Status of the waste disposal options in the world <i>Gunnar Buckau, Joint Research Centre</i>
16:15	Status of nuclear decommissioning in the world <i>Pete Burgess, United Kingdom</i>
17:30	<i>Closure 1st day</i>

Tuesday 10 July 2018

Session 2: INTRODUCTION TO RADIATION PROTECTION

Chair: Pete Burgess, Co-chair: Andrea Ravazzani

09:00	The biological health effects of radiation and the principles of dose limitation <i>Pete Burgess, UK</i>
09:45	How can we control the radiation risks? <i>Andrea Ravazzani, JRC, (tbc)</i>
10:15	Coffee break
10:45	Practical exercises on radiation protection: radiation measurements and protective equipment <i>Andrea Ravazzani</i>
12:30	Buffet lunch

Session 3a: NUCLEAR DECOMMISSIONING

Chair: Celso Osimani, Co-chair Pierre Kockerols

14:00	Introduction: decommissioning from closure to final release <i>Celso Osimani</i>
14:10	Closure of the installation, clean-out, removal nuclear fuel, radiological characterisation <i>Federica Simonelli, Joint Research Centre</i>
14:40	Planning of the decommissioning work and cost assessment <i>Gianfranco Brunetti, European Commission, DG for Energy (tbc)</i>
15:15	Coffee break
15:45	Existing decontamination and dismantling techniques <i>Luc Ooms SCK•CEN, Belgium</i>
16:20	New developments in decontamination and dismantling techniques <i>Martin Brandauer, KIT, Germany</i>
17:00	Environmental remediation at the end of decommissioning <i>EA, UK (tbd)</i>
17:30	Closure

Wednesday 11 July 2018

Session 3b: NUCLEAR DECOMMISSIONING (continuation)

Chair: Celso Osimani, Co-chair Pierre Kockerols

09:00	Decommissioning safety and licensing <i>Luc Ooms SCK•CEN, Belgium</i>
09:30	Practical 'case studies' in groups <i>Pierre Kockerols, JRC</i>
10:30	Coffee break
11:00	Practical 'case studies' in groups (continued)
12:30	Buffet lunch

Session 4a:

RADIOACTIVE WASTE MANAGEMENT IN NUCLEAR DECOMMISSIONING

Chair: Alena Zavazanova (IAEA), Co-chair Federica Simonelli (EC JRC)

14:00	Radioactive waste classification <i>Alena Zavazanova, IAEA</i>
14:10	Radioactive Waste and material characterization <i>JRC Ispra, (tbd)</i>
14:50	Pre-treatment, treatment and conditioning of radioactive waste of various origin (including disused radioactive sources) <i>Jeroen Welbergen, COVRA, the Netherlands</i>
15:30	Coffee break
16:00	Waste and material clearance <i>Gerhard Proehl, former IAEA, Germany</i>
16:45	Storage of radioactive waste and spent fuel <i>Jeroen Welbergen, COVRA, the Netherlands</i>
17:30	Closure

Thursday 12 July 2018

Session 4b:

RADIOACTIVE WASTE MANAGEMENT (continuation)

What to do with waste in the long term?

Chair: Alena Zavazanova (IAEA), Co-chair Federica Simonelli (EC JRC)

09:00	Safety aspects of predisposal and disposal of radioactive waste <i>Philip Metcalf, former IAEA, Austria</i>
09:30	Disposal – near-surface, borehole disposal and geological disposal <i>Steve Barlow, Nuclear Decommissioning Authority, UK</i>
10:30	Coffee break
11:00	Concept of the Safety Case for Radioactive Waste Management <i>Philip Metcalf, former IAEA, Austria</i>
11:30	Practical exercises, 'cases' <i>Philip Metcalf, former IAEA, Austria</i>
12:30	Buffet lunch

Session 5:

Visit of the JRC-Ispra Decommissioning site

Chair: Francesco Basile, Joint Research Centre

14:00	
-	Guided tour of the facilities on the JRC-Ispra site (in groups) <i>Joint Research Centre</i>
17:00	

EVENING LECTURE *Chair: Paolo Peerani, JRC*

18:15	Working in decommissioning and waste management <i>Young engineer, Industry (tbd)</i>
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Friday 13 July 2018

Session 6:

SOCIETAL ASPECTS OF DECOMMISSIONING AND WASTE MANAGEMENT

Chair: Marie-Claire Cantone, Co-chair: Alexandra van Kalleveen

09:00	Introduction on nuclear energy and society <i>Marie-Claire Cantone, University of Milano, Italy</i>
09:15	Radioactive waste management as a socio-technical challenge Insights on the Belgian case <i>Jantine Schröder, SCK•CEN, Belgium</i>
09:45	Communication with stakeholders on decommissioning <i>Diletta Coletta Invernizzi, University of Leeds, United Kingdom</i>
10:15	<i>Coffee break</i>
10:45	The French experience of national public debate on radioactive waste management <i>Ludovic Vaillant, CEPN, France</i>
11:15	Open discussion with participants on involvement of stakeholder <i>Marie-Claire Cantone, University of Milano, Italy</i>
11:45	Topical exercise on stakeholder involvement <i>Pierre Kockerols, Joint Research Centre</i>
12:15	<i>Buffet lunch</i>

FINAL TEST FOR CERTIFICATE AND CLOSURE

Chair: Pierre Kockerols, Co-chair Daniela Santopolo

13:30	Results of the case study <i>Pierre Kockerols, Daniela Santopolo, Joint Research Centre</i>
14:00	Voluntary final test for the students
15:00	<i>Closure of the Summer School, Coffee break</i>
15:00	
-	Jobs in nuclear decommissioning Exchanges between students and industrial actors
16:30	