Státní úřad pro jadernou bezpečnost

The Selected Issues Related to the Development of National Legislation based on ICRP103, IAEA BSS and EU BSS

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Czech Republic
GERMANY
POLAND
AUSTRIA
SLOVAKIA
Elbe R.
Oder R.
Danube R.
Vltava R.
Morava R.
Liberec
Ústí nad Labem
Litoměřice
Trutnov
Teplice
Mladá Boleslav
Karlovy Vary
Mělník
Louny
Hradec Králové
Sokolov
Cheb
Rakovník
Prague
Pardubice
Krnov
50° N
Beroun
Kutná Hora
Šumperk
Opava
Orlová
Karviná
Ostrava
Havířov
Třinec
Frýdek-Místek
Plzeň
BOHEMIA
Benešov
Havlíčkův Brod
Žďár nad Sázavou
MORAVIA
Olomouc
Prostějov
Přerov
Klatovy
Tábor
Jihlava
Zlín
Písek
Strakonice
Kroměříž
Otrokovice
ETE
Třebíč
Brno
České Budějovice
Jindřichův Hradec
EDU
Uherské Hradiště
Hodonín
Znojmo
Břeclav
Český Krumlov
N
0
40 Miles
0
40 Kilometers
14° E
16° E
18° E

Czech Republic

Population: 10,5 million

Artificial sources:

~ 5000 sealed sources, 200 workplaces with unsealed sources

11 764 generators

2 NPPs (3700 workers with average E=0,2 mSv)

2 RRs and 1 training reactor

~ 23 000 workers occupationally exposed to radiation are monitored
average E= 0,76 mSv

Natural sources:

•uranium mines (1400 workers with E=7,45 mSv)

•pilots and aircrew (1900 with 1,6 mSv)

•excavation work, waterworks, work in radon spa, ..

Dosimetry services: 6 external radiation
5 internal radiation
6 NORM

Radon measurement 120

SÚJB

- **Before 1993:** Czechoslovak Atomic Energy Commission with Nuclear Safety Department
- **January 1993:** Regulatory and promotional roles divided between
  - SUJB (established) and
  - Ministry of Industry
- **May 1995**: National Radiation Protection Institute established from research institute of Ministry of Health
- **July 1995:** Radiation Protection Service moved from Ministry of Health to SÚJB
- **July 1996:** Emergency Response Center established

SÚJB

- SÚJB basic legal powers and responsibilities:
  - the Constitutional Law
  - Act on Distribution of Competencies within the Governmental structure
  - Since 1995 nuclear safety and radiation protection together
  - **Atomic Act (nuclear safety and radiation protection)** and acts on Biological & Chemical Weapons
- SÚJB has its **own budget** approved by the Parliament in frame of the state budget
- SÚJB **can propose acts** and decrees within its competence
- SUJB President directly under prime minister

New Legislation

- Complex reformation of the nuclear law started in 2010 - Synopsis of a new act
  - was prepared in 2010
  - sent to ministries and other central administrative bodies to be reviewed in the 2nd quarter of 2011
  - comments of the ministries implemented and used for new atomic act preparation
- Main goals:
  - Adapt the nuclear law to
    - New IAEA recommendations (IAEA BSS)
    - New WENRA reference levels
    - ICRP 103, new EU legislation(dir 59/2013 – EU BSS)
    - Lessons learnt from **Fukushima and Stress tests**
    - Lessons learnt from IRRS mission (2013)
    - Recent requirements of national legislation
  - **Modernize** the nuclear law from legislative perspective

New Legislation

- Acquis (e.g.)
  - Council Directive 2009/71/Euratom - NSD
  - Council Directive 2013/59/Euratom - BSS
  - Council Directive 2011/70/Euratom – RAW and SNF
  - Council Regulation (Euratom) No 1493/93 – Transport (shipments)
  - Commission Regulation (Euratom) No 302/2005 – Safeguards
  - Council Regulation (EC) No 428/2009 – Dual use items
  - Regulations related to radioactive contamination of foodstuffs
- International treaties (e.g.)
  - NSC
  - CPPNM
  - NPT
  - Trilateral Treaty
- IAEA (e.g.):
  - Fundamental Safety Principles
  - Site Evaluation for Nuclear Installations Safety Requirements
  - Safety of Nuclear Power Plants: Operation Safety Requirements
  - Safety of Nuclear Power Plants: Design Safety Requirements
  - The Management System for Facilities and Activities
  - Code of Conduct on the Safety and Security of Radioactive Sources
- ICRP - 103

New Legislation

- New structure of regulation
  - Framed by particular fields of interests
    - Nuclear energy utilization
    - Radiation protection in ionizing radiation utilization
    - RadWaste management
    - Type approval and transportation
    - Monitoring of radiation situation
    - Emergency management
    - Security
    - Non-Proliferation
  - Following lifecycle of the facilities or activities („from cradle to grave“)
- New structure aims on better orientation of the addressee in the text and clear applicability of the rules

New Legislation

- **Act no. 263/2016 Coll., on Peaceful Utilization of Nuclear Energy and Ionizing Radiation (the Atomic Act) and on Alterations and Amendments of Some Legislation**
- **Adopted by the Czech Parliament in 2016, entry into force in 2017**
- **Amended by 26 subsequent decrees**

Changes and Challenges

Principal changes in Czech national legislation

Exposure situations (planned, emergency, existing) are now replacing practices and interventions

