**DECREE ON NATIONAL RADON PROGRAM REGULATION**

**UNOFFICIAL TRANSLATION**

*Prepared by the Slovenian Nuclear Safety Administration in December 2018.*

*The official text of the Act is located on the pages of* [*the Legal Information System*](http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED7606)*.*

***WARNING:*** *The unofficial text of this Act is just an informative work tool, for which the Slovenian Nuclear Safety Administration does not guarantee.*

Based on Article 73 of the Ionising Radiation Protection and Nuclear Safety Act (Official Gazette of the Republic of Slovenia, No. 76/17) the Government of the Republic of Slovenia is issuing

# D E C R E E

**on national radon program regulation**

**Article 1**

**(Purpose and content)**

1. This Decree shall lay down a national radon program.
2. This Decree transposes the provisions of Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for the protection against the dangers arising from ionizing radiation and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom (OJ L 13, 17. 1. 2014, p. 1), last amended by a correction (OJ L 72, 17. 3. 2016, p. 69).

# Article 2 (Reference level)

The reference level of the average annual concentration of radon in indoor living and working areas shall be 300 Bqm-3.

# Article 3

# (Methodology for determining the average annual concentration of radon)

* 1. The first measurement designed to determine the average annual concentration of radon indoor and outdoor locations shall be carried out during the period when the highest concentrations of radon are expected. In indoor areas, the first measurement is carried out during the heating season. The first measurement takes a minimum of 30 days and a maximum of 90 days.
  2. If the result of the first measurement of the radon concentration does not exceed the reference level, it is assessed that the risk of health due to radon in the room or at the location where the measurement was carried out is acceptable and no further action is required. Radon concentration measurement should be repeated if the conditions affecting the radon concentration change. In enclosed spaces, these changes occur, for example, after energy recovery or after replacing windows in the building.
  3. If the radon concentration measured at the first measurement exceeds the reference level, another measurement shall be carried out in the next period when the lowest radon concentration is expected. In closed rooms, the second measurement is carried out in the next summer period. The second measurement lasts for at least 30 days and a maximum of 90 days.
  4. If the radon concentration measured at the first measurement exceeds three times the refence level, the possibility of reducing the retention time in the room or the site is immediately verified and regular ventilation of the premises is carried out.
  5. The results of the first and second measurements are used to calculate the average annual concentration of radon. If the average annual radon concentration exceeds the reference level, it is necessary to check the possibility of shortening the time of occupancy in the room or site and thus is not feasible or the corresponding effects are not achieved, measures should be taken to reduce the concentration of radon in the room and hence the exposure of individuals.
  6. Measures to reduce occupancy time in the premises or at the site, and thus exposure to radon, may be the reorganization of work tasks and working hours, the transfer of workers or individuals from the population to other premises, the cessation of the use of premises in which people are most exposed. A simple measure that helps reduce exposure is regular ventilation of the premises.

# Article 4

# (Methodology for assessing doses)

1. The radiological dose estimation shall be carried out by an authorized radiation protection expert using the methodology defined by the International Commission on Radiological Protection (ICRP), considering the conditions in these premises and the time of rest or stay in them.
2. For the average specific activity of radon 300 Bqm-3 and the equilibrium factor between radon and its short-lived offspring is 0,4:
   * at 2000 hours of workplace exposure, the effective dose of a worker not carrying heavy physical work is estimated at 4.0 mSv;
   * at 2000 hours of workplace exposure, the effective dose of a worker in tourist caver or a worker performing heavy physical work in confined areas is estimated at 8 mSv and
   * at 7000 hours of exposure in accommodation, the effective dose of the inhabitant is estimated at 14 mSv.
3. When the actual situation differs from the conditions referred to in the preceding paragraph, the authorized radiation protection expert shall carry out the calculation of the exposure.

