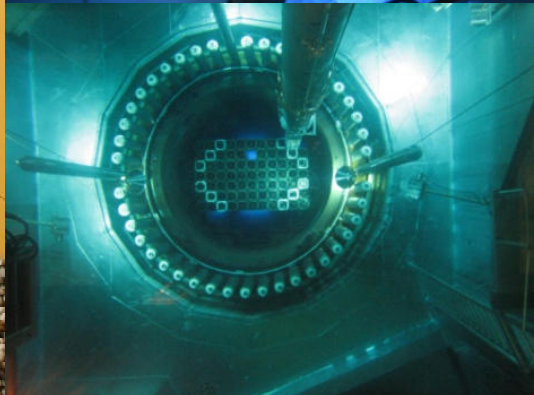




Authority for Nuclear Safety and
Radiation Protection

Implementation of the RPE and the RPO from the EU BSS in The Netherlands

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System of radiation protection expertise in the Netherlands

EU directive BSS	Radiation protection expert - RPE	Radiation protection officer – RPO
Radiation protection decree Bs (NL)	(General) Coordinating Expert	Supervisory Expert
Basic safety standards radiation protection decree Bbs (NL)	Radiation protection expert Stralingsbeschermingsdeskundige	<i>Supervisory officer radiation protection</i> <i>Toezichthoudend medewerker stralingsbescherming</i>



Radiation protection officer (RPO) in BSS

- Article 4 (74) "**radiation protection officer**" means an individual who is **technically competent** in radiation protection matters relevant for a **given type of practice** to **supervise or perform** the implementation of the radiation protection arrangements





Supervisory expert

- Carries out a practise, or alternatively a practise is carried out under supervision of the SE
- Diploma attesting completion of RP training
- Adequate continuing training and retraining
- Registration is not required for SE in Dutch legislation

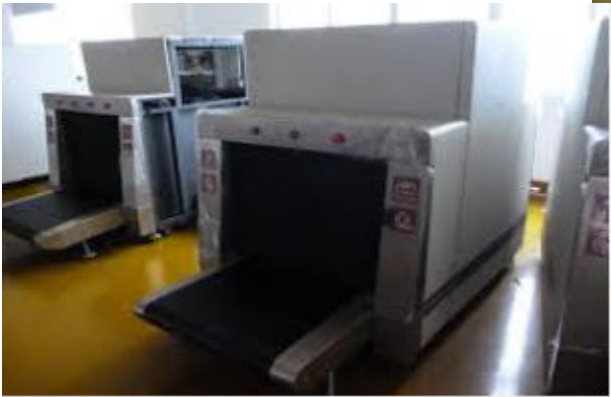
→ Dutch supervisory expert comparable to the radiation protection officer (RPO)

But the Dutch supervising expert is not (yet)

- Practise-specific



Application specific



Gradual approach – low to high risk



Specialisations Dutch RPO

- **Sector Medical**
 - Medical applications - 1
 - Dentistry - 2
 - Veterinary medicine - 3
- **Sector Nuclear**
 - Nuclear fuel cycles - 4
- **Sector Industry and Research**
 - Researchlabs/Open radioactive sources - 5
 - NORM - 6
 - Accelerators - 7
 - Industrial radiography - 8
 - Gauging techniques - 9



Adaptation Dutch educational system RPO

- Educational system radiation protection for RPO
 - Basal part
 - Application-specific part

- Modular or integrated education possible

- Levels education SE: EQF-levels



Model adapted Dutch educational system RPO

Sector	Medical			Nucl	Industry & Research				
Type of specialisation →	MA	De	Vet	NFC	Os	No	Acc	IR	GT
EQF level	5	4/5	4/5	6/7	6	4/6	4	5	4
↓ Topics									
B									
Technical	B5	B5	B5	B7	B6	B6	B4	B5	B4
• Radiation physics and interaction with matter, dosimetry and detection, risks and effects									
Supervisory	B5	B5	B5	B7	B6	B6	B4	B5	B4
• General role and duties RPO, legislation, dose limits, O.P.A, safety assessment, ALARA, environment etc									
S									
Technical	MA	De	Vet	NFC	Os	No	Acc	IR	GT
• Technical knowledge, operation and maintenance, specific risks, shielding, measurement, storage, packing and transport, waste and discharges.									
Supervisory	MA	De	Vet	NFC	Os	No	Acc	IR	GT
• Specific tasks RPO, specific legislation, licences/reports incidents, supervising									



I supervise specific applications with ionizing radiation



Conclusions RPO

- Educational system for Dutch RPO needs to be redefined to become application-specific:
 - New application-specific learning outcomes (2016/2017): 9 specialisations
 - Laid down in national legislation (July 2017)

Issues to be solved

- Exchange with other European countries still possible
- Common understanding learning outcomes RPO (ENETRAP/HERCA)
- Is registration RPO required?
- For which practises the designation of a RPO is necessary?



