Authority for Nuclear Safety and Radiation Protection

# Follow up of the implementation of the RPE and the RPO from the EU-BSS Directive in The Netherlands

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# Authority for Nuclear Safety and Radiation Protection (ANVS): regulatory tasks

- Nuclear safety
- Radiation protection (public & environment)
- Emergency preparedness and response
- Transport
- Security
- Safeguards
- Spent fuel, radioactive waste and decommissioning
- Financial warranty decommissioning

ANVS

Ministry of Infrastructure and Water Management

Advisory Board ANVS

Preparation of policy, law and regulations

Public information

International cooperation Research& Development

Technical rules

Licensing, exemption

Inspection, supervision and enforcement

Advisory

Independent

# System of radiation protection expertise in the Netherlands

| | | |
|---|---|---|
| Former Radiation protection decree **Bs (NL)** | (General) Coordinating Expert | Supervisory Expert |
| EU directive BSS (2013/59) | Radiation protection expert - RPE | Radiation protection officer – RPO |
| Basic safety standards radiation protection decree **Bbs (NL)** | **Radiation protection expert**<br><br>'Stralingsbeschermingsdeskundige' | ***Supervisory* officer radiation protection**<br><br>'*Toezichthoudend* medewerker stralingsbescherming' |

# 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

# Given type of practise: application specific


**Gradual approach – low to high risk**

# From supervisory expert to RPO

Educational system for Dutch RPO redefined to become application-specific:

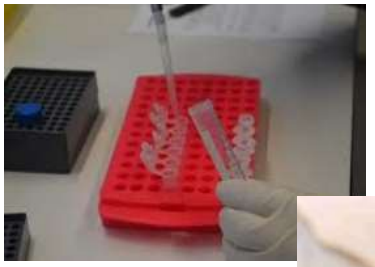
- New application-specific learning outcomes: 9 specialisations
- Laid down in national legislation (Regulation basic safety standards RP, Rbs)

# Adapted Dutch educational system RPO

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

# Specialisations Dutch RPO


- **Sector Medical**
  - Medical applications - 1
  - Dentistry - 2
  - Veterinary applications - 3
- **Sector Nuclear**
  - Nuclear fuel cycles - 4
- **Sector Industry and Research**
  - Dispersible radioactive materials - 5
  - NORM - 6
  - Accelerators - 7
  - Industrial radiography (NDT) - 8
  - Gauging techniques - 9



# From supervisory expert to RPO

- Educational system for Dutch RPO redefined to become application-specific:
  - New application-specific learning outcomes: 9 specialisations
  - Laid down in national legislation (Regulation basic safety standards RP, Rbs)

## Issues to be solved

- Exchange with other European countries
- Common understanding learning outcomes RPO (ENETRAP/HERCA)
- Registration RPO. Harmonisation issue
- Designation of a RPO: for which practises? Harmonisation issue


HERCA
HEADS OF THE EUROPEAN RADIOLOGICAL PROTECTION COMPETENT AUTHORITIES

# 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;

- Article 68: It is the **task** of the **undertaking** to **seek advice** from a radiation protection expert: RP, accepting into service- and maintenance equipment

- Art 15: **Education and training** in relation to the **type of practice**

# From (General) Coordinating Expert to Radiation Protection Expert (RPE)


- Implementation of the RPE in the Dutch radiation protection system
  → Learning outcomes (ENETRAP based)
  → Registration requirements } laid down in legislation

**Issues to be solved**

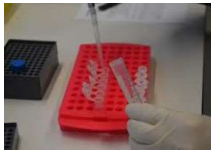
- Not application-specific (broad): ongoing modification educational system RPE

- Tasks RPO performed by RPE:
  - application
  - supervisory-specific knowledge (retraining)

# Training institutes


- Training institutes are **accredited** by the authority (requirements laid down in Rbs): applies for a 5 year period
  - General RPE courses are available ("all applications")
  - RPO courses for all nine applications are available





# Additional training modules

- Nuclear power plant security personnel
  - Learning outcomes (New Ordinance Security nuclear installations fissionable materials - summer 2019)

- Scrap metal
  - Learning outcomes (Regulation Detection radioactive scrap metal)

