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

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

<table>
<thead>
<tr>
<th>Sector</th>
<th>Medical</th>
<th>Nucl</th>
<th>Industry &amp; Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of specialisation</strong></td>
<td>MA 5</td>
<td>De 4/5</td>
<td>Vet 4/5</td>
</tr>
<tr>
<td><strong>EQF level</strong></td>
<td>NFC 6/7</td>
<td>Os 6</td>
<td>No 4/6</td>
</tr>
<tr>
<td><strong>Topics</strong></td>
<td>Os 4</td>
<td>Acc 4</td>
<td>IR 5</td>
</tr>
<tr>
<td>Technical</td>
<td>B5 B5 B5 B7</td>
<td>B6 B6 B4 B5</td>
<td></td>
</tr>
<tr>
<td>Supervisory</td>
<td>B5 B5 B5 B7</td>
<td>B6 B6 B4 B5 B4</td>
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<td>Os No Acc IR GT</td>
<td></td>
</tr>
</tbody>
</table>

**B**
- Radiation physics and interaction with matter, dosimetry and detection, risks and effects

**S**
- Technical knowledge, operation and maintenance, specific risks, shielding, measurement, storage, packing and transport, waste and discharges.
- Specific tasks RPO, specific legislation, licences/reports incidents, supervising
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 practices 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;
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

→ Implementation of the RPE in the Dutch radiation protection system well advanced
  → Learning outcomes (ENETRAP based)
  → Registration requirements

Issues to be solved

➢ Not application-specific (broad)
➢ Tasks RPO performed by RPE: application and supervisory-specific knowledge (retraining)
Questions?
Nuclear environment

- Research centre Petten and the High Flux Reactor
- Higher Education Reactor, Delft
- COVRA, Vlissingen
- Borssele nuclear power plant
- URENCO (Almelo)
- Dodewaard nuclear power plant
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