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Harmonisation of the Recognition of RP Professionals for Nuclear Facilities Status and further development

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Overview

- RP professionals in **Swiss nuclear facilities**
- RP professionals in **German nuclear facilities**
- **Harmonisation Switzerland ⇔ Germany**
 - What happened in the last years?
 - Outlook
- **Harmonisation aboard Germany and Switzerland**



Nuclear Facilities in Switzerland

4 Nuclear Power Plants with 5 Units

Interim Storage for radioactive waste including waste management facilities e.g. plasma incinerator

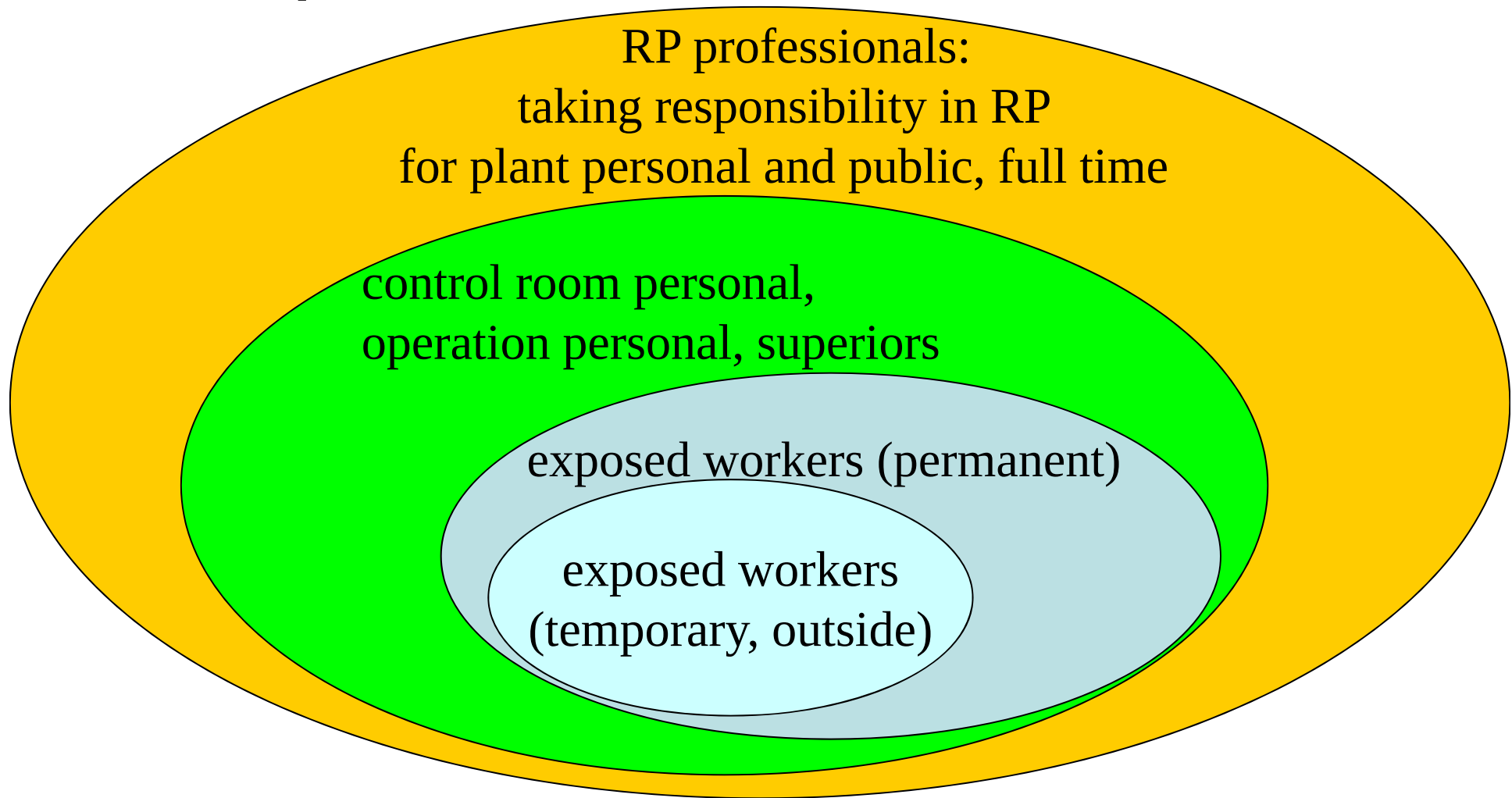
Paul-Scherrer-Institute including
1 research reactor in operation,
2 research reactors in decommission,
laboratories with hot cells,
waste management facilities,
several interim storages,
proton and electron accelerators,
spallation neutron sources etc.



