REGULATION ON RADIATION PROTECTION

(Promulgated, SG No. 16/2018; amended and supplemented, SG No. 110/2020)

Chapter One
GENERAL PROVISIONS

Article 1. (1) This Regulation establishes the requirements for protection of health in the case of occupational and public exposure and for prevention against the dangers arising from ionising radiation.

(2) The requirements for protection of health in the case of medical exposure shall be established by the Regulation under Article 65, paragraph 1, point 2 of the Health Act.

(3) The Regulation shall apply to any planned, existing or emergency exposure situation where there is a likelihood of adverse health effect on present and future generations, which cannot be disregarded from a radiation protection point of view.

(4) The Regulation shall apply to:

1. the use, manufacture, treatment, processing, handling, disposal, storage, transport, import and export of radioactive material and sources of ionising radiation;

2. the manufacture and the operation of electrical equipment emitting ionising radiation and containing components operating at a potential difference of more than 5 kV;

3. (Supplemented, SG No. 110/2020) activities which involve the presence of natural sources of ionising radiation and other activities that lead to a significant increase in the exposure of workers or members of the public due to a higher content of natural sources of ionising radiation, including the exposure of aircraft crew or spacecraft crew;

4. the exposure of workers or members of the public to indoor radon, the external exposure from construction materials and cases of lasting exposure resulting from the after-effects of a radiation accident or past human activity.

5. the preparedness for, the planning of response to and the management of emergency exposure situations that are deemed to warrant measures to protect the health of members of the public or emergency workers.

Article 2. The activities related to the operation of nuclear power plants, research reactors, radioactive waste management facilities and spent nuclear fuel management facilities as well as the activities related to transport of radioactive substances shall be subject to the specific safety requirements set out in the respective regulations for the application of the Act on the Safe Use of Nuclear Energy.

Article 3. This Regulation shall not apply to:

1. radiation exposure at ground level by cosmic radiation and aboveground exposure to radionuclides present in the undisturbed earth's crust;

2. exposure to potassium-40 and other natural radionuclides contained in the human body;

3. (Supplemented, SG No. 110/2020) members of the public exposure and exposure of workers other than aircraft crew and spacecraft crew to cosmic radiation in flight.

Chapter Two
RADIATION PROTECTION SYSTEM

Section I
General principles of radiation protection

Article 4. (1) All practices that result or could result in exposure to ionising radiation shall be justified in advance by their economic, social or other benefits to the exposed individuals or to society in the sense that such decisions shall be taken with the intent to ensure that the individual or societal benefit resulting from the practice outweighs the health detriment that it may cause.

(2) Decisions introducing or altering an exposure pathway for existing and emergency exposure situations shall be justified in the sense that they should do more good than harm.

(3) Radiation protection of individuals subject to public or occupational exposure shall be optimised with the aim of keeping the magnitude of individual doses, the likelihood of exposure and the number of individuals exposed as low as reasonably achievable, taking into account the current state of technical knowledge and economic and societal factors.

(4) The principle of optimisation of radiation protection under paragraph 3 shall apply at any stage of the life cycle of nuclear facilities and sources of ionising radiation (design, production, commissioning, operation, decommissioning, storage, disposal), including at radioactive waste management and spent nuclear fuel management.

(5) In planned exposure situations, the individual effective and equivalent doses of occupationally exposed workers and members of the public shall not exceed the dose limits laid down in this Chapter. The dose limits shall not apply to medical exposures.

Article 5. (1) For the purpose of optimisation of radiation protection in planned exposure situations, dose constraints shall be established for exposure of members of the public and occupational exposure.

(2) The dose constraints shall be an operational tool for optimisation and shall be established as individual effective and equivalent doses for an appropriate period of time.

Article 6. (1) For occupational exposure, the dose constraint shall be established by the undertaking.

(2) In the case of outside workers, the dose constraint shall be established in cooperation between the employer and the undertaking.

Article 7. (1) For exposure of members of the public, the dose constraints shall be established by the regulations under Article 26 of the Act on the Safe Use of Nuclear Energy and shall be specified in the licence and permit conditions.

(2) The dose constraints shall be consistent with the dose limit for the sum of doses to the same individual from all authorised practices. The possible pathways for exposure to radiation under normal operating conditions shall be considered for the respective nuclear facility or source of ionising radiation.

Article 8. (1) For emergency and existing exposure situations, the Minister of Health shall establish reference levels for members of the public and via the state health control authorities shall give directions and supervise their implementation. For such situations, the optimisation of protection shall give priority to exposures above the reference level and the optimisation process shall continue to be implemented including where the levels of exposure are below the reference level.

(2) The choices of reference levels under paragraph 1 shall take into account the type and specificities of the exposure situation, taking into account the requirements for radiation protection, the societal criteria and the following conditions:

1. for public exposure in the range up to 1 mSv per year – on the basis of a general information on the level of exposure without specific consideration of individual exposures to be taken into account;

2. for public exposure in the range up to 20 mSv per year – on the basis of specific information which gives the individuals the possibility to manage their own exposure.

3. for public exposure in the range up to 100 mSv per year – on the basis of an assessment of the individual doses and specific information on radiation risks and available actions to reduce exposures.

Article 9. For existing exposure situations involving exposure to indoor radon, the reference levels for members of the public and workers shall be set in terms of average annual volume radon concentration in air.

Section II
Dose limits for occupational and public exposure

Article 10. (1) The dose limits for occupational exposure shall apply:

1. to the sum of annual effective doses and the sum of equivalent doses from internal and external exposures of a worker in planed exposure situations due to all authorised activities involving work with ionising radiation.

2. for occupational exposure to radon in workplaces where the annual average volume radon concentration exceeds the reference level;

3. for existing exposure situations specified in Article 47, where the implementation of the provisions applicable to planned exposure situations is required.

(2) For emergency workers in emergency exposure situations, the requirements for dose limitation under Articles 84 and 85 shall be applied.

Article 11. (1) The limit on the effective dose for any occupationally exposed worker shall be 20 mSv in any single year.

(2) In addition to the effective dose limit laid down in paragraph 1, the following limits on equivalent doses shall apply:

1. the limit on the equivalent dose for the lens of the eye shall be 20 mSv in a single year or 100 mSv in any five consecutive years subject to a maximum dose of 50 mSv in a single year;

2. the limit on the equivalent dose for the skin shall be 500 mSv in a year, this limit shall apply to the dose averaged over any area of 1 cm² area of skin, regardless of the area exposed;

3. the limit on the equivalent dose for the extremities shall be 500 mSv in a year.

Article 12. The dose limits for members of the public exposure shall apply to the sum of annual effective doses and the sum of equivalent doses from internal and external exposures, which can be obtained by a member of the public for a period of one year, resulting from all authorised practices.

Article 13. (1) The limit on the effective dose for a member of the public shall be 1 mSv in a year.

(2) In addition to the effective dose limit referred to in paragraph 1, the following limits on the equivalent dose shall apply:

1. the limit on the equivalent dose for the lens of the eye shall be 15 mSv in a year;

2. the limit on the equivalent dose for the skin shall be 50 mSv in a year, averaged over any 1 cm² area of skin, regardless of the area exposed.

Section III
Dose limits for apprentices and students

Article 14. The limits of the effective and equivalent doses for apprentices and students aged 18 years or over who, in the course of their studies, are obliged to work with sources of ionising radiation, shall be the same as the dose limits for occupational exposure laid down in Article 11.

Article 15. (1) The limit on the effective dose for apprentices and students aged between 16 and 18 years who, in the course of their studies, are obliged to work with ionising radiation, shall be 6 mSv in a year.

(2) In addition to the limits on the effective dose laid down in paragraph 1, the following limits on equivalent dose shall apply:

1. the limit on the equivalent dose for the lens of the eye shall be 15 mSv in a year;

2. the limit on the equivalent dose for the skin shall be 150 mSv in a year, averaged over any area of 1 cm², regardless of the area exposed;

3. the limit on the equivalent dose for the extremities shall be 150 mSv in a year.

(3) Students and apprentices up to 18 years of age shall not be assigned a job covered by the requirements under Article 11 for occupationally exposed workers.

Article 16. The limits of the effective and equivalent doses for apprentices and students who are not subject to the provisions of Articles 14 and 15 shall be the same as the dose limits for members of the public as specified in Article 13.

Section IV
Protection of pregnant and breastfeeding workers

Article 17. (1) The protection of pregnant and breastfeeding workers employed by an undertaking, or in case of outside workers, shall be comparable with that provided for members of the public.

(2) A woman who works with ionising radiation is obliged to notify in writing her employer as soon as her pregnancy has been diagnosed.

(3) As soon as being informed according to the procedure under paragraph 2, the undertaking or, in the case of an outside worker, the employer, shall ensure that the employment conditions for the pregnant worker are such that the equivalent dose to the unborn child is as low as reasonably achievable, at the lowest possible reasonably achievable range and will under no circumstances exceed 1 mSv during the rest of the pregnancy.

(4) A woman who is breastfeeding an infant is obliged to notify the undertaking or the employer, in case she is an outside worker. As soon as the undertaking or the employer has been notified, she shall not be admitted to perform activities involving intake of radionuclides or surface body contamination.

Section V
Assessment of the effective and equivalent doses from internal and external exposure

Article 18. (1) In the evaluation of the effective and equivalent doses of external and internal exposure, the values, interdependencies and measurement units, as well as the radiation and tissue weighting factors defined in Annex No. 1 shall be used.

(2) In the assessment of the doses for a given exposure situation or exposed individual, the physico-chemical or other characteristics of the sources of ionising radiation shall be taken into account.

(3) The Minister of Health trough the National Centre for Radiobiology and Radiation Protection shall evaluate the doses of external and internal exposure of the public as a whole and of representative individuals.

(4) (Amended, SG No. 110/2020) The evaluation under paragraph 3 shall take into account the results of the radiation monitoring of the environmental and living condition factors provided by the persons entrusted with such monitoring.

(5) The persons under paragraph 4 shall provide annually, by 1 March, information on the monitoring, analysis and evaluation of obtained results to the National Centre for Radiobiology and Radiation Protection.

(6) Secondary (derived) limits for radiation control purposes, protection planning and dose estimation for occupationally exposed workers and members of the public in planned exposure situations are set out in Annex No. 2.

Chapter Three
REQUIREMENTS ON EDUCATION, TRAINING AND INFORMATION PROVIDED IN TERMS OF RADIATION PROTECTIN

Section I
General responsibilities for the education, training and provision of information

Article 19. The undertakings and employers of outside workers are obliged to ensure the maintenance and control of the professional qualification of the employees in accordance with the requirements of the Act on the Safe Use of Nuclear Energy and the Regulation on the Terms and Procedure for Obtaining Vocational Qualification and on the Procedure for Issuing of Licenses for Specialised Training and Individual Licenses for Use of Nuclear Energy, adopted by Decree No 209/2004 of the Council of Ministers (promulgated, State Gazette No. 74/2004, amended and supplemented, No. 46/2007, No. 5/2010, No. 27/2015 and No. 4/2016).

Article 20. (1) (Supplemented, SG No. 110/2020) Any undertaking acquiring and/or operating an equipment (apparatus, installation, device) which contain radioactive source or radiation generator shall be provided with adequate information on their potential radiological hazards and their proper use, testing and maintenance as well as with proof that they are designed in a way to keep the exposure as low as reasonably achievable.

(2) Any undertaking acquiring and/or operating medical radiological equipment shall be provided with adequate information on the risk assessment for patients, and on the available elements of the clinical evaluation when using this equipment.

Section II

Training and information of workers likely to receive exposure in the course of their employment

Article 21. (1) The undertakings shall inform the occupationally exposed workers on:

1. the radiation health risks involved in their work;

2. the general radiation protection procedures and precautions to be taken;

3. the radiation protection procedures and precautions connected with the operational and working conditions of both the activity in general and each facility unit or type of work to which they may be assigned;

4. the relevant parts of the emergency response plans and procedures;

5. the need to comply with respective technical, medical and administrative requirements.

(2) The employers of outside workers shall have the responsibility to ensure that the information required in paragraph 1, points 1, 2 and 5 is provided to the workers.

(3) The undertakings or, in case of outside workers, the employers, shall inform the occupationally exposed workers on:

1. the importance of making an early notification of pregnancy in view of the risks of exposure for the unborn child;

2. the importance of announcing the intention to breastfeeding an infant in view of the risks of exposure of the infant after the intake of radionuclides or body contamination of breastfeeding women.

(4) The undertakings or, in case of outside workers, the employers, shall provide appropriate radiation protection training and information programs for the occupationally exposed workers.

(5) In addition to the information and training in the field of radiation protection as specified in paragraphs 1 - 4, the undertakings responsible for high activity sources shall ensure that the training includes specific requirements for the safe management and control of high activity sources, with a view to adequately prepare the workers for events affecting the radiation protection.

(6) The information and training shall place particular emphasis on necessary safety requirements and shall contain specific information on the possible consequences in case of loss of adequate control over high activity sources.

Article 22. (1) The managers of the units where orphan sources are most likely to be found (including large metal scrap yards and major metal scrap recycling installations, and transport or border crossing points) shall inform the workers of:

1. the possibility that they may be confronted with an unidentified radioactive source at work;

2. the basic facts about ionising radiation and its effects;

3. the actions to be taken on-the-spot following the detection, or suspected detection, of an orphan source.

(2) The managers of the units under paragraph 1 shall provide the workers with training on visual detection and identification of radioactive sources and their containers and the actions to be taken in case of detection, or suspected detection, of orphan sources.

Article 23. (1) The emergency workers shall be entitled to receive adequate and regularly updated information on the health risks their intervention might involve and shall be instructed on the precautionary measures to be taken. The emergency workers shall be trained to react in the case of an emergency in compliance with the Regulation under Article 123 of the Act on the Safe Use of Nuclear Energy.

(2) In the event of an emergency, the information under paragraph 1 shall be duly supplemented taking into account the specific circumstances of the emergency situation.

Section III
Dosimetry services and medical surveillance

Article 24. (1) The dosimetry services shall determine the internal and/or external doses to occupationally exposed workers subject to individual dosimetric monitoring in order to be registered according to the requirements of Chapter Six, Section VI and to be evaluated for compliance with the dose limits.

(2) The medical surveillance of occupationally exposed workers, including the assessment of their fitness for the assigned work, shall be performed by medical practitioners of the National Centre for Radiobiology and Radiation Protection and by healthcare establishments which comply with the requirements stipulated in the Regulation under Article 65, paragraph 1, point 4 of the Health Act.

(3) The medical surveillance under paragraph 2 shall be performed in accordance with the requirements of Chapter Six, Section IX and the Regulation under Article 65, paragraph 1, point 4 of the Health Act.

Section IV
Qualified Expert in Radiation Protection

Article 25. (1) The qualified experts in radiation protection shall be entrusted to give recommendations, consultations and opinion as well as to perform analyses and assessments. They shall be entitled to provide the undertakings with competent advice regarding the observation of the legal obligations connected with occupational and public exposure and provision of the radiation protection in planned, emergency and existing exposure situations.

(2) The advice of the qualified expert in radiation protection shall cover where relevant, but not limited to, the following:

1. optimisation and establishment of appropriate dose constraints;

2. construction of new facilities and acceptance into service of new or modified sources of ionising radiation in respect of engineering aspects, design features, safety features and warning devices relevant to radiation protection;

3. classification of controlled and surveillance areas and determination of their borders;

4. categorisation of professionally exposed workers;

5. workplace monitoring programs and individual dosimetric monitoring, means for individual dosimetry;

6. appropriate radiation monitoring instrumentation;

7. quality assurance;

8. environmental monitoring programs;

9. arrangements for radioactive waste management;

10. arrangements for prevention of accidents and incidents;

11. preparedness and response in emergency exposure situations;

12. training and retraining programs for occupationally exposed workers;

13. investigation and analysis of accidents and incidents and appropriate remedial actions;

14. employment conditions for pregnant and breastfeeding workers;

15. preparation of appropriate documentation such as prior risk assessments and written procedures.

(3) The qualified experts in radiation protection shall, where appropriate, cooperate their activities with medical physics expert.

(4) The qualified experts in radiation protection may be assigned tasks of radiation protection officers in undertakings.

(5) The recognition of vocational qualification of the qualified experts in radiation protection shall be performed according to the procedure established by the Regulation on the Terms and Procedure for Obtaining Vocational Qualification and on the Procedure for Issuing Licenses for Specialised Training and Individual Licenses for Use of Nuclear Energy.

Section V
Radiation protection officer

Article 26. (1) The radiation protection officers shall be designated by an order of the respective undertaking, and shall be entrusted to undertake functions and obligations in respect of radiation protection supervision and to perform relevant radiation protection tasks.

(2) The number of the radiation protection officers under paragraph 1 shall be determined by the undertaking depending on the specificity and complexity of the activity.

(3) The undertakings shall provide the radiation protection officers with the technical means necessary to carry out their tasks. The radiation protection officers are entitled to report directly to the manager of the respective unit for all found violations and irregularities concerning radiation protection.

(4) The employers of outside workers shall designate radiation protection officers, as necessary, to exercise supervision or perform relevant radiation protection tasks related to the protection of their workers.

(5) Depending on the nature of the activity, the tasks of the radiation protection officer designated by the undertaking may include the following:

1. ensuring that the work with ionising radiation is carried out in accordance with the internal requirements and rules established by the undertaking;

2. supervision of the implementation of the workplace monitoring programs;

3. maintaining adequate records in respect of accounting and control of the sources of ionising radiation;

4. carrying out periodic assessment of the radiation protection conditions and assessment of safety systems related to the sources of ionising radiation in use;

5. organising the implementation of individual dosimetric monitoring programs;

6. organising the implementation of health surveillance programs;

7. providing the new workers with appropriate introductions in terms of internal rules and procedures;

8. preparing work plans, giving statements and comments in response to work plans;

9. presenting to the manager of the respective unit reports and statements regarding the state of radiation protection;

10. participating in the arrangements for prevention, preparedness and response to emergency exposure situations;

11. providing information and training to occupationally exposed workers;

12. maintaining contacts with the qualified experts in radiation protection.

(6) The individuals performing the function of a radiation protection officer must hold an individual license issued in accordance with the Regulation on the Terms and Procedure

for Obtaining Vocational Qualification and on the Procedure for Issuing Licenses for Specialised Training and Individual Licenses for Use of Nuclear Energy.

(7) The tasks of the radiation protection officer may be carried out by a radiation protection unit established by the undertaking, the implementation of these tasks may be also assigned to qualified expert in radiation protection.

Chapter Four
JUSTIFICATION OF PRACTICES

Section I
Justification of practices resulting in exposure to ionising radiation

Article 27. (1) New types of practices resulting in exposure to ionising radiation shall be justified before being adopted taking into account expected economic, social and other benefits. In such cases it must be demonstrated that the benefits expected outweigh the health detriment that may be caused to exposed individuals.

(2) In the identification of new circumstances, evidence or important information affecting the efficacy of existing practices and their potential harmful consequences, and in case of introduction of new technologies, techniques or methods whose purpose is like that of existing practices, review and reassessment in terms of justification of these practices shall be carried out.

(3) The justification of new or existing practices shall be performed by the undertaking in its capacity as an applicant in the framework of the procedures envisaged for the purposes of implementation state regulation under the Act on the Safe Use of Nuclear Energy.

(4) Practices involving occupational and public exposure shall be justified as a type of practice taking into account both categories of exposed individuals.

(5) The activities under Article 17 of the Act on the Safe Use of Nuclear Energy, which are prohibited, shall be considered as unjustified practices.

Section II
Practices involving consumer products

Article 28. (1) Any person aiming to manufacture or import consumer products the intended use of which is likely to be a new class or type of practice, shall provide the Chairperson of the Nuclear Regulatory Agency and the Minister of Health with all relevant information as to:

1. the intended use and technical characteristics of the product;

2. the manner and means of securing the product;

3. the dose rate at relevant distances during the use of the product, including the dose rate at a distance of 0,1 m from any accessible surface;

4. expected doses to the individuals supposed to regularly use the product.

(2) (Amended, SG No. 110/2020) The Chairperson of the Nuclear Regulatory Agency and the Minister of Health shall evaluate the information under paragraph 1 from radiation protection point of view, including assessing whether:

1. the performance of the consumer product justifies its intended use;

2. the design of the consumer product is adequate in order to minimise exposures in normal use and the likelihood and consequences of misuse or accidental exposures;

3. the technical and physical characteristics of the product require imposition of special conditions in terms of its intended use;

4. the product is adequately designed so that to satisfy the criteria for exemption from regulation;

5. the product is of an approved type and does not necessitate specific precautions for disposal when no longer in use;

6. the product is appropriately labelled and suitable documentation is provided to the consumer with instructions for proper use and disposal.

(3) The Minister of Health in coordination with the Chairperson of the Nuclear Regulatory Agency is entitled to prohibit the sale or offering of consumer products if their intended use is not justified or does not fulfil the criteria for exemption from regulation under Chapter Five.

(4) In the cases covered by paragraph 3, the Minister of Health shall inform the European Commission of the actions which have been taken, indicating the reasons for these actions.

Section III
Practices involving deliberate exposure for non-medical imaging purposes

Article 29. (1) Practices related to intentional non-medical imaging exposure involving the use of radiological medical equipment may be performed for the following purposes:

1. radiological health assessment for employment purposes, immigration purposes, or insurance purposes;

2. radiological evaluation of the physical development of children and adolescents with a view to a career in sports, dancing, etc.;

3. radiological age assessment;

4. use of ionising radiation for identification of concealed objects within the human body.

(2) Practices related to intentional non-medical imaging exposure that do not involve the use of radiological medical equipment may be performed for the following purposes:

1. detection of concealed objects on or attached to the human body;

2. detection of concealed humans as part of cargo screening in checkpoints controlled by specialised state bodies;

3. legal or security purposes and prevention of illegal trafficking.

Article 30. All practices under Article 29 involving non-medical imaging exposure without individual justification shall be justified in advance, such justification may include:

1. the specific objectives of the procedure and the characteristics of the exposed individual;

2. the circumstances warranting non-medical imaging exposure without individual justification of each exposure which shall be subject to regular review.

Article 31. (1) The justification under Article 30 shall be submitted to the Minister of Health for an opinion.

(2) The requirements of the Regulation under Article 67, paragraph 2 of the Health Act shall be applied to procedures involving the use of radiological medical equipment. Hospital managers have to introduce specific protocols which correspond to the objectives of the exposure and required image quality, establishing for this purpose specific diagnostic reference levels;

(3) In the case of procedures which do not involve the use of radiological medical equipment, the manager of the respective unit shall introduce specific protocols which correspond to the objectives of the exposure and required image quality, establishing for this

purpose specific reference levels taking into account the dose limits for members of the public;

(4) In the case of non-medical imaging exposure under Article 30, exposed individuals are entitled to receive all relevant information.

Section IV
Identification of activities involving increased exposure to natural radionuclides

Article 32. In the case of activities involving materials containing increased concentrations of natural radionuclides (NORM), leading to exposure which cannot be disregarded from a radiation protection point of view, the requirements and measures for radiation protection and for control and restriction of the exposure as defined in the Regulation under Article 26, paragraph 5 of the Act on the Safe Use of Nuclear Energy shall apply.

Chapter Five
RELEASE FROM REGULATORY CONTROL

Section I
Release from regulatory control of activities

Article 33. (1) (Amended, SG No. 110/2020) Not subject to regulation under the Act on the Safe Use of Nuclear Energy shall be justified activities which are inherently safe or radioactive materials originating from regulated activities for which it has been demonstrated that the following dose criteria are met:

1. the effective dose expected to be received by any member of the public due to the exempted practice or radioactive material is of the order of 10 μSv or less in a year.

2. the effective dose expected to be received by any member of the public due to the exempted practice or radioactive material in scenarios with low probability of occurrence is of the order of 1 mSv or less in a year.

(2) For justified activities and radioactive materials originating from regulated activities that meet the dose criteria under paragraph 1 it is presumed that the radiation risk for the public is negligible.

Article 34. (1) (Amended, SG No. 110/2020) Not subject to regulation under the Act on Safe Use of Nuclear Energy shall be justified activities involving:

1. small quantities of radioactive material (less than 1000 kg), containing artificial radionuclides when at least one of the following conditions is met:

a) at any time, for each of the radionuclides the sum of the ratios of their activity values and the corresponding exemption values (activity values) listed in Annex No. 3, Table 1, is not greater than one;

b) at any time for each of the radionuclides the sum of the ratios of their specific activity values and the corresponding exemption values (specific activity values) listed in Annex No. 3, Table 1, is not greater than one;

2. large quantities of radioactive material (more than 1000 kg) containing artificial radionuclides for which at any time the sum of the ratios of the specific activity value of each radionuclide to the corresponding exemption values listed in Annex No. 3, Table 2 does not exceed one.

(2) The exemption levels for activities and radioactive materials defined in Annex No. 3 correspond to dose criteria defined in Article 33, paragraph 1.

(3) (Amended, SG No. 110/2020) Activities involving small quantities of radioactive material or low specific activities which are comparable to the exemption levels set out in Annex No. 3, Table 1 and Table 2 shall be presumed to be inherently safe.

(4) (New, SG No. 110/2020) Activities involving quantities of radioactive material or specific activities below the exemption levels specified in Annex № 3, Table 1 and Table 2, shall be presumed to have negligible radiation risk and shall not be subject to further consideration except in the case of specific exposure pathways (for example through drinking water or from building materials).

(5) (New, SG No. 110/2020) Justified activities involving radioactive material containing artificial radionuclides above the levels specified in Annex № 3, Table 1 and Table 2 may be exempted from the notification and control requirements under the Act on Safe Use of Nuclear Energy when it is established that:

1. the radiation risk is negligible;
2. the activity is inherently safe;
3. the individuals carrying out the activity are not classified as occupationally exposed workers.

Article 35. (1) Activities with the following sources of ionising radiation for which the radiation risk is presumed to be negligible shall be exempted from regulation:

1. apparatus containing a sealed source, provided that:

a) the apparatus is of a type approved by the competent state authorities;

b) the apparatus does not cause, in normal operating conditions, a dose rate exceeding 1 μSv/h at a distance of 0,1 m from any accessible surface;

c) the conditions for recycling or disposal of the sealed source have been specified by the competent state authorities;

2. any cathode ray tube intended for the display of visual images, or other electrical apparatus operating at a potential difference not exceeding 30 kV; and it does not cause, in normal operating conditions, a dose rate exceeding 1 μSv/h at a distance of 0,1 m from any accessible surface.

3. any electrical apparatus generating ionising radiation (except for the cases under point 2) provided that:

a) it is of a type approved by a competent state authority;

b) it does not cause, in normal operating conditions, a dose rate exceeding 1 μSv/h at a distance of 0,1 m from any accessible surface.

(2) The activities under paragraph 1 shall not be subject to control under the Act on the Safe Use of Nuclear Energy and no notification is required for them.

Article 36. (1) (Amended, SG No. 110/2020) Activities involving insignificant radiation risk under the Act on Safe Use of Nuclear Energy are considered to be those activities for which it has been established that:

1. the activity is justified and the radiation risk is not negligible;
2. the safety of the facility is clearly ensured by its design and the construction of the equipment in order to restrict the exposure to a level which is as low as reasonably achievable;
3. the operational procedures for carrying out the activity are easily feasible and the requirements for safety at work are not complicated;
4. there is no data from the operational experience showing significant problems related to radiation protection.

(2) The activities involving insignificant radiation risk shall be subject only to notification and control of compliance with the radiation protection requirements applicable to them.

Section II
Release from regulatory control of materials

Article 37. (1) Radioactive materials originating from regulated activities for which disposal, recycling or reuse is intended, shall be subject to regulation under the Act on the Safe Use of Nuclear Energy.

(2) Upon request by the licensee, radioactive materials referred to in paragraph 1 may be released (cleared) from regulatory control by the Chairperson of the Nuclear Regulatory Agency, on a case-by-case basis, following the requirements under Article 15, paragraph 7 of the Act on the Safe Use of Nuclear Energy.

(3) The licensee under paragraph 2 shall justify the conformity of certain radioactive material subject to clearance with the dose criteria and clearance levels under articles 38 and 39.

(4) Activities with released from regulatory control radioactive materials shall not be subject to regulation under the Act on the Safe Use of Nuclear Energy.

(5) Deliberate mixing and dilution of radioactive materials for the purpose of reduction of the specific activity to the levels for release from regulatory control under Article 34 shall be prohibited. In specific circumstances, the Chairperson of the Nuclear Regulatory Agency may authorise mixing of radioactive and non-radioactive materials for the purposes of reuse or recycling.

Article 38. (1) Radioactive materials originating from regulated activities may be released from regulatory control unconditionally if it has been proven that the sum of the ratios of the specific activities of each radionuclide from artificial origin in a given material to the respective clearance level specified in Annex No. 3, Table 2 does not exceed one.

(2) Radioactive materials with enhanced content of natural radionuclides may be released from regulatory control unconditionally if it has been proven that the specific activity of a given material in respect of each of the natural radionuclides contained in it does not exceed the respective clearance level specified in Annex No. 3, Table 3.

(3) Radioactive material with enhanced content of natural radionuclides containing also radionuclides of artificial origin may be released from regulatory control unconditionally in case both conditions under paragraphs 1 and 2 are met at one time.

(4) Radioactive material released from regulatory control under paragraphs 1, 2 and 3 shall not be subject to control under the Act on the Safe Use of Nuclear Energy and may be used without restrictions regarding its origin, nature and field of application.

(5) The clearance levels for release from regulatory control of radioactive materials shall not apply to:

1. discharges to the environment of airborne or liquid radioactive materials originated from authorised activities;

2. residues from industrial activities related to processing of materials with enhanced content of natural radionuclides.

(6) Where residues under paragraph 5, point 2 are used as ingredients in building materials, the requirements of Article 116 shall apply.

Article 39. (1) Radioactive materials originated from regulated activities that do not meet the requirements for unconditional clearance in accordance with Article 38, paragraph 1,

may be released from regulatory control conditionally if it is demonstrated that the dose criteria under Article 33, paragraph 1 are met.

(2) For the purposes of conditional clearance of radioactive materials originating from regulated activities, the applicant shall:

1. identify the specific conditions and circumstances for subsequent management of the radioactive material subject to clearance, taking into account the characteristics and intended purposes of the material and the way and field of its use;

2. justify that the subsequent activities involving the radioactive material subject to clearance will satisfy the dose criteria specified in Article 33, paragraph 1, under the conditions and circumstances stipulated in point 1;

3. establish a practical procedure to set up the characteristics of the radioactive material and the ways of identifying conformity with the relevant clearance criteria.

(3) Metals originated from regulated activities may be released from regulatory control conditionally, for subsequent recycling, on the condition that the sum of the ratios of the specific activity of each present radionuclide to the specific activity of the corresponding radionuclide listed in Annex No. 3, Table 4 does not exceed one. For each individual case, the applicant shall justify maximum permitted levels of surface contamination for the metals which are subject to clearance.

(4) New, SG No. 110/2020) Radioactive material containing increased concentration of natural radionuclides having specific activity exceeding the levels set out in Annex № 3, Table 3 may be released from regulatory control if the expected effective dose for a member of a public received as a result of subsequent activities involving this material is of the order of 1 mSv or less in a single year, taking into account all possible exposure pathways.

(5) (Former 4, Supplemented, SG No. 110/2020) The Chairperson of the Nuclear Regulatory Agency, in coordination with the Minister of Health, shall establish by an order issued under Article 15, paragraph 7 of the Act on the Safe Use of Nuclear Energy restrictive conditions for the use of radioactive materials released from regulatory control under paragraphs 1 and 4 and for released metals under paragraph 3.

(6) (Former 5, SG No. 110/2020) The delivery of any batch of radioactive material or metals subject to conditional clearance shall be accompanied by a document certifying the radionuclide composition and surface contamination levels of the respective batch.

Article 40. (1) The undertakings shall establish and maintain a documented system for the management of radioactive materials which are intended to be cleared from regulatory control, including information on their processing, decontamination, storage, transportation, measurement, delivery, traceability and recording.

(2) The determining of the activity and specific activity of the radionuclides in radioactive materials subject to clearance shall be carried out by accredited testing laboratories or control bodies. The test results shall be attached to the application for clearance of the respective material.

(3) On the basis of the documents under paragraph 2, the Chairperson of the Nuclear Regulatory Agency shall issue an order under Article 15, paragraph 7 of the Act on the Safe Use of Nuclear Energy for clearance of the radioactive material.

Chapter Six
RADIATION PROTECTION IN OCCUPATIONAL EXPOSURE

Section I
Operational radiation protection

Article 41. (1) The undertakings shall ensure the operational radiation protection of the occupationally exposed workers, students and apprentices, evaluate and apply necessary measures for radiation protection and perform internal control over the state of radiation protection.

(2) For outside workers, the responsibilities of the undertaking and the employer are specified in Section XII of this Chapter.

(3) The employers shall have the right to receive information on the exposure of their employees engaged as outside workers by an undertaking or by another employer.

(4) The undertakings, the employers of outside workers and self-employed individuals shall ensure a clear allocation of the responsibilities in respect of the operational radiation protection in any situation of planned, existing or emergency exposure, including the protection of:

1. emergency workers;

2. workers involved in remediation of contaminated areas, buildings and other constructions;

3. workers in workplaces involving a possibility of exposure to enhanced radon concentrations, in the situations specified in Article 95.

Article 42. The undertakings shall ensure operational radiation protection of the occupationally exposed workers by the application of technical and organisational measures, which are based on:

1. prior evaluation in order to identify the nature and magnitude of the radiation risk to occupationally exposed workers;

2. optimisation of radiation protection and limitation of the exposure in all working conditions, including occupational exposure as a result of activities involving medical exposure;

3. classification of occupationally exposed workers into categories;

4. classification of areas and premises, classification of workplaces and access regimes;

5. radiation monitoring in the respective areas and premises and in the workplaces, individual dosimetric monitoring of the occupationally exposed workers, when and as necessary;

6. initial and follow-up regular medical surveillance of occupationally exposed workers;

7. selection and training of occupationally exposed workers, maintenance of their qualification, specialised training and instructions;

8. physical barriers to prevent uncontrolled spread of radioactive material and to ensure safety and security of sources of ionising radiation.

Article 43. (1) The undertakings shall ensure that the operational radiation protection of the apprentices and students aged 18 years or over, working with sources of ionising radiation for training purposes, is equivalent to that of occupationally exposed workers of category A or B as appropriate.

(2) The undertakings shall ensure that the operational radiation protection of apprentices and students aged between 16 and 18 years, working with sources of ionising radiation for training purposes, is equivalent to that of occupationally exposed workers of category B.

Article 44. The undertakings shall seek advice from qualified experts in radiation protection, within their areas of competence, on the issues below in case they are relevant to the activities of the undertaking:

1. assessment and testing of systems, equipment and protective devices and measuring instruments intended for radiation protection purposes;

2. prior reviewing of the design of facilities and equipment from radiation protection point of view;

3. regular review of the effectiveness of facilities, devices and equipment used for the purposes of radiation protection;

4. acceptance into service of new or modified sources of ionising radiation and assessment from radiation protection point of view;

5. calibration of measuring instruments and checking that they are serviceable and correctly used.

Article 45. (1) For the purposes of establishing access regimes, classification of workplaces into different areas shall be made on the basis of an assessment of the expected annual doses and the probability and magnitude of potential exposures.

(2) The access regimes shall be appropriate to the nature and specific characteristics of the facilities and sources of ionising radiation maintained by the undertaking and shall take into account the nature and extent of the radiation risks specific for certain workplaces in the undertaking.

(3) The undertakings shall establish, where appropriate, controlled and surveillance areas. The requirements and method of determining of controlled and surveillance areas are specified in Sections III and IV of this Chapter.

(4) The undertakings shall review and assess the workplace conditions in the controlled and surveillance areas from radiation protection point of view.

Section II
Arrangements in workplaces

Article 46. For the purposes of radiation protection, the undertakings shall establish and apply internal working procedures involving all workplaces where occupationally exposed workers are liable to receive under normal conditions an individual effective dose greater than 1 mSv per year or an equivalent dose more than 15 mSv per year for the lens of the eye or more than 50 mSv per year for the skin and extremities.

Article 47. Situations in workplaces where the annual average radon activity concentration in air is higher than 300 $Bq.m^{-3}$ and where exposed workers are liable to receive an effective dose above 6 mSv per year, shall be managed as planned exposure situations and appropriate radiation protection measures shall be applied. For workplaces, where annual average radon activity concentration in air is not higher than 300 $Bq.m^{-3}$ and exposed workers are liable to receive an effective dose below 6 mSv per year, the radon exposure shall be examined and evaluated.

Article 48. (1) Any undertaking operating an aircraft where the individual effective dose to the crew is liable to be above 1 mSv per year, shall take appropriate measures, in particular:

1. to assess the exposure of the crew concerned;

2. to take into account the assessment of the projected exposure when organising working schedules with a view to reduce the doses of highly exposed crew;

3. to inform the air crew concerned of the health risks their work involves and their individual dose;

4. to apply the requirements under Article 17, paragraphs 1 - 3 to pregnant air crew.

(2) For an aircraft where the effective dose to the crew from cosmic radiation is liable to exceed 6 mSv per year, radiation protection measures shall be applied.

Article 49. (1) For workplaces involving activities with naturally occurring radioactive material where the exposure of workers is liable to exceed an effective dose of 6 mSv per year, the radiation protection measures required for occupationally exposed workers shall be applied.

(2) For workplaces where the effective dose to workers is less than or equal to 6 mSv per year, the requirements of the Regulation on Radiation Protection for Activities Involving Materials with Naturally Occurring Radionuclides, adopted by Decree № 229 of the Council of Ministers of 2012 (SG, issue 76 of 2012), shall apply.

Section III
Controlled areas

Article 50. (1) For the purposes of radiation protection, controlled areas shall be determined in the nuclear facilities and facilities with sources of ionising radiation, which shall be subject to the following requirements:

1. the undertakings shall delineate the controlled area and the access to this area shall be restricted; specific arrangements shall be made, including for the access and exit of individuals and goods, and for monitoring the contamination for the purpose of prevention the spread of radioactive substances.

2. the undertakings shall organise radiological surveillance of the workplace and individual dosimetric monitoring in terms of the activities in controlled areas, taking into account the nature and extent of radiation risks;

3. the undertakings shall provide warning and indication signs, inscriptions or other markings indicating the type and purpose of the premises and equipment in the controlled areas, and on the nature and characteristics of the sources of ionising radiation as appropriate.

(2) Any undertaking shall create, maintain, keep up to date and apply internal documentation and rules in terms of ensuring radiation protection during activities in the controlled area, which shall include:

1. instruction to ensure safe operation of the sources of ionising radiation, including technical maintenance, repair works and testing of installations and equipment in the facility;

2. radiation protection instruction (having a type content specified in Annex No. 4);

3. internal emergency plan, including fire protection and emergency safety (having a type content specified in Annex No. 5);

4. organisation of work with sources of ionising radiation, access to controlled area, allocation of duties and responsibilities between the facility employees;

5. procedures/instructions for the acquisition, storage, transmitting, accounting and control of sources of ionising radiation;

6. procedures/instructions for collecting, sorting, processing, transmitting, storage and keeping records of generated radioactive waste;

7. admission procedures for workers to operate autonomously with sources of ionising radiation, conducting of initial, current and periodic instructions for work in the controlled area, training and verification of radiation protection knowledge;

8. terms and conditions of using personal protective equipment when operating in the controlled area and for maintaining personal radiation hygiene.

Article 51. (1) The controlled area boundaries shall be grounded and defined in the course of the authorisation process for the activities to be carried out by the undertaking taking into account the radiation dose rates on the premises specified in the design and the projected doses from internal and external exposure under normal operating conditions in the controlled area.

(2) The controlled area boundaries and its entrances, including premises, workplaces and equipment, shall be suitably marked. Standardised format of a radiation warning symbol is shown in Annex No. 6.

(3) In order to prevent unauthorised access to controlled area, physical barriers shall be used and/or other technical means and administrative procedures shall be applied, corresponding to the type of the facility and sources of ionising radiation and to the radiation risk.

Article 52. (1) The undertakings shall exercise control over the application of the access regime and the activities performed in controlled areas, access and exit of goods and for monitoring the radioactive contamination, including in buildings and premises bordering the controlled area of the relevant facilities.

(2) Depending on the specific case, the workplaces shall be equipped with written work instructions, safe operation procedures, personal protective equipment, radiation monitoring and decontamination means.

(3) Places suitable for changing of clothes and storage of working and personal clothing of the personnel shall be arranged in the controlled area of a nuclear facility or a facility with unsealed sources of ionising radiation, as well as sanitary checkpoints and/or sanitary locks in accordance with the requirements under Article 141, paragraph 2.

(4) Control on the surface radioactive contamination of the body and clothes of the workers and removal of objects and materials shall be organised at the exit of the controlled area.

Article 53. (1) The radiation protection measures applied to work activities in controlled areas and intended for the prevention of spread of potential radioactive contamination shall correspond to the scope and scale of the type of the equipment and sources of ionising radiation and the radiation risk connected with the respective activities.

(2) (Amended, SG No. 110/2020) The specific radiation protection measures and requirements envisaged in Chapter Eleven shall apply to work activities performed in controlled areas of nuclear facilities and facilities with unsealed sources.

Article 54. (1) The undertakings shall periodically analyse and assess the working conditions in the controlled areas and, if necessary, take additional measures for the radiation protection and modification of the boundaries of the controlled areas, and also for the classification of working premises. The undertakings shall notify the Chairperson of the Nuclear Regulatory Agency about these actions.

(2) In deciding whether to change the boundaries of the controlled area and develop plans for additional radiation protection measures, the undertaking shall be consulted by qualified experts in radiation protection.

(3) Each undertaking shall notify the Chairperson of the Nuclear Regulatory Agency of any change in the boundaries of the controlled areas and this fact shall be reflected in the licence issued for the respective activity.

Article 55. The undertakings shall exercise control over the compliance with the radiation protection requirements established for the controlled areas by the respective internal documents (instructions, rules, orders, procedures) and by the license and permit conditions. In the event of identified deviations and infringements, corrective measures shall be taken and the Chairperson of the Nuclear Regulatory Agency shall be informed according to the obligations under the license or permit conditions.

Article 56. (1) The undertakings shall organise systematic radiological monitoring of the working environment within the controlled area and shall inform the workers on the obtained results.

(2) The radiological monitoring shall include measurement and assessment of the radiological parameters relevant for the workrooms which, depending on the case, shall comprise the measurement of:

1. external dose rate, indicating the nature and quality of the radiation in question (gamma-irradiation, X-rays, neutron radiation);

2. particle flow density (beta-particles, alpha-particles, electrons, neutrons);

3. volume activity of radioactive gases and aerosols in air including determination the radionuclide composition.

4. surface radioactive contamination including determination the radionuclide composition.

(3) The undertakings shall keep records of radiation monitoring results. The results may be used for the assessment of the individual doses received by the occupationally exposed workers.

(4) If this is provided for in the relevant licence or permit conditions, the undertakings shall submit the radiation monitoring results to the Chairperson of the Nuclear Regulatory Agency.

Article 57. The undertakings shall perform testing and assessment the state of the systems and equipment for the purposes of radiation protection. If this is provided for in the relevant licence or permit conditions, the tests results shall be made available to the Chairperson of the Nuclear Regulatory Agency.

Article 58. In deciding whether to plan and apply measures for the optimisation of the radiation protection, the undertakings shall be consulted by qualified experts in radiation protection.

Section IV
Surveillance areas

Article 59. For the purposes of radiation protection, surveillance areas shall be determined in the nuclear facilities and facilities with sources of ionising radiation, which shall be subject to the following requirements:

1. the undertaking shall organise radiological surveillance of the workplace in the surveillance area taking into account radiation risks;

2. if appropriate, the undertaking shall:

a) apply signs, inscriptions or other markings indicating the type and designation of the premises and equipment in the surveillance area, and the type and potential danger of the sources of ionising radiation;

b) create and apply working instructions, rules and/or administrative procedures for safe operation in the surveillance area, appropriate to the radiation risk associated with the sources of ionising radiation.

Article 60. (1) The surveillance area boundaries shall be determined in the course of the authorisation process involving nuclear facilities and facilities with sources of ionising radiation taking into account the nature and extent of radiation risks.

(2) In the process of defining the boundaries of the surveillance area, and in the process of making changes affecting buildings, premises, or other immovable property located outside the boundaries of the surveillance area of the nuclear facility or facility with sources of

ionising radiation, the undertaking shall seek an advice of a qualified expert in radiation protection.

Article 61. (1) The undertakings shall perform systematic radiation monitoring in the surveillance area, which, according to the specific case, shall cover measurement and assessment of the radiological parameters of the working environment in the surveillance area.

(2) The radiation protection measures which are mandatory for the controlled areas should not apply to the surveillance areas.

Article 62. The undertakings shall periodically perform analysis and assessment of the working conditions in surveillance areas and, where necessary, shall introduce internal working procedures corresponding to the radiation risk associated with the sources of ionising radiation and activities performed.

Section V
Categorisation of exposed workers

Article 63. For the purposes of radiation monitoring, individual dosimetric monitoring and medical surveillance, a distinction shall be made between two categories of professionally exposed workers:

1. category A workers: those workers who are liable to receive an effective dose greater than 6 mSv per year or an equivalent dose greater than 15 mSv per year for the lens of the eye or greater than 150 mSv per year for skin and extremities;

2. category B workers: those workers who are not classified as category A workers.

Article 64. The undertakings or, in the case of outside workers, the employers, shall decide on the categorisation of the workers prior to their taking up work that may give rise to exposure, and shall regularly review this categorisation on the basis of working conditions and medical surveillance of occupationally exposed workers. The categorisation shall also take into account the potential exposure.

Section VI
Individual monitoring in occupational exposure

Article 65. (1) The undertakings or, in the case of outside workers, the employers, shall ensure that category A occupationally exposed workers are systematically monitored by appropriate individual dosimeters in order the doses from external exposure to be determined.

(2) In cases where category A workers are liable to receive significant internal exposure or significant exposure of the lens of the eye or extremities, an adequate system for monitoring of such exposures shall be set up.

Article 66. (1) The undertakings shall organise and carry out dosimetric monitoring for category B occupationally exposed workers which shall be sufficient in order to confirm that the workers in question are correctly categorized in category B.

(2) Individual dosimetric monitoring for category B workers shall be performed whenever such monitoring is required by the state health control authorities under the Health Act.

Article 67. (1) Individual dosimetric monitoring of occupationally exposed workers of category A and B shall be implemented in correspondence with the requirements of the Regulation under Article 65, paragraph 1, point 3 of the Health Act.

(2) The doses to occupationally exposed workers shall be determined on the basis of the readings of personal dosimeters, which are of approved type and have undergone metrological control in accordance with the Measurements Act.

(3) The state health control authorities shall control the doses received by occupationally exposed workers in the undertakings;

Article 68. In cases where individual measurement of doses is not possible or inadequate, the individual dosimetric monitoring of the occupationally exposed workers of category A and B shall be exercised:

1. by indirect means based on:

a) the results of the radiation monitoring of the workplaces;

b) an assessment arrived at from individual measurements of external doses made on other exposed workers operating under the same conditions as the workers without individual dosimeters;

2. by indirect means based on analytical calculation methods approved by the National Centre for Radiobiology and Radiation Protection.

Article 69. In cases where category A occupationally exposed workers are liable to receive significant internal exposure or significant exposure of the lens of the eye or extremities, the undertakings, in coordination with a qualified expert in radiation protection, shall identify the occupationally exposed workers and shall determine the ways and methods of control of exposure.

Article 70. In the case of emergency occupational exposure, the undertakings shall organise an evaluation of the effective and equivalent doses from external and internal exposure.

Section VII
Radiation monitoring programs

Article 71. (1) The undertakings shall develop, approve and implement programs for radiation monitoring of the working environment and on the basis of the results shall make an assessment of the occupational exposure.

(2) In the preparation of radiation monitoring programs, the radiation characteristics of working environment subject to monitoring have to be determined as well as the frequency of planned measurements and monitoring points, the type and characteristics of the intended measuring instruments (ranges, accuracy, features), criteria to ensure compliance between measured values and established reference levels, deadlines and persons responsible for the implementation of the programs.

(3) In the preparation of the programs under paragraph 2, the undertakings shall seek advice from a qualified expert in radiation protection.

(4) (New, SG No. 110/2020) In cases where the radiation monitoring programs under paragraph 1 cannot be implemented by the undertaking, their implementation may be outsourced to outside persons registered under Article 56, paragraph 3 of the Act on the Safe Use of Nuclear Energy to carry out the respective measurements.

Article 72. (1) The radiation monitoring programs to be performed in nuclear facilities shall be coordinated with the National Centre for Radiobiology and Radiation Protection.

(2) (Repealed, SG No. 110/2020)

Article 73. (1) (Amended, SG No. 110/2020) For the purposes of the implementation of the programs under Article 71, paragraph 1, the undertakings shall conduct metrological control of ionising radiation measuring equipment according to the requirements of the Measurements Act and the regulations for its implementation, except the cases under Article 71, paragraph 4, where the measuring instruments are provided by outside persons.

(2) The results in respect of working environment radiation monitoring shall be documented and stored by the undertakings and shall be provided to the competent authorities at request.

Section VIII
Recording and reporting radiation monitoring and individual dosimetric monitoring results

Article 74. (1) The undertakings and, in the case of outside workers, the employers, shall document the results of the individual dosimetric monitoring performed for each category A worker, and for each category B worker subject to monitoring.

(2) The undertakings and, in the case of outside workers, the employers, shall keep records on the results of the workplace radiation monitoring which have been used for the assessment of the individual doses, including the reports on the circumstances and actions taken in case of emergency, planned special exposure or emergency occupational exposure. In the course of documenting the individual dosimetric monitoring results, the individual doses obtained shall be recorded separately.

(3) The dosimetry services which monitor the occupational exposure shall register and keep records of the doses on category A and category B workers and shall provide recorded data to the undertakings and employers of outside workers.

Article 75. (1) The undertakings, the employers of outside workers and/or the dosimetry services are obliged to inform the occupationally exposed workers, at least once a year, on the results of the individual dosimetric monitoring and their identification in the register under Article 71, paragraph 1 of the Health Act.

(2) (New, SG No. 110/2020) The identification under paragraph 1 shall include at least:

1. personal data of the professionally exposed worker namely:

a) full name;

b) gender and citizenship;

c) date of birth and personal identity number (in case of a foreign citizen - personal identification number);

2. data on the undertaking or the employer of outside workers:

a) company name, headquarters address and unique identification code;

b) the start date of the individual dosimetric monitoring and the end date, if any;

c) professionally exposed worker category according to Article 63.

(3) (Former 2, amended, SG No. 110/2020) The information entered into the register under paragraph 1 shall be processed and stored in accordance with the requirements under the Regulation referred to in Article 71, paragraph 2 of the Health Act.

Article 76. (1) The undertakings and the employers of outside workers shall provide the exposed individuals with the individual dosimetric monitoring results, including measurement results used for the assessment of received doses or dose assessment results obtained on the basis of workplace radiation monitoring.

(2) In the case of emergency occupational exposure, the undertakings and the employers of outside workers shall immediately inform the National Centre for Radiobiology and Radiation Protection, the Chairperson of the Nuclear Regulatory Agency and the affected individuals of the received doses calculated on the basis of the indications of the personal dosimeters or on the basis of an assessment of radiation measurement results.

(3) The information under paragraph 1 and 2 shall also be provided to the persons performing health surveillance in order to identify the health status of the workers and their medical fitness for the tasks assigned to them in accordance with the Regulation under Article 65, paragraph 1, point 4 of the Health Act.

Section IX
Medical surveillance of occupationally exposed workers

Article 77. (1) The occupationally exposed workers are entitled to medical surveillance aimed at identifying their health state and their medical fitness for the tasks assigned to them in accordance with the Regulation under Article 65, paragraph 1, point 4 of the Health Act.

(2) The medical surveillance of category A workers shall be mandatory.

Article 78. (1) The medical surveillance shall include initial and periodic medical examinations.

(2) The initial medical examination shall be performed for individuals intending to carry out activities as category A or category B workers in the respective undertaking in order their medical fitness for the work to be determined.

(3) The periodic medical examination shall be performed at least once a year, in order to determine whether the respective workers are still in a health condition allowing them to perform the assigned duties.

(4) At the discretion of the physician who performed the medical fitness assessment, the periodic medical examination shall be performed more often or shall continue after cessation of work according to the procedure specified in the Regulation under Article 65, paragraph 1, point 4 of the Health Act.

Article 79. The undertakings shall not employ, or shall arrange other work outside environment with ionising radiation, in case the physician who performed the assessment of medical fitness has concluded that the respective employee should not work in environment with ionising radiation for a certain period of time.

Section X
Specially authorised exposures

Article 80 (1) In exceptional circumstances evaluated case by case, excluding emergencies, the Minister of Health in coordination with the Chairperson of the Nuclear Regulatory Agency may authorise, if a specific operation so requires, certain workers to

receive individual exposure doses exceeding the dose limits set out for occupational exposures.

(2) In the cases covered by paragraph 1, an effective dose of up to 50 mSv in any single year may be authorised provided that the average annual dose over any five consecutive years, including the years for which the limit has been exceeded, does not exceed 20 mSv.

Article 81. (1) Specially authorised exposures shall be authorised subject to following limitations and specific conditions:

1. only category A occupationally exposed workers may be subject to such exposures;
2. the exposures shall be authorised on a case-by-case basis, for a limited period of time, and for specific workplaces (zones);
3. it is not allowed the authorised doses for certain workers to be exceeded in each specific case of specially authorised exposure;
4. apprentices, students, pregnant workers, and breastfeeding workers shall be excluded from such exposures;
5. all cases involving specially authorised exposures and upcoming activities shall be justified by the undertakings before being authorised and shall be discussed with the workers to be engaged, with their representatives, with qualified experts in radiation protection and with the physician who performed the medical surveillance;
6. where specially authorised exposure is allowed, the workers shall be informed in advance of the expected doses, associated risks and actions necessary for the provision of radiation protection and for safe execution of the envisaged operations;
7. where specially authorised exposure is allowed, the workers shall confirm in writing and for any individual case that their participation is on a voluntary basis;
8. the doses resulting from specially authorised exposures shall be recorded separately in the documentation related to individual dosimetric monitoring and medical surveillance of the individuals concerned.

(2) The exceeding of dose limits as a result of specially authorised exposures shall not necessarily constitute a reason for excluding the workers concerned from their usual occupation or relocating them without their agreement.

Article 82. (1) In order to be authorised to perform specially authorised exposures of workers, the respective undertaking shall submit to the Minister of Health and the Chairperson of the Nuclear Regulatory Agency the following information:

1. justification of planned activities, the circumstances which require specially authorised exposure, specification of the actions, the time limit for their performance and the working areas;
2. a list of the workers to undertake the actions together with their written consent to perform them on a voluntary basis;
3. data on the doses of the workers to undertake planned actions and a document certifying their medical fitness for work with ionising radiation;
4. measures for the provision of radiation protection during planned actions;
5. other documents or information, if necessary.

(2) On the basis of the information and documentation under paragraph 1, the Minister of Health shall determine maximum permitted levels of the individual effective dose for each individual case of specially authorised exposure.

Article 83. (1) After completion of the actions or on a request at any time, the undertakings shall provide the workers subject to specially authorised exposure with relevant information on radiation doses received.

(2) Any occupationally exposed worker subjected to specially authorised exposure shall

have the right to terminate its participation in the actions by a written statement.

Section XI
Emergency occupational exposure

Article 84. (1) The doses to emergency workers authorised in case of emergency exposure situations shall remain, whenever possible, below the dose limits for occupationally exposed workers.

(2) For situations where the requirement under paragraph 1 is not feasible, the doses to emergency workers shall be limited by setting out reference levels above 20 mSv, provided the following conditions are met:

1. reference levels for emergency occupational exposure shall be set, as a general rule, below an individual effective dose of 100 mSv;

2. In case of an exceptional situation, in order to save life, prevent severe deterministic effects, or prevent catastrophic consequences with significant impact on humans and the environment, a reference level for an effective dose from external exposure of emergency workers may be set above 100 mSv, but not exceeding 500 mSv.

Article 85. (1) In the event of an emergency, the undertakings and the employers of outside workers shall ensure that emergency workers who are liable to undertake actions connected with prevention of accidents and mitigation of their consequences are clearly and comprehensively informed in advance of the associated health risks and necessary radiation protection measures.

(2) The emergency workers shall undertake activities which may lead to an effective dose above 50 mSv only on the condition that they have informed in writing the respective undertaking or employer of outside workers that the participation is on a voluntary basis.

Article 86. (1) In the event of an emergency occupational exposure, as appropriate to the circumstances, the undertakings and the employers of outside workers shall provide the emergency workers with relevant radiation monitoring instrumentation, personal protective equipment and shall perform individual dosimetric monitoring.

(2) In the assessment of the individual doses received by the emergency workers and possible radiological consequences, the undertakings and the employers of outside workers shall seek advice from qualified experts in radiation protection.

Article 87. Upon completion of all necessary emergency response and mitigation actions, or at request at any time, the undertakings and the employers of outside workers shall provide the emergency workers with relevant information on the radiation doses received.

Article 88. The emergency workers are entitled to receive special medical surveillance, which is implemented depending on the circumstances of emergency occupational exposure.

Article 89. The undertakings and employers involved in the emergency response activities shall perform programs related to the management of the doses expected to be incurred as a result of the emergency exposure situation, including monitoring and recording of the doses received by emergency workers.

Section XII
Radiation protection of outside workers

Article 90. (1) The undertakings shall provide the same radiation protection and dosimetric monitoring for the outside workers, as for their own personnel.

(2) The undertakings shall require the outside workers to observe their internal rules and established radiation protection measures and shall exercise control over it.

(3) The undertakings shall be responsible, either directly or through contractual agreements with the employers of outside workers, for the operational radiation protection of the outside workers.

(4) The employers of outside workers shall be responsible, either directly or through contractual agreements with the undertakings under paragraph 1, for the provision of the radiation protection of their workers.

Article 91. The undertakings may admit outside workers to work in nuclear facilities or facilities with sources of ionising radiation subject to following conditions:

1. category A workers have submitted a medical conclusion demonstrating their medical fitness for the activities to be assigned to them;

2. the categorisation of the outside workers (category A or B) is in accordance with the occupational exposure doses liable to be received during the performance of the assigned work;

3. the outside workers have submitted their radiation passports containing data on the occupational exposure and the effective doses received by them during the whole preceding period until their employment by the respective undertaking;

4. the outside workers have submitted recognised competence certificates, documents for acquired vocational qualification and received preliminary instructions and training regarding the specificity and characteristics of the envisaged activities and workplaces.

Article 92. (1) In order to admit certain outside workers in the controlled area, the undertaking shall ensure that, in addition to the basic training in radiation protection, the outside workers have received specific instructions and training in radiation protection and safety measures in the workplace.

(2) The instructions and training of the outside workers admitted to the controlled area shall also cover the respective parts of the emergency response plans and procedures.

(3) The undertaking shall ensure that the outside workers admitted to the surveillance area shall receive safety instructions appropriate to the radiation risk and foreseen activities.

Article 93. (1) The undertakings shall provide the outside workers with necessary technical means of radiation protection, and equipment for individual dosimetric monitoring appropriate to the nature of the activities to be performed in the controlled area as well as to the internal radiation protection procedures and requirements;

(2) The undertakings shall take all appropriate measures to ensure that the individual dosimetric monitoring data for each category A outside worker engaged in activities in the controlled area shall be recorded, including:

1. the period of time when the work was carried out and an assessment of the effective dose received by the outside worker during that period;

2. assessment of the equivalent doses in case of uneven distribution of the exposure;

3. assessment of the effective dose of internal exposure in case of inhaled or ingested radionuclides.

Section XIII
Control of exposure to radon in workplaces

Article 94. In order to limit the exposure to radon, a reference level of 300 $Bq.m^{-3}$ is established for the average annual volume activity of radon in air in separate indoor workplaces where increased radon exposure is possible.

Article 95. (1) In areas within workplaces, where the radon concentration continues to exceed 300 $Bq.m^{-3}$, in addition to the measures and actions taken for the optimisation of protection, the undertakings shall assess the individual effective doses of the workers in these workplaces.

(2) Where the annual individual effective dose of the workers due to indoor radon exceeds 6 mSv, the adopted measures shall be equivalent to those in situation of planned exposure and the undertakers shall take the radiation protection measures which are applicable to occupationally exposed workers. Where the annual individual effective dose due to radon exposure does not exceed 6 mSv, the corresponding workplaces shall be subject to radiation monitoring.

(3) In the cases covered by paragraph 2, the undertakings shall notify the Chairperson of the Nuclear Regulatory Agency and the state health control authorities for the assessment results under paragraph 1 and for the measures and actions taken by them.

(4) The state health control authorities shall prescribe measures to ensure the radiation protection of the workers and, if necessary, identify appropriate corrective actions to reduce the radon exposure.

Chapter Seven
RADIATION PROTECTION OF MEMBERS OF THE PUBLIC IN PLANNED EXPOSURE SITUATIONS

Article 96. (1) The operational radiation protection of members of the public from possible exposure in normal conditions due to activities involving nuclear facilities and facilities with sources of ionising subject to licensing shall include the following:

1. selection, examination and approval of the site of the nuclear facility or facility with sources of ionising radiation from a radiation protection point of view, taking into account relevant demographic, meteorological, geological, hydrological and ecological conditions;

2. issuance of a construction permit on the basis of an approved design, providing for and justifying appropriate measures for radiation protection during the operational period of the nuclear facility or facility with sources of ionising radiation;

3. verification of the readiness of the facility for commissioning and operation subject to adequate protection being provided against:

a) any public exposure liable to extend beyond the perimeter of the facility;

b) radioactive contamination liable to extend beyond the perimeter of the facility;

c) radioactive contamination liable to extend to the ground beneath the facility;

4. examination and approval of plans for discharging of radioactive effluents in the atmosphere and hydrosphere;

5. measures to control the access of members of the public to the facility;

6. issuance of an operational licence for the facility.

(2) (New, SG No. 110/2020) The operational radiation protection of members of the public from possible exposures in normal conditions due to activities subject to registration under the Act on the Safe Use of Nuclear Energy shall include measures for prevention of unauthorised exposures and optimisation of the radiation protection. Those measures shall be justified and determined in the process of issuance of a registration certificate according to a procedure specified in the Regulation under Article 26, paragraph 1 of the Act on the Safe Use of Nuclear Energy.

Article 97. (1) The Chairperson of the Nuclear Regulatory Agency shall, through the licence for operation of the nuclear facility or facility with sources of ionising radiation, approve permitted activity levels (or specific activity levels) of the airborne and liquid radioactive discharges and adequate conditions and requirements for monitoring in case of authorised discharges of radioactive effluents to the environment, taking into account the optimisation of radiation protection and good practices in the operation of similar facilities.

(2) (Amended, SG No. 110/2020) The activity levels under paragraph 1 shall be determined on the basis of dose constraints which have to be justified in the licensing process taking into account all possible exposure pathways under normal conditions.

(3) (Amended, SG No. 110/2020) In the case of possible airborne and liquid radioactive discharges into the environment due to activities involving materials containing increased concentrations of natural radionuclides (NORM), the requirements of the Regulation under Article 26, paragraph 5 of the Act on the Safe Use of Nuclear Energy shall be applied.

Article 98. (Amended, SG No. 110/2020) (1) In the case of authorised activities under Article 15, paragraph 3, points 1, 2, 3 and 8 and Article 15, paragraph 4, point 11 of the Act on the Safe Use of Nuclear Energy, where airborne and liquid radioactive discharges into the environment are possible, screening assessment of the effective doses to members of the public under normal conditions shall be performed.

(2) In the case of authorised activities under Article 15, paragraph 3, point 1 of the Act on the Safe Use of Nuclear Energy, the undertaking to operate the nuclear facility shall perform realistic assessment of the effective doses to members of the public resulted from airborne and liquid radioactive discharges into the environment on the basis of realistic data. In respect of the other activities specified in paragraph 1, a screening assessment is sufficient to be performed.

(3) For the purposes of a realistic assessment of the doses to