Radiation Protection and Nuclear Safety Regulatory Inspection: A Happy Marriage?
Outline

- Introduction
- Legal aspects
- Problems
- Solution: Inspection by sampling & REX
- How to treat an observation?
- Conclusion
Introduction: who are we and what do we do?

- **BEL** = Subsidiary of the FANC (Belgian Federal Agency for Nuclear Control)

- Mission: to carry out the surveillance of the Belgian nuclear installations within the frame of the Belgian *laws* and *regulations*
Legal Aspects

- Royal Decree July 20\textsuperscript{th}, 2001: RD on the general regulation of the protection of the population, the workers and the environment against the danger of ionising radiations "RGPRI"
  - Authorizations
  - Import, export, transport
  - Medical applications
  - General protection
    - Dose limits, supervision and inspection, protective means, waste, access restrictions, …
    - …
Legal Aspects

- **RGPRI**: 🥵

**Supervision**

- **responsible**
- comply with the RGPRI
- Nuclear safety

- **FANC**
- **Bel V**
- **HPD**
Problem

- RGPRI: „Permanent supervision“
Problem

- Permanent supervision
Problem

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- Permanent supervision?
Problem

- Ressources!
  - $\left( \text{\includegraphics[width=0.5\textwidth]{resources.png}} \right)^n \times \text{ALARA?}$
Solution

- Basic goal of Bel V = „to carry out the surveillance of the Belgian nuclear installations within the frame of the Belgian laws and regulations”, i.e. is the licensee doing a good job in order to protect population, workers and environment against the dangers of ionizing radiation?

- Hence, solution: *inspection by sampling + REX*
Inspection by sampling

- Sampling subjects: Everything! with a potential impact on Nuclear safety or radiation protection. (RGPRI 23.11: access to all documents).

- Applying ALARA!
Inspection by sampling

- Cfr daily academic exams (each individual exam does not cover every topic, but eventually every aspect will be)

- Advantage: Bel V is not the reviewer! The licensee has to perform internal independent review. No Bel V „safety net“
GALLIA est omnis divisa in partes tres, quarum
unam incolunt Belgae, aliam Aquitani, tertiam qui
ipsorum lingua Celtae, nostra Galli appellantur. Hi omnes
lingua, institutis, legibus inter se differunt. Gallos ab
Aquitanae flumen, a Belgis Matrona et Sequana dividit. Horum
omnia fortissimi sunt Belgae, propterea quod a
cultu atque humanitate provinciae longissime
absunt, minimeque ad eos mercatores saepe
commeant atque ea quae ad effeminandos
animos pertinent important, proximique sunt
Germaniae, qui trans Rhenum incolunt, quibuscum
continent bello gerunt. Qua de causa Helvetii
reliquos Gallos virtute praecedunt, quod fere
How to treat an observation?

- No significance: Forget it!
- Keep in mind (recurrence check, HPD check)
- Simply mention
- Mention and investigate

Significance

recurrence

importance
How to treat an observation?
Overall philosophy

1982 ALARA:

2008 ALARA:
Towards excellence
Conclusion

- Contradiction (RP) inspections vs. Royal Decree RGPTI?

- Efficient solution with little manpower:
  - Sampling + REX
  - Examples given
  - Overall philosophy

- Happy marriage between inspections and RGPRI!