2 training reactors



Definition and RP knowledge: Exposed Workers – RP Professionals





RP Professionals in a Swiss NPP

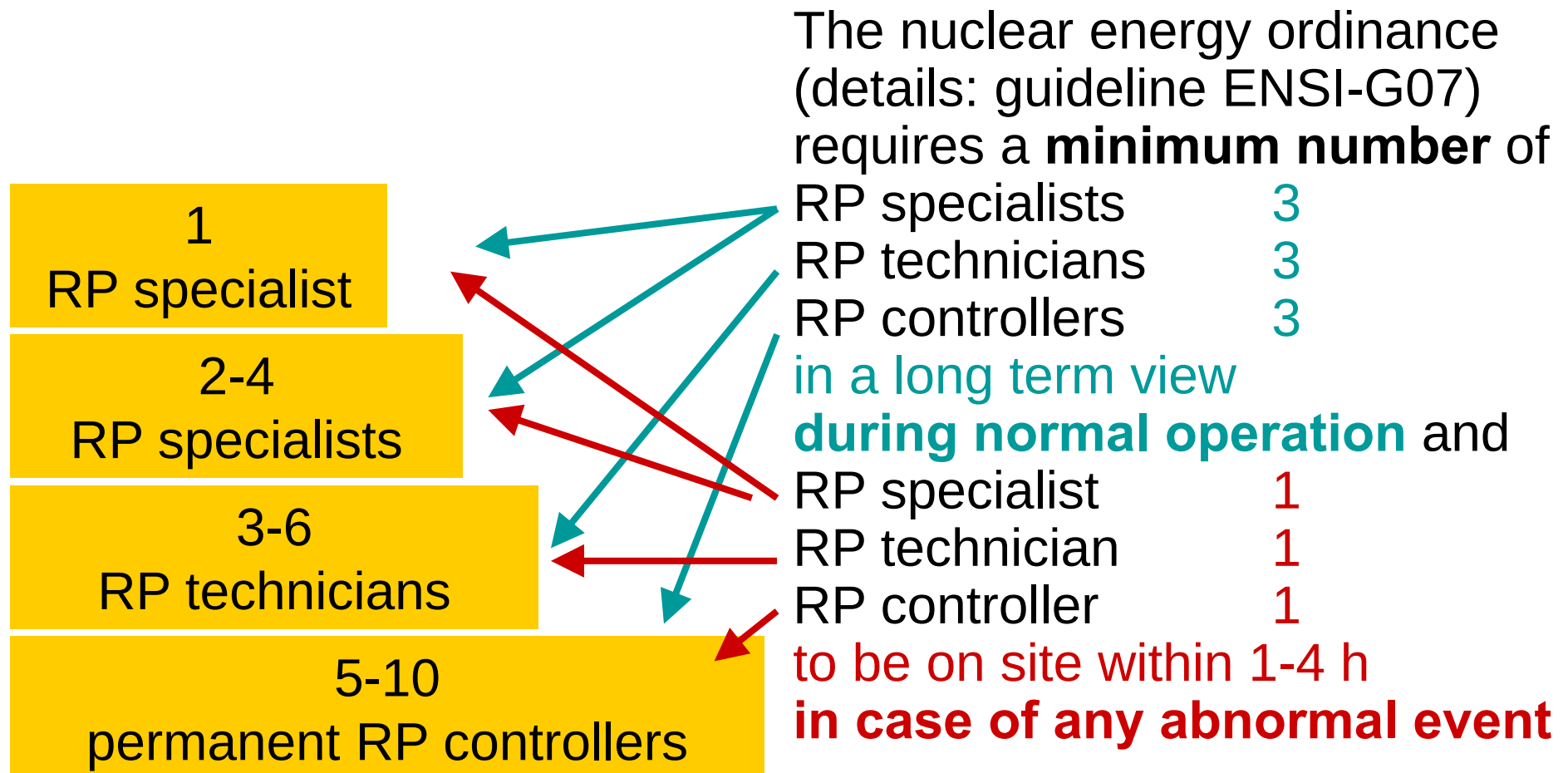
personnel expenditure and functions

License holder	holding the primary responsibility about RP
NPP-director	has to employ several RP specialists
dedicated RP Manager	and to dedicate one RP specialist • has to implement RP regulations into company rules (RP or ALARA program)
2-4 RP specialists	• has to run the RP organization in the company • have to substitute the RP-Manager especially in emergency situations • has to install an education and training program • has to authorise RP work plans
3-6 RP technicians	• To be involved in routine work • To classify areas and workers protection arrangements, examples: • To establish adequate monitoring methods, radiation monitoring, preparing protection measures, helping exposed workers entering and leaving contaminated areas, clearing material coming out of controlled areas
5-10 permanent RP controllers	
10-80 temporary RP controllers and RP assistants	



RP Professionals in a Swiss NPP

requirements on minimum numbers





RP Professionals in a Swiss NPP requirements on minimum numbers

The RP planning of an **outage or job (>50 pers-mSv)** has to include the number of

RP technicians

RP controllers

RP assistants

necessary to ensure the RP

The planning has to be reported to the inspectorate at least 2 weeks before the outage/job starts (Guideline ENSI G15)

3-6

RP technicians

5-10

permanent RP controllers

10-80

temporary RP controllers and RP assistants



Recognised RP Professionals **staff in all swiss nuclear facilities**

around **120 permanent employees**,
with recognised qualification in radiation protection
around **15 % with a foreign education and training**

+ up to **300 temporary (outside) RP professionals / year**
around **85 % from Germany**,
around **5% other countries as Austria, Netherlands, Sweden,..**





Recognition of RP Professionals with foreign education and training

permanent employees:

The **recognition** of foreign education and training is possible, if

- the foreign course full fills the requirements in the RP-Education-Ordinance adequately (the ENSI has to check if the syllabus and the duration are roughly identical)
- knowledge about the Swiss RP-regulations exist (one day course)
- at least 3 month experience in the particular facility is given
- and on the job training in two different swiss nuclear facilities has been performed (4 weeks)

temporary personal:

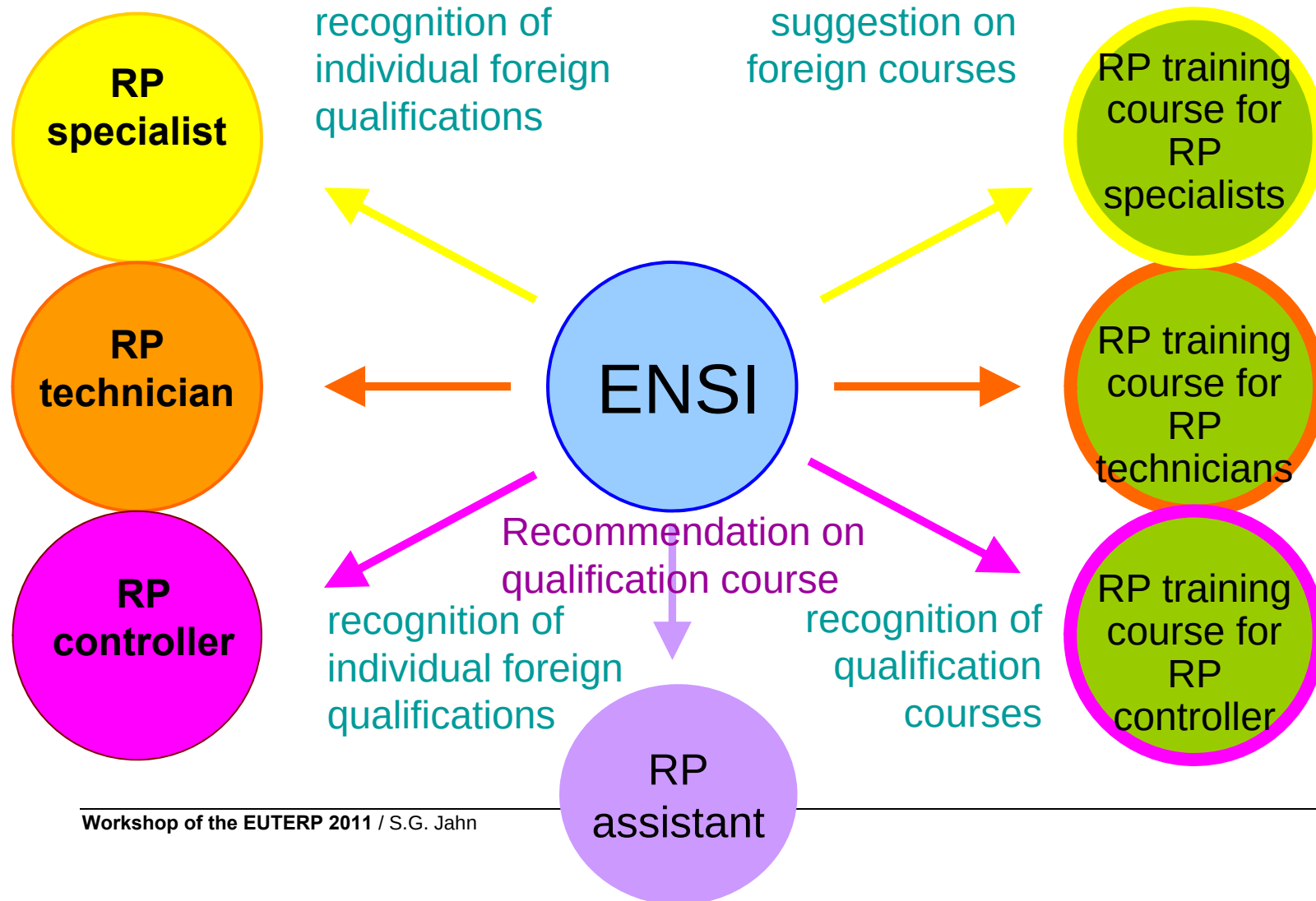
the delegation of certain RP-jobs is **allowed**, if

- the licensee of swiss nuclear facility keeps the foreign certification of adequate qualification (accepted by the inspectorate, e.g. StS-Fachkraft IHK)
- an introduction into the particular RP-jobs in the facility have been given (1 week)
- on the job experience under surveillance of several weeks in a swiss nuclear facility can be shown



Swiss approach of recognition

in the case of nuclear facilities





Requirements for the Recognition of RP Courses or individual RP Qualifications

- the necessary **prequalification** of the course participants,
- the **detailed syllabus**,
- the recommended **amount of lessons and exercises**,
- the recommended duration of **practical exercises and OJT** supervised by RP specialists
- the **competence of the instructors**,
- the **equipment of the training facility** and
- the **conditions of the examination** including the necessary data on the certificate.

