



RADON IN THE WORKPLACE

REGULATORY FRAMEWORK IN THE CZECH REPUBLIC

Hana Prochazkova

State Office for Nuclear Safety, Czech Republic
Division of Natural Radiation Sources



Legislative Framework in the Czech Republic

Radiation protection in the Czech Republic in the workplace with natural sources of ionizing radiation is defined by **Act No. 263/2016 Coll., The Atomic Act**. This Act introduced some new concepts and requirements regarding radiation from radon in the workplace (§ 96 and 97 of the Atomic Act).

Details are set out in § 92 to 95 **Decree No. 422/2016 Coll., On Radiation Protection and the Security of Radionuclide Source**.

Workplaces with radon are classified as **existing exposure situation**.

The legislation set **reference level on 300 Bq/m³** for the average concentration of radon activity in the workplace.



Workplace with potentially increased exposure to radon are considered

- a) **underground workplaces** throughout the Czech Republic
- b) **workplaces in which water from an underground source** is pumped, collected or similarly handled (water treatment facilities, pumping stations, spa facilities, bottling facilities, etc.)
- c) **workplaces on the ground floor or the basement of a building located in radon priority area**, areas with increased radon risk (list of locations is in Annex decree)

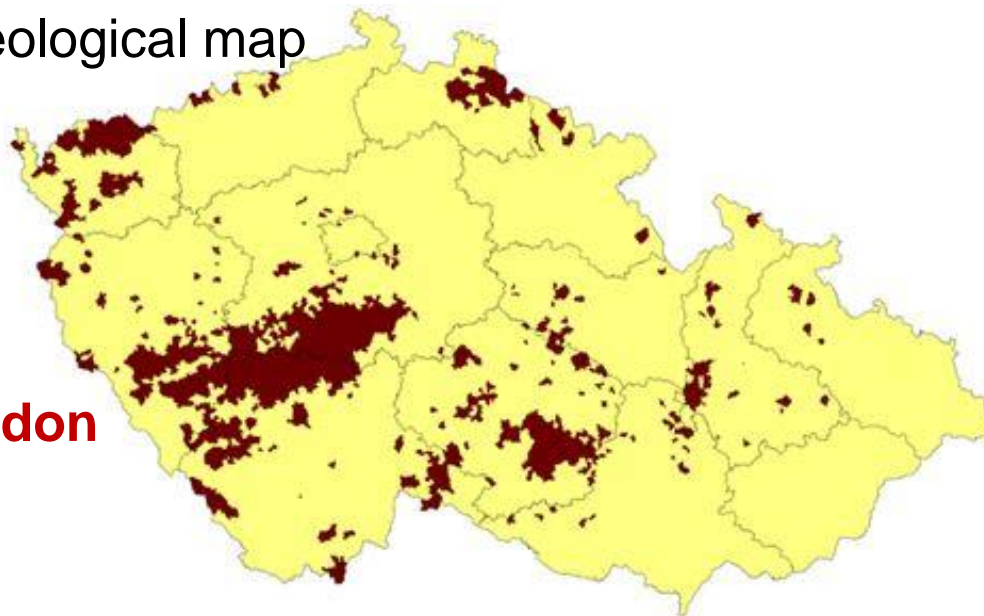
Requirements does not apply to workplaces

- in buildings with a sub-cellar under basement floor
- in a parking lot or garage
- in buildings, where anti-radon measures have been taken

Radon priority areas

- are definated areas, where likelihood of exceeding the reference level is greater than 30%
- based on previous measurements, database contains the results of long-term measurements of radon concentration in more than 200 000 family houses, schools and kindergartens and public buildings throughout the Czech Republic
- information from detailed geological map

**Map of areas in the CR
with an increased risk of radon**





Basic obligations of the employers

Anyone who performs activities of a workplace with potentially increased exposure to radon shall

- 1) **report information about the workplace to the State Office for Nuclear Safety (SONS)**
- 2) **ensure measurements** average activity volume concentration of radon and **establish the effective doses** to workers in the workplace performed by licenced firm
- 3) **ensure optimisation of radiation protection**, if the reference level of 300 Bq/m^3 have been exceeded
- 4) **inform workers** about the potentially increased exposure to radon and health risk, about the results of the measurements, effective doses.



The following information shall be submitted to the SONS

for the first time before starting operation of the workplace that may be subject to increased exposure to radon

- a) **the identification details** of the firm and company management,
- b) **the name and address of the workplace**,
- c) **the type of workplace** according to the decree,
- d) **the description of the workplace** as well as the organisation, method and regime of work, ventilation conditions in the workplace, working hours of workers,
- e) **the description of the optimisation of radiation protection** in the workplace.

