The European Commission's
science and knowledge service
Joint Research Centre

learning in nuclear decommissioning

the ELINDER project

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JRC, Nuclear Decommissioning Unit

International Workshop
on Application of Advanced Plant Information Systems
for Nuclear Decommissioning and Life-cycle Management

4 December - Halden, Norway

European Commission

JRC in ITALY

pra - Nuclear Decommissioning Unit

historical liabilities are:

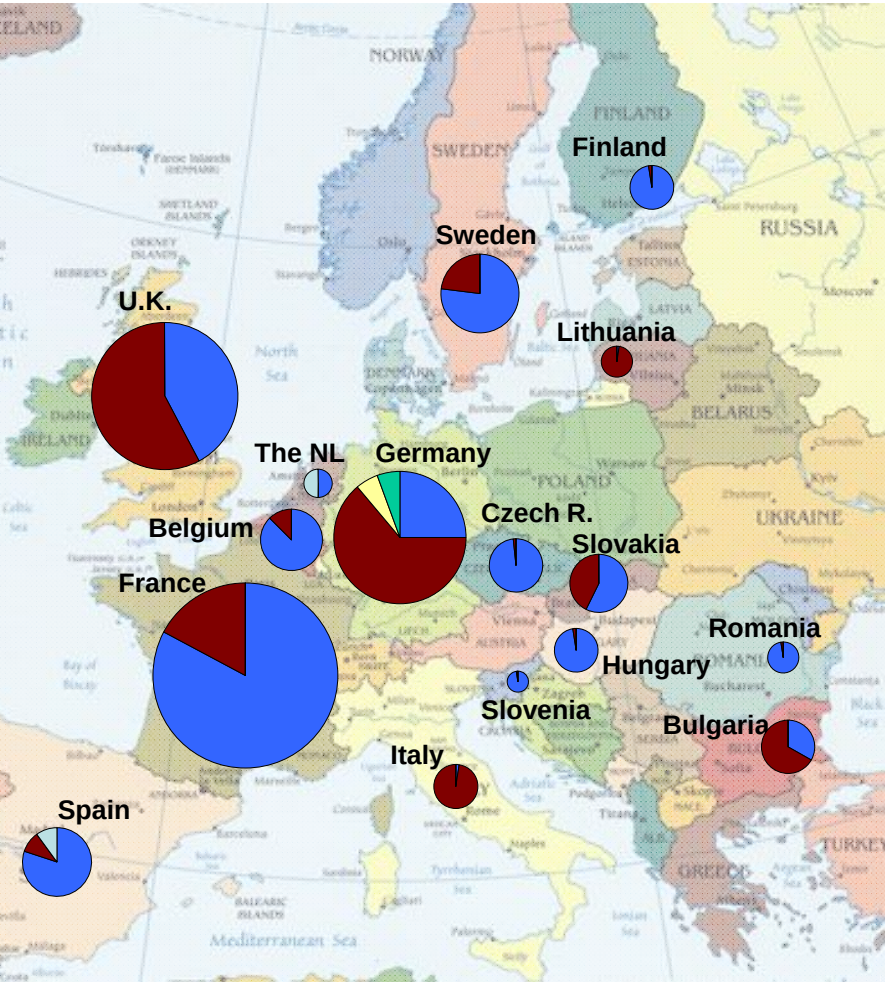
- **Fuel Assemblies melting Release Oven (experimental)**
- **Liquid effluent treatment plant**
- **Solid waste treatment plant**
- **Cyclotron**
- **Hot cell Laboratories**
- **2 reactors, ESSOR and Ispra 1**



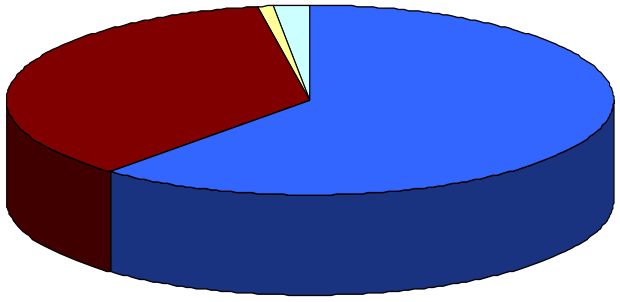




Situation nuclear power reactors in the EU



- Operational
- Shutdown - Dismantling
- Fully Dismantled
- Long Term Safe Enclosure

