



Course Programme

Summer School on Nuclear Decommissioning and Waste Management

Joint Research Centre, Ispra site

(by videoconference)

6th to 10th September 2021



11th edition of the

Summer School on Nuclear Decommissioning and Waste Management

European Commission, Joint Research Centre
JRC-Ispra (Italy), by videoconference

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Course Programme

The Summer School on Nuclear Decommissioning and Waste Management frames within the European **ELINDER** project, aiming to raise the interest of students and professionals and to stimulate careers in this important and emerging field, by offering a set of attractive theoretical and practical learning opportunities.

The Summer School on Nuclear Decommissioning and Waste Management is one of the Generic ELINDER Courses introducing the topic of nuclear decommissioning.



For more information on ELINDER: [ELINDER website](#)

For questions on ELINDER please contact Daniela Santopolo daniela.santopolo@ec.europa.eu

Acknowledgements:

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Monday 6 September 2021

Session 1

INTRODUCTION TO NUCLEAR DECOMMISSIONING AND WASTE MANAGEMENT

09:15	Welcome and presentation of the course, introduction participants <i>Pierre Kockerols, European Commission Joint Research Centre</i>
09:30	Intro to the life-cycle of nuclear power <i>Daniela Santopolo, Joint Research Centre</i>
10:15	<i>Break</i>
10:30	What is nuclear decommissioning? <i>Pierre Kockerols, Joint Research Centre</i>
11:15	Status of the waste disposal options in the world <i>Zdenko Simic, former Joint Research Centre</i>
12:00	European rules for the management of radioactive waste <i>Gianfranco Brunetti, European Commission, DG Energy</i>
12:45	<i>Lunch break</i>

Session 2

INTRODUCTION TO RADIATION PROTECTION

14:00	The biological health effects of radiation and the principles of dose limitation <i>Pierre Kockerols, Joint Research Centre</i>
14:45	How can we control the radiation risks? <i>Andrea Ravazzani, Joint Research Centre</i>
15:30	<i>Break</i>
15:45	Practical demos on radiation protection and radiation measurements, with small exercises <i>Vincenzo Lopes, Joint Research Centre</i> <i>Andrea Riganti, ONET, Italy</i>
17:00	<i>Closure 1st day</i>

Tuesday 7 September 2021

Session 3a NUCLEAR DECOMMISSIONING

09:15	Introduction: nuclear decommissioning as a key activity for the future <i>Celso Osimani, former Joint Research Centre</i>
09:30	Plant radiological characterisation <i>Marek Futas, Joint Research Centre</i>
10:15	Break
10:30	Decontamination and dismantling techniques <i>Thibault Delannoy, NUVIA, France</i>
11:30	Radiological mapping of the environment <i>Yvon Desnoyers, Geovariances, France</i>
12:30	Lunch break

Session 3b NUCLEAR DECOMMISSIONING (demos and virtual visit)

14:00	Presentation of the JRC- Ispra nuclear decommissioning programme <i>Paolo Peerani, Joint Research Centre</i>
14:45	"Andy" introduces you to the nuclear activities on the JRC-Ispra site (<i>video</i>)
15:10	The history of the Essor Research Reactor (<i>video</i>)
15:30	A virtual tour brings you inside the Essor nuclear facilities (<i>oculus & 3DIMS</i>) <i>Vladan Stefula, Riccardo Tognin, NUVIA</i>
16:00	Break
16:15	Interactive session on the radiological characterisation of a facility and the related measurements <i>Vladan Stefula, NUVIA</i>
17:00	Closure 2 nd day

Wednesday 8 September 2021

Session 3c NUCLEAR DECOMMISSIONING (continuation)

09:15	Experience feedback of decommissioning projects <i>Eva Hrašnová, JAVYS, Slovak Republic</i>
10:15	Break
10:30	Decommissioning safety and licensing <i>Chantal Mommaert, BelV, Belgium</i>
11:30	Decommissioning cost assessments <i>Simon Carroll, Vattenfall, Sweden</i>
12:30	Lunch break

Session 3d NUCLEAR DECOMMISSIONING (practical cases)

14:00	Introduction to the practical 'case studies' in groups <i>Pierre Kockerols, JRC</i>
14:15	Practical 'case studies' in groups
15:30	Break
15:45	Practical 'case studies' in groups
	Synthesis of the results of the different groups
17:00	Closure 3 rd day

Thursday 9 September 2021

Session 4a

RADIOACTIVE WASTE MANAGEMENT

09:15	Radioactive waste classification <i>Steve Barlow, United Kingdom</i>
09:45	Radioactive Waste and material characterization <i>Roberto Accorsi, Joint Research Centre</i>
10:15	Break
10:30	Clearance of material containing low levels of radionuclides <i>Chantal Mommaert, BeV, Belgium</i>
11:30	Treatment, conditioning and disposal of radioactive waste <i>Steve Barlow, United Kingdom</i>
12:30	Lunch break

Session 4b

RADIOACTIVE WASTE MANAGEMENT (demos and virtual visits)

14:00	Radioactive waste management (<i>video</i>)
14:20	Rehearsal on the principles of waste measurement <i>Pierre Kockerols, Joint Research Centre</i>
14:45	The JRC-Ispra Waste Characterisation System (<i>video</i>)
15:00	A virtual tour shows you the JRC-Ispra Waste Characterisation System <i>Stefano Vaccaro, Joint Research Centre (tbc)</i>
15:30	Break
15:45	A virtual tour brings you in the Interim Storage for radioactive waste (<i>3DIMS</i>) <i>Vladan Stefula, NUVIA</i>
16:15	Interactive session on waste conditioning and packaging <i>Flavio Zanovello, Joint Research Centre</i>
17:00	Closure 4 th day

Friday 10 September 2021

Session 5

SOCIETAL ASPECTS OF DECOMMISSIONING AND WASTE MANAGEMENT

09:15	Why should we progress with nuclear decommissioning ? <i>Pierre Kockerols, Joint Research Centre</i>
09:45	Open discussion with participants on involvement of stakeholders <i>Daniela Santopolo, Joint Research Centre</i>
10:15	<i>Break</i>
10:30	Practical experiences with stakeholder involvement at JRC-Ispra <i>Lorenzo Di Cesare and Arianna Nirni, Joint Research Centre</i>
11:30	European learning initiatives for nuclear decommissioning and environmental remediation <i>Daniela Santopolo, Joint Research Centre</i>
11:50	EU prospects for nuclear decommissioning <i>Gianfranco Brunetti, European Commission, DG Energy</i>
12:30	<i>Lunch break</i>

FINAL TEST FOR CERTIFICATE AND CLOSURE

14:00	Introduction to the voluntary final test for the students <i>Pierre Kockerols, Daniela Santopolo, Joint Research Centre</i>
14:15	tests
15:30	<i>Coffee break</i>
15:45 -	Evaluation of the course
16:45	Jobs in nuclear decommissioning
17:00	<i>Closure of the 2021 school</i>



JRC Mission

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