First measurement in the workplace

The workplace with potentially increased exposure to radon, shall ensure measurement average activity volume concentration of radon

- compliance or exceedance of the **reference level 300 Bq/m³** has been discovered by first measurement.

Companies performing the measurements for all purposes are licenced by the State Office for Nuclear Safety.

First measurement is based on long-term (annual) measurements using passive RAMARN detectors.

The measurement method has issued and recommended by SONS and is followed by licenced firms.





Repeated measurement in the workplace

The workplace with potentially increased exposure to radon, where exceedance of the reference level 300 Bq/m³ has been discovered by first measurement

- shall be assessed based on repeated measurement of indoor radon and calculation of the effective dose
- whether for any worker the effective dose value of 6 mSv over 12 months could be exceeded.

The workplace, where no exceedance of the reference level or no possibility of exceeding the effective dose value of 6 mSv over 12 months was discovered, the other measurement does not have to be performed.



The optimisation of radiation protection in the workplace with potentially increased exposure to radon shall be accepted when **exceedance of the reference level 300 Bq/m³** is discovered.

The optimisation measures for radiation protection include

- organizational changes in the workplace
- modification of the ventilation system in the workplace
- building and technical measures in the workplace



The workplace, where possibility of exceeding the effective dose 6 mSv per 12 months was discovered, is classified as

Workplace with increased exposure to radon
with following **requirements**

- a) **apply limits** with regard to exposed workers,
- b) **delineate the workplace** or part where the effective dose to a worker is liable to exceed 6 mSv per year,
- c) **annually instruct the workers on the radiation risk**,
- d) **draw up instructions for work** in the workplace, including instructions for the safe conduct of the work,
- e) **ensure a monitoring procedure** is drawn up, and
- f) **documentation of radiation protection** of workers.

Measurement and determination of the effective dose of workers shall be performed every calendar year.

Information leaflet: Radon in the workplace

Do you know that radon is a radioactive gas?

Do you know that radon can also be present in the workplace?

Do you know how much radon is in your workplace?

Is it necessary to reduce the amount of radon ?


Is your workplace under the obligations of Atomic Act?

If your workplace, such as office, workshop, laboratory, store, located in the ground floor or basement of a building in a dark marked area on this map:

This is probably a workplace with possible increased radon exposure, apply the obligations under the Atomic Act.

Take care of the health risk from radon.

Measure, inform employees and register workplaces at the State Office for Nuclear Safety.

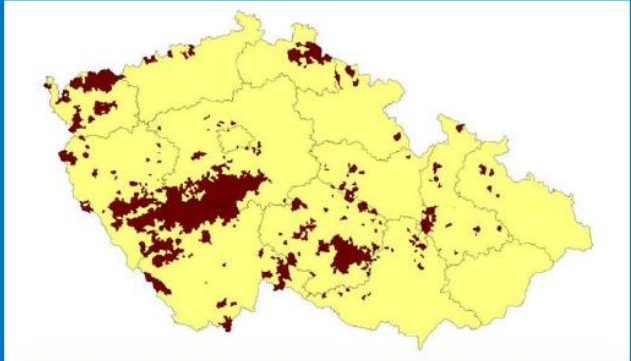


RADON NA PRACOVÍŠTI


podle § 96 zákona č. 263/2016 Sb., atomový zákon

- víte že radon je radioaktivní plyn a že jeho vdechování může zvýšit pravděpodobnost onemocnění rakovinou plic?
- Víte, že se radon může vyskytovat i na pracovišti?
- Víte, kolik radonu je na vašem pracovišti?
- Je nutné množství radonu snížit?
- Jste provozovatelem pracoviště?
- Jste pracovníkem?
- Vztahují se na vaše pracoviště povinnosti podle atomového zákona?


Pokud je vaše pracoviště, např. kancelář, dílna, laboratoř, obchod či jiná provozovna, umístěno v podzemní nebo přízemní části budovy v obci tmavě vyznačené na této mapě:



jedná se pravděpodobně o pracoviště s možným zvýšeným ozářením z radonu, na které se vztahují povinnosti podle atomového zákona.




Seznam obcí vyznačených na mapě a registrace pracoviště:
<https://www.radonovyprogram.cz/pracoviste/>
Zajímejte se o zdravotní riziko z radonu.
Mějte, informujte pracovníky a registrujte pracoviště na Státním úřadu pro jadernou bezpečnost.



STÁTNÍ ÚŘAD
PRO JADERNOU
BEZPEČNOST

Konzultujte na Státním úřadu pro jadernou bezpečnost
radon-pracoviste@sujb.cz



www.sujb.cz

Thank you for attention.

hana.prochazkova@sujb.cz