The persons, who passed the exam successfully,

- are **recognized** if they fulfill minimum prof. experience duration
- are **registered** by the regulatory body in a database
- get the **approval** to perform special RP activities



RP-Professionals in German NPP

- **Authorized RP specialist** (recognised by German authority country A):
 - high school finish in engineering or natural science
 - completed a RP-course recognised by German authority country B,
 - confirmation about experience in nuclear facilities
- Authorized RP specialist restricted to certain jobs: dito
- **RP controller (*Fachkraft*)**, official recognition only on the level of radiation worker, no special recognition necessary, but certified according to a recommendation by **VGB**:
 - IHK-examen (test is recognised by other German authority)
 - confirmation from RP-manager in a VGB-facility about work experience as a RP-worker (3 years)
- **RP assistant (*Werker*)** official recognition only on the level of radiation worker, no special recognition necessary, but certified according to a recommendation by **VGB**:
 - IHK-course (3 weeks), 6 weeks on the job training and 6 month experience in RP (confirmation from RP-manager)

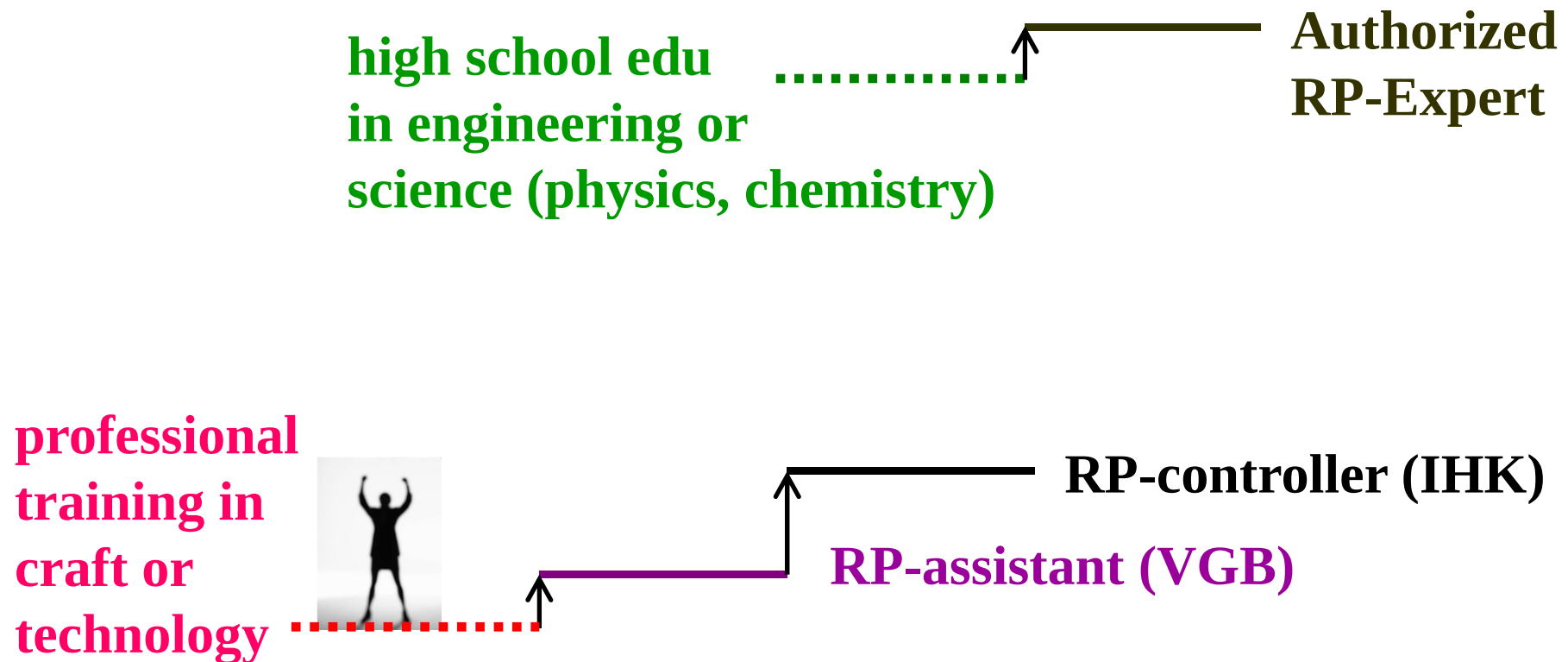
VGB: association of german and swiss NPP, with connections to