# Article 5

**(Areas with more radon)**

1. Areas with more radon shall be specified according to a methodology that is based on radon concentration measurements in the ground, considering various geological substances, the radium-226 content of rock and its permeability, and the level of average annual radon concentration in indoor areas.
2. Areas with more radon are in the following municipalities: Bloke, Cerknica, Črnomelj, Divača, Dobrepolje, Dolenjske Toplice, Hrpelje-Kozina, Idrija, Ig, Ivančna Gorica, Kočevje, Komen, Logatec, Loška dolina, Loški Potok, Miren-Kostanjevica, Pivka, Postojna, Ribnica, Semič, Sežana, Sodražica, Vrhnika, Žužemberk.

# Article 6

**(Surveillance of working and living environment)**

1. The surveillance of a working and a living environment shall include:

* determining the average annual concentration of radon;
* taking additional measurements of radon concentration, the measurement of the concentration of its decay products, the balance factor and other parameters, and analysing the causes of increased radon concentration;
* taking measurements of the gamma radiation dose rate and analysing the causes of increased dose rates.

1. The type and scope of measurements referred to in the preceding paragraph shall be selected to allow for the assessment of workers and members of the public, and the assessment of measures needed for reducing exposure.
2. Radon measurements shall be taken by a provider authorised to take such measurements under the law governing protection against ionising radiation and nuclear safety. After taking measurements, the provider authorised to take radon measurements, who will also be authorised to prepare an assessment of doses and give an expert opinion, shall prepare a report on measurements together with an assessment of the exposure of workers and the public including proposals for measures of radiation protection to reduce exposure.

# Article 7 (Systematic surveillance)

1. Systematic surveillance and taking of measurements of adequate quantities will ensure the detection of:
   * exposure due to radon in facilities used for the provision of childcare, education, cultural or healthcare programs;
   * exposure due to radon in indoor areas situated in a basement or on a ground floor, or in other areas, where it can be expected that the average annual radon concentration will exceed reference levels;
   * external exposure in indoor areas in existing buildings due to the building materials  
     used.
2. The systematic surveillance of a working environment shall be provided in areas where children, young people and other more sensitive population groups (such as patients) are exposed to radon, and where there is a greater likelihood that the annual dose may exceed 6 mSv due to exposure to radon and its progeny.

# Article 8

**(Extent and frequency of systemic surveillance)**

1. At least 50 buildings used for providing childcare, cultural, healthcare and education programs, and at least 100 residential buildings, shall be reviewed annually.
2. Other facilities can be reviewed and doses assessed from other activities if it is likely that workers, or members of the public, are exposed to increased radon radiation.
3. Measurements and dose assessments are taken as a priority in facilities, in which the structure or ground composition is likely to cause increased radon exposure and where increased exposure is expected due to the activity being performed.

# Article 9 (Surveillance at workplaces)

1. An employer shall ensure radon at workplaces is measured:

* on ground and basement levels with more radon, and
* at locations where increased radon concentration can be expected, such as in spas, pools and other radon water sources, in caves, mines and other underground working areas throughout the Republic of Slovenia.

1. Radon measurements referred to in the preceding paragraph shall be taken by providers authorised to take radon measurements. These providers shall advise the employer on the selection and number of measuring points.

# Article 10

**(Measures in cases of increased exposure)**

1. If, based on measurements and dose assessments, it is established that workers or members of the public receive more than 6 mSv annually due to exposure to radon and its progeny, measures for reducing exposure shall be implemented.
2. Measures for reducing exposure may include reorganisation of working tasks and working time, airing of premises, reassigning workers and relocating members of the public to other areas, ceasing to use areas where people are most exposed, as well as other activities that contribute to reducing exposure.
3. The provider of building interventions referred to in the preceding paragraph shall demonstrate the success of measures implemented after the works are completed by taking control measurements by an authorised provider of radiation protection. The control measurements shall be sufficient to check the success and effectiveness of measures implemented.
4. The measures shall be ordered by the authority responsible for radiation safety.
5. Measures ordered shall be proportionate to the exposure and be the most economically efficient means of achieving the most effective and permanent exposure reduction.

# Article 11

**(Means for implementing measures)**

1. The State shall ensure the implementation of measures in facilities used for childcare, cultural, healthcare and educational programs. The means shall be provided in accordance with budget planning by the ministry responsible for the primary activity for which the facility is used.
2. The owner of the facility shall ensure the implementation of measures in facilities not falling within the preceding paragraph.
3. Where an activity includes worker exposure, the implementation of measures shall be provided by the operator of the activity.

# Article 12

**(Providing information in an area exposed to radon)**

The authority responsible for radiation safety shall:

* 1. provides information to the public, employers and local decision-makers through publications about health risks due to radon exposure, particularly relating to smoking;
  2. prepares guidelines on preventing the entry of radon into buildings, including the identification of construction materials with high radon-release levels, and on implementing the rehabilitation of facilities and new buildings in areas with higher radon;
  3. organises seminars, expert meetings and workshops on health risks due to radon exposure;
  4. warns that adequate air quality in indoor areas must be provided where energy saving measures, such as energy rehabilitation and the installation of new windows, are implemented;
  5. keeps records on radon concentration measures for indoor areas in accordance with the Article 72 of the Ionising Radiation Protection and Nuclear Safety Act (Official Gazette of the Republic of Slovenia, No. 76/17);
  6. strives to realise the long-term objective of reducing the risk of lung cancer, by regularly defining risks due to radon in strategic documents on managing cancers, and in programs established for the healthcare of children and young people;
  7. within available financial means, supports research to improve understanding of the effects on health of radon exposure;
  8. publishes a list of providers of works with knowledge and experience in the field of suitable new constructions and the successful rehabilitation of buildings;

**Article 13**

**(Assessing the effectiveness if the implementation of the measures and their updating)**

The authority responsible for radiation protection:

* + prepares and updates every five years the health risk management strategy for radon with defined objectives and indicators, the extent and frequency of the examination and the implementation of measurements in the working and living environment;
  + assesses the effectiveness of the implementation of the radon program, considering the number of radon concentrations measured annually and the number of measurement that the radon is looking for in the space, the number of awareness raising about the radon population, the proportion of successfully rehabilitated buildings, the identified need for rehabilitation and the number of rehabilitated facilities with public funds;
  + at least once during a period of five years, verifies the relevance and updates the list of areas of higher radon concentration, considering the properties of soil composition and the measurement of radon concentrations, and to assess the appropriateness of the selected reference level of the average annual concentration of radon in indoor conditions;
  + in the following municipalities: Bohinj, Borovnica, Brezovica, Gorenja vas – Poljane, Gorje, Grosuplje, Ilirska Bistrica, Jesenice, Kanal, Kostanjevica na Krki, Kostel, Metlika, Mežica, Mirna Peč, Mokronog – Trebelno, Mozirje, Nova Gorica, Novo mesto, Osilnica, Radovljica, Staža, Škofja Loka, Trebnje, Tržič, Velike Lašče, Vuzenica and Žirovnica, and in areas where concentrations were measured above the reference value in areas outside the range of radon, additional measurements are carried out.

**TRANSITIONAL AND FINAL PROVISIONS**

**Article 14**

**(Transitional provision)**

The methodology for assessing the doses referred to in Article 4 of this Decree shall be applied in 2019.

**Article 15**

**(The cessation of use)**

On the day of the entry into force of this Regulation, in the part defining the measures related to the effects of radon, the Decree on the program for the systematic examination of the working and living environment and the awareness of the population on the importance of measures to reduce the presence of natural sources of radiation (Official Gazette of the Republic of Slovenia, No. 19/16 and 76/17 - ZVISJV-1).

# Article 16 (Entry into force)

This Decree shall enter into force the day after its publication in the Official Gazette of the Republic of Slovenia.

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Ljubljana, 14th March 2018  
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# Government of the Republic of Slovenia

**dr. Miroslav Cerar**

President