Vaardigheden en bekwaamheden

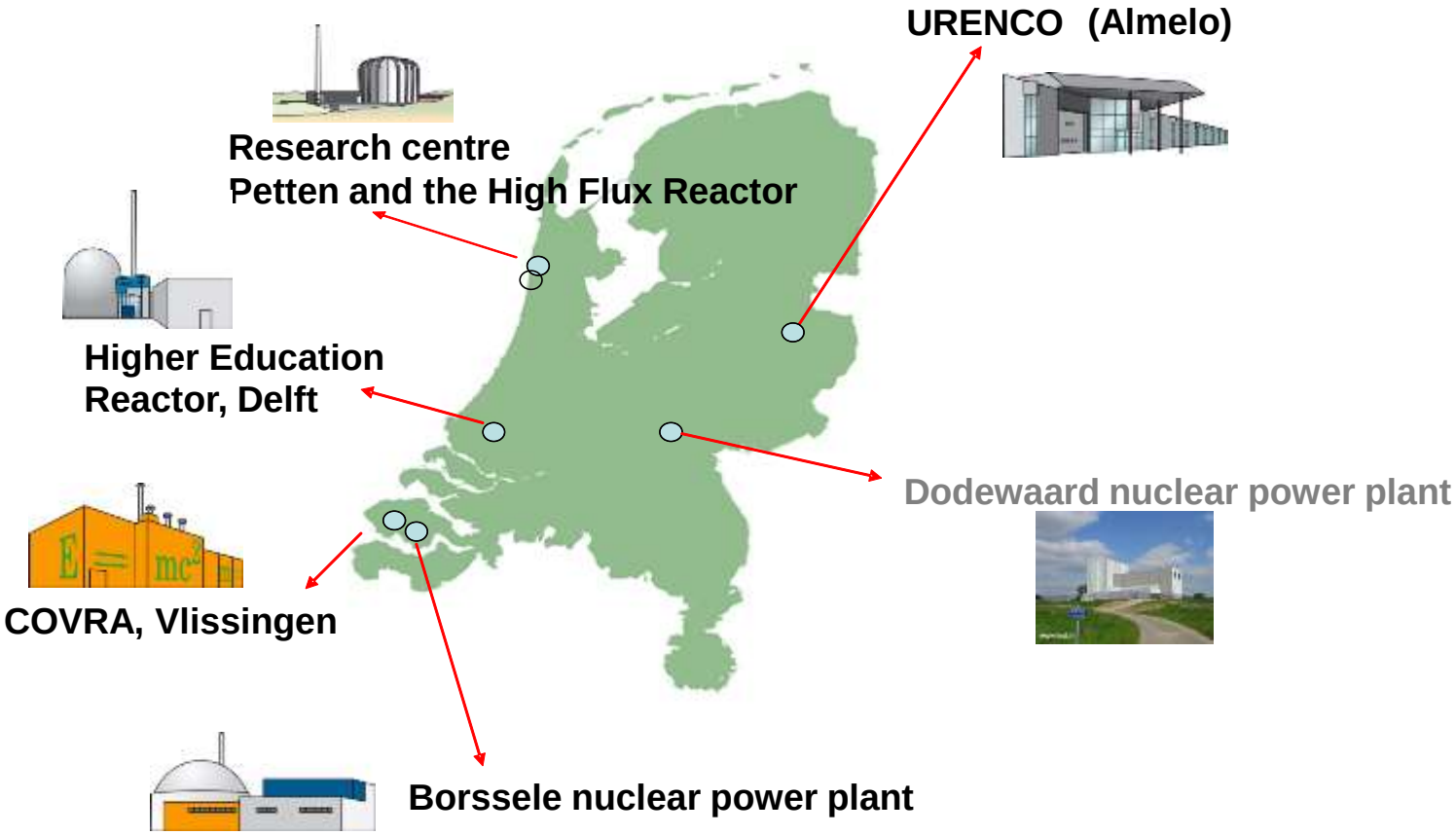
# Scrap metal decree

Een aangewezen persoon als bedoeld in artikel 6, eerste lid, van het besluit beschikt over de volgende vaardigheden en bekwaamheden:

1. Aantoonbare kennis van de volgende onderwerpen:
   - **a.** het begrip ioniserende straling;
   - **b.** soorten van ioniserende straling;
   - **c.** grootheden en eenheden met betrekking tot ioniserende straling;
   - **d.** stralingsbescherming en besmettingsrisico's;
   - **e.** biologische gevolgen van ioniserende straling;
   - **f.** soorten apparatuur voor het meten van ioniserende straling;
   - **g.** uiterlijke kenmerken van objecten met mogelijke stralingsrisico's;
   - **h.** de Inspectierichtlijn metaal en schroot met radioactieve stoffen d.d. 25 februari 2003.
2. Praktische ervaring met:
   - **a.** de afstandkwadratenwet;
   - **b.** de bepaling van de soort ioniserende straling;
   - **c.** de bepaling van de halveringsdikte;
   - **d.** het opsporen en detecteren van een gammastralingsbron, onder andere in een opslag- of transportcontainer.

# 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