IHK: different Chambers of Industry and Commerce



RP professionals in German NPP

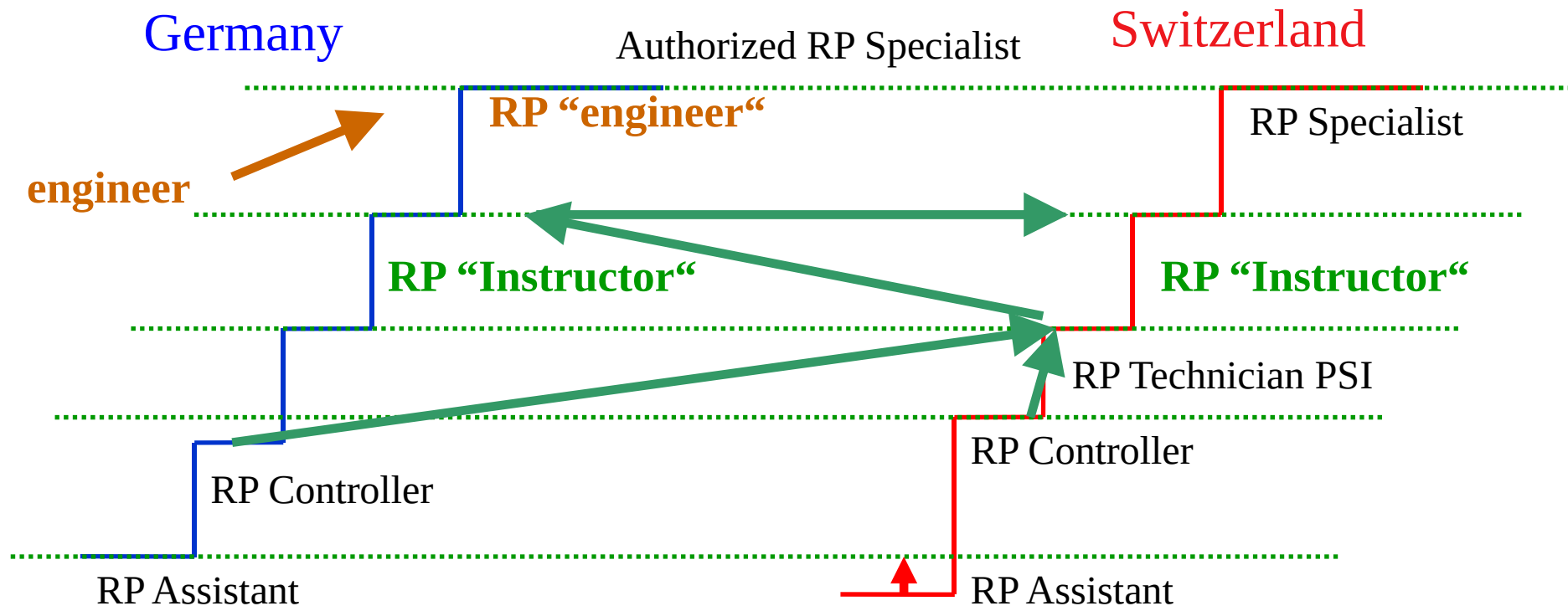
Situation up to 2010





Harmonization: up to now done by VGB and ENSI

1. new training scheme for **Strahlenschutz-Meister** (RP “Instructor”) starting as RP Controller (set up by several moduls)
2. New recommendations of the VGB concerning RP-engineer starting from any engineer degree
3. adjustment of Swiss RP-Education and Training requirements done in Guideline ENSI-B13





Strahlenschutzmeister (IHK)

course official existing since 2010

recognised by IHK Essen (examen)

approved by

Ministerium of Economy and Energy, Nordrhein-Westfalen

Condition and requirements

- **Finished training as a RP controller (Strahlenschutzfachkraft IHK / PSI) and two years of work experience**
alternative: 10 years work experience in RP
- **Personal capability:**
 - math
 - German spelling, grammar,
ability to understand and write technical reports
 - staying power



Strahlenschutzmeister (IHK)