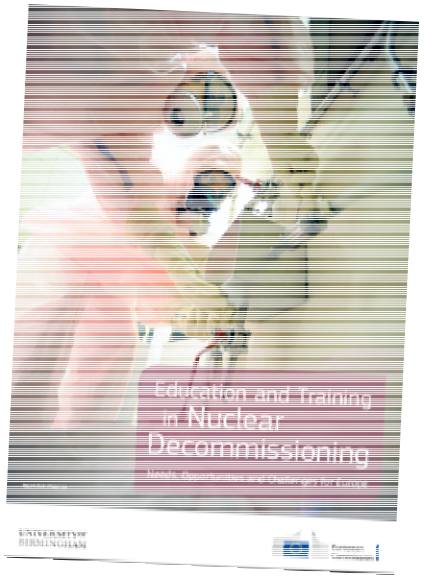


TOTAL
Power reactors in EU: 222
Operating reactors: 128

Offering and promoting dedicated Education and Training (E&T) opportunities

C organised jointly with the University of Birmingham in April 2015 a minar on Education and Training in Nuclear Decommissioning, in an tempt to answer to the questions:

- **What are the E&T needs ?**
- **What are the opportunities, what does already exist ?**
- **How can we attract young talent ?**



- Outcome of the seminar is published in a joint report with orientations on the way forward to support Education and Training in Nuclear Decommissioning in the EU.

w can we stimulate interest and future talent?

The JOB…

Breaking down' is not a very attractive occupation for me, I ould prefer building something new!

Why do I need to take care of the negative 'nuclear eritage' left by the others?

t the end.. there is 'nothing'. What will then happen with my job?

w can we stimulate interest and future talent?

The JOB…

ecommissioning is in reality **much more** than clearing, cleaning and demolishing;
ecommissioning projects usually present an appealing technological challenge,
quiring creative solutions.

ecommissioning is an emerging activity involving on the average young people;
lated jobs offer many possibilities for **career development**.

ecommissioning offers also tremendous opportunities for people who have
veloped expertise in reliable technologies or experience in managing projects
d who are interested in **mobility**.

job in decommissioning is, in general, **secure**; young engineers and scientists
aduating after studies dedicated to decommissioning are almost certain to find a
b.

tually, decommissioning provides a service to society and can be considered as a
oble cause': decommissioning is aiming to restore a safe environment and
monstrates that closing the nuclear energy cycle is feasible.

European Learning Initiatives for
Nuclear Decommissioning and Environmental Remediation

pose of the ELINDER project:

ulate vocational training in nuclear decommissioning in the EU, by:

reating a European 'pool of training initiatives' offering at different locations a eries of courses, visits and practical studies;

rganised in complementing modules, reducing duplication;

armonizing and clarifying the learning outcomes;

ffering an EU 'quality label' or 'endorsement' to those initiatives contributing o qualitative competence building in decommissioning and waste

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proach:

- Training modules of 1-2 weeks, at different locations
- Qualified **'Generic courses'** (G1-G5 General Introduction to Decommissioning)
  and **'Specific courses':**

  S1 Decommissioning Planning and Cost Assessment (STUBA, SK)
  S2 Licensing and Environmental Impact Assessment (SCK.CEN, BE)
  S3 Decommissioning Safety (ENSTTI, FR)
  S4 Decommissioning Programme and Project Management (NUVIA-SOGIN, IT)
  S5 Waste and Material Management (CEA-INSTN, FR)
  S6 Decontamination and Dismantling Techniques (KIT, DE)
  S7 Metrology for Waste Characterisation and Clearance (JRC, IT)
  S8 Environmental Remediation and Site Release (UoB, UK)
  S9 Digitalisation in Decommissioning (IFE, NO)

- Complemented with **'e-Learning course'** (Induction to nuclear)

Example of a realised course

JRC's Decommissioning Summer School

(ELINDER Generic course G5)

JRC-Ispra, 9-13 July 2018

- 39 Master students (with Bachelor degree, still studying)
- Mixture of lectures, practical exercises and visit
- Lecturers from EC, IAEA and from seven EU MS
- Concluded with a test
- Mini 'job fair' (meeting with industry)
- Repeated every year

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nefits from a joint European approach:

Visibility and clarity:

- possibility to **promote** the training by joint advertising to interested employers/trainees,
- enhanced clarity for the employers and interested trainees on the **outcomes and quality** of the anticipated training;

Synergies:

- possibility **sharing** of courses, teachers or facilities to visit
- reducing organisational burden and maximising output using **common** tools and databases, including also IAEA tools, making the training more relevant and up-to-date
- maximising the use of the **expertise** available in each of the training organisations (particularly for the specific modules)

Increased opportunities:

- possibility for trainees to **gradually** develop expertise by combining (over the years) different modules;
- possibility to integrate also **(funded) trainees** from third countries

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Catalogue and info:

https://ec.europa.eu/jrc/en/training-programme/elinder


Thank you for
your attention