Radiation protection expert (RPE) in BSS

- Article 4 (73) "**radiation protection expert**" means an individual or, if provided for in the national legislation, a group of individuals having the knowledge, training and experience needed to give radiation protection **advice** in order to ensure the effective protection of individuals, and whose **competence** in this respect is **recognised** by the competent authority;

I am a
recognized
expert giving
radiation
protection
advice





Coordinating expert

- Ensures that practises with ionising radiation are performed within the legal framework (also for medical practises)
- Radiation protection training (learning outcomes)
- Registered in a special register
 - Comply with registration requirements (Regulation Implementing Radiation Protection Decree EZ)
- Knowledge level EQF6

→ Comparable with the radiation protection expert (RPE)



General coordinating expert

- Ensures that practises with ionising radiation are performed within the legal framework (also for medical practises)
 - **Grants internal permission for practises (complex license)**
 - Radiation protection training (fulfills learning outcomes laid down in legislation)
 - Registered in a special register
 - Knowledge level EQF7
- Comparable to the radiation protection expert (RPE)



Conclusions RPE

I am a
recognized
expert
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- Implementation of the RPE in the Dutch radiation protection system well advanced
 - Learning outcomes (ENETRAP based)
 - Registration requirements
- } laid down in legislation

Issues to be solved

- Not application-specific (broad)
- Tasks RPO performed by RPE: application and supervisory-specific knowledge (retraining)



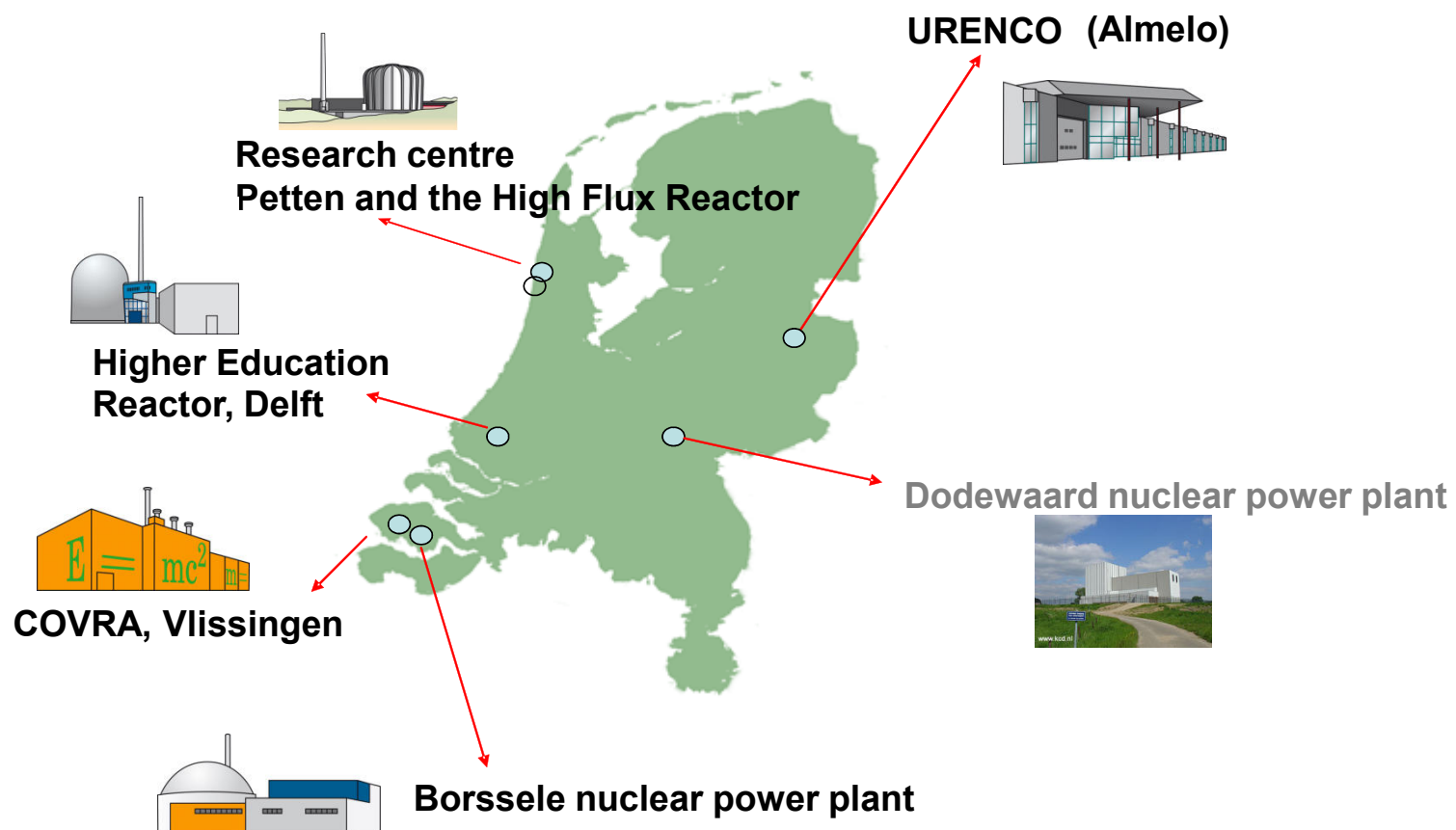
Questions?







Nuclear environment





Radiation environment

Radiation

- 1,000 licensees (100 extra security)
- 10,000 individuals subject to a reporting requirement (dentists, veterinarians, those not subject to a licence requirement)
- 30 complex licences
- 10,000 transports per year