Occupational exposures

- N**ew limits for effective dose** – 20mSv/y with possibility to authorize 100mSv/5y, legislation now includes more explanation on the use of limits – prospective tool for regulation, it is recommended to stop temporary the work of radiation workers when exceeding dose limit, to perform the investigation why limit was exceeded and medical examination of worker and then take a decision taking into account the physician´s and SUJB advice, when worker is fit for further work with sources and there are not any other serious reasons why not to allowed him to continue in the work, he can continue
- N**ew limit for lens of eye** – 20mSv/y – SUJB will issue a guidelines for monitoring
- **2 dosemeters** required for identified professions when using shielding apron – mainly interventional radiologists
- O**utside workers** – now more broader definition – not only category A and not only controlled area, also self – employed workers

Occupational exposures

- **Emergency workers** – professionals (members of integrated rescue systems, soldiers), but also volunteers (health surveillance required), reference level – 50mSv(IAEA), 100mSv (EU) – actions with possibility to reach this level – voluntarily – problem for fire fighters, policeman, soldiers because they have to follow orders
- More specific requirements for specification of **dose constraints for occupational exposures –** it will be established by licensee and introduced in monitoring programme, SUJB will issue a guidelines how to derive appropriate dose constraint, however already now there is established so called investigation level which indicates a necessity for investigation when reached or exceeded – the idea is to have dose constraint for occupational exposure from 6 to 10 mSv /year.
- **Optimization** – is now more emphasized, financial equivalent of averted dose is still included but as only possible tool for comparison of cost and benefit, more accent put on the good practices, BAT in some cases, the decree on radiation protection includes detailed outlines of document called “ proof of optimization”

Public exposures

- **Dose constraint for public exposures** is established in legislation and it is the same as in current legislation on the level of 250mikroSv/y
- Representative person

Existing exposure situations

- **Remediation** after radiation emergency – the preparation of general strategy which will be included in “National Radiological Emergency Plan” , general reference level is 20mSv/y and optimization is strictly required

Remediation of contaminated areas after Past activities

- Provisions are made for identifying persons, organizations responsible for areas with residual radioactive material, for establishing and implementing remediation programmes and post-remediation control measures, and for putting in place a strategy for radioactive waste management.
- In the Czech Republic there is still a lot of contaminated sites (consequences of "past activities"), which come mainly from former uranium activities, app. about 8 000 sites. All these are under the supervision of DIAMO Inc. and its branches; majority of them supervises the Administration of Uranium Deposits. Thus dose rates, activity of water if flows out, and other data concerning the particular locations are well known. No tails are in a condition that remediation is to be performed.
- Nothing new can arise from the current activities (planned exposure situations) because of strict supervision and licensing (control - license conditions, monitoring programs, emergency plan). The Act gives the tools to deal effectively with the potential radioactive residues of "past activities" or "accidents".
- Current activities in the field of uranium mining within the individual branches of DIAMO Inc. are planned exposure situations, which are performed under the authorization of SUJB – and therefore monitoring programs, emergency plans, and conditions of decisions for clearance are approved. Future problems from these activities cannot result, because the process of decommissioning licensed by SÚJB will be performed at the end of all current uranium activities with respect of all the relevant requirements established by the Act.

Remediation of contaminated areas after Past activities

- Financing of remediation is ensured in both cases (rediscovered old contaminated sites or new created contamination). The remediation will be a matter of Diamo Inc., which is state company. In the case when the owner is not known the remediation is financed by the State.
- Anybody who would discover by a chance a contaminated site is obliged to report this to SÚJB. But the chance that such site could exist in the territory of the Czech Republic is very unlikely.

- The radiation situation monitoring is ensured by the licensee and independently also by the National Monitoring Network which is co-ordinated by SÚJB, throughout the territory of the Czech Republic, further by administrative authorities, persons who are holders of a tip, settling pond or other residue of mining, treatment or processing of a radioactive mineral or other mining activity accompanied by the occurrence of a radioactive mineral, or other persons referred to in the national monitoring programme. (MoNRaS)
- The person who is the holder of a tip, settling pond or other residue of mining, treatment or processing of a radioactive mineral or other mining activity accompanied by the occurrence of a radioactive mineral shall ensure monitoring of these residues and take remedial action if clearance levels are exceeded. The owner of the land on which monitoring or remedial action is performed shall tolerate the measures associated with their implementation.

Remediation of Contaminated areas after Emergency

- One part of the Act deals with Emergency preparedness. If the radiation accident occurs and release of radioactive materials takes place so that after accident remain contaminated areas, radiation protection strategy will be formulated in the National emergency plan together with optimization for this situation. National emergency plan will be approved by the government into 2019.
- The strategy will include establishing relevant reference levels, criteria for long-term stay in a contaminated area, another regime measures, rules for decontamination, etc. ... Recommendation for this problematics is addressed in the R&D project of the Ministry of Interior. SÚJB may operatively to issue a general measure for the regulation of food, feed, setting values for decontamination, etc...

Emergency Exposure Situation

- General **Reference level for emergency exposure situations** is 100mSv for residual dose and justification and optimization is required for introduction of all protective actions, averted dose is still in use for decision making process
- **Operational Interventions Levels** are introduced into the legislation as an operational tool mainly for decisions in urgent phase of emergency situation

Crisis Communication

- Web page SUJB
- Leaflets,UNSCEAR booklet
- Seminars, presentations – explanation of principles – focused to public, municipalities, fire fighter, first aid workers, policemen in zones of emergency preparedness around NPPs

Thank you for your attention