Seleted issues related to graded approach in regulatory pratice in the Czech Republic

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General Principle

- Atomic Act (263/2016 Coll.), Regulation on Radiation protection and security of sources (422/2016 Coll.)

„Anyone who uses nuclear energy or performs activities in exposure situations when ensuring nuclear safety, radiation protection, technical safety, radiation situation monitoring, radiation extraordinary event management and security shall utilize a graded approach, depending on the magnitude of potential exposure and its possible consequences (hereinafter "graded approach"), shall be applied. The graded approach shall be commensurate to

a) the type of the nuclear installation or category of the workplace with sources of ionising radiation,

b) the type of nuclear material and radioactive waste present in the nuclear installation and

c) the activities carried out"

- Categorization of radiation workers (A/B)
- Categorization of workplaces (I. – IV.)
- Categorization of sources (minor, simple, significant, very significant + HAAS and IAEA cat. D-value)

Implementation in Legislation

- Exemption:
  - listed criteria (exemp.levels)
  - special type of regulator´s decision (general criterion of tens of mikroSv)
- Notification:
  - use of minor sources with type approval (not for medical or non-medical exposure!)
  - some existing exp.sit. (natural sources)
- Registration:
  - for dental, bone densitometry and veterinary practices (not for CT)
  - and import/export of generators
- Authorization: the most significant practices

Example: replacement of blood irradiator

Device containig Cs-137

- Significant source, Cat. 1 source (IAEA), HASS
- Authorization
- Security issues

X-ray Device

- Minor source (CE; measurement)
- Notification

Implementation in Regulatory Practice

- Internal order for inspection frequency
- Each year:
  - workplaces cat. III.
    (radiotherapy, industrial irradiators, recognized storage for radionuclide sources),
  - HASS (not contained in device),
  - industrial radiography using radionuclide sources (in field)
- Once per 2-4 years: cat. II. workplaces (diagnostic radiology, nuclear medicine)
- Once per 3-5 years cat. I. (other industrial or research applications)
- No regular period – dental and veterinary applications (except CT)

- No findings = inspection can be postpone for one year
- Significant findings = next inspection must be provided following year

Implementation in Regulatory Practice

- 800 inspection per year (50 inspectors)
- Organizational change (last year):

„from regional allocation of inspectors to allocation according significance of workplace/activity“

- use senior experienced stuff for most significant or „problematic“ activities
- train new stuff on routine inspections
- hire qualified personnel anywhere in the territory of the country (8 workplaces in different towns within the country)

Balance

- Upcoming amendment of Atomic Act and regulations:

  do not compromise safety

  X

  do not put unjustified burden and attention where it is not needed

  - Radiological events (rules for notification)
  - Emergency preparedness (robustness based on analysis)
  - Clinical audits (needed for every type of activity?)
  - NORM workplaces (measurement frequency)

Regulator´s Reality

Idea:

- Focus on most significant activities
- Put an effort on the things that matters
- Reasonably allocate sources

Reality:

- Dealing with non-significant things presenting negligible risk, low activity (natural) sources
- Activities/situations not clearly fitting into regulatory framework (grey zone), not widespread/untypical activities