Modul 1: A cross professional basic qualification

- responsibility (jurisdiction)
 - business administration
 - methods of information, communication und planning
 - team work
-
- **7 – 8 weeks** or in the evening (6 month)



Strahlenschutzmeister (IHK)

Modul 2: RP-specific basic qualification Part 1 **(Core competence)**

identical to

RP Technician course at Paul Scherrer Institut (PSI, CH)

- Theoretical lessons and exercises
(8 weeks -> written and spoken tests)
- Project work: establishing a RP-plan for a complex job
(2 weeks)
- Presentation of project work as an examination

► **Certification as**
„Strahlenschutztechniker (PSI-CH)“



Strahlenschutzmeister (IHK)

RP-specific qualification (specific competence)

Part 2

course at KWS (Modul 3)

German RP legislation
several further RP knowledge
organisation and management (persons, time resources, ...)
Around 6 - 7 weeks

course at KWS (Modul 4)

- preparation for the test
- repetition

2 weeks



Strahlenschutzmeister (IHK)

Examination of RP specific qualification in
combination with different skills

at **IHK-Ruhr** in Essen

- certified as „**Kraftwerksmeister/In Strahlenschutz**“
- missing: **recognition by German authority as a SSB**
(restricted to certain area of responsibility)
- **automatically recognised as a profession in Switzerland**
(Bundesamt für Bildung und Technologie),
- **but not foreseen in the Swiss RP ordinance**



Next Steps:

- Finishing a report about the comparison of several RP levels (VGB & ENSI)
- Trying to fit to the ECVET system
- Collecting further information about RP professional in nuclear industry (in progress with UK, Sweden, Spain)
 - With the help of **EUTERP**
 - By asking the stakeholders (RP managers) via **ISOE**
- Doing advertisement for the Strahlenschutzmeister
- Connection to the German authorities
- revision of swiss RP ordinances with the possibility to adapt to EU BSS



Thank you for your
Attention !



RP-Professionals in NPP in UK

(Information from G. Renn RP-Manager at NPP Sizewell)

- RP Engineers; usually university educated, often given specific authorised appointments as either "Qualified Expert" (known as Radiation Protection Adviser in UK) and/or as an Accredited Health Physicist (NPP specific authorisation after training and an interview).
- As well as RP training such engineers will also complete a lot of generic training common to all engineering functions on the power plant. I attach a copy of the RP Engineering Training programme description.
- To support the training we now have a lot of "mentor guides" which are used by an experienced "mentor" to guide a new candidate through many of the detailed process. I attach an example of a mentor guide which covers "designation of radiological areas"
-
- RP technicians; high school educated. They follow a similar process with some training courses supported by mentor guides and on-job training modules to assess competence. I attach a copy of the RP technician training programme overview. Note that "Environmental Safety Assistant" is a UK Power Plant name for RP Technician.
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- In both cases we try to undertake at least one day a month of continuing training on topics that have been identified by the RP Training Committee which I chair.
- I attach an example of continuing training material (for RP technician).
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- Our training programmes for RP are currently undergoing major enhancement as we are trying to establish INPO-style accredited training systems.
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- Health Physics Monitor



Consideration about Future of EUTERP

- Mutual recognition of RPO would be very welcome, but is not possible in a simple way (one single certification for all nations, application sectors, levels)
- EUTERP should help to install a system of standard modules on qualification (core competence, ..., OJT) to help to simplify the national recognition considering/depending
 - the particular application sectors
 - RP-Qualification levels, depending on risk and responsibility
- Linking all bi- and multilateral harmonisation initiatives or agreements
 - by gathering the information (and publishing on the net)
 - identification of their goals
 - identification of compatible, overlapping or obstructing goals



Initiative of the Fachverband für Strahlenschutz (swiss-german association for RP)

- supporting of school laboratories
 - contest of pupil groups on RP-projects
(incl. foundation of prizes for the best groups)
 - seminars and support for teachers with information
 - invitation of school classes for some days training
and practical exercises in well equipped laboratories
- ⇒ To develop knowledge about radiation, radiation protection and RP-Professions on a broader population



Thank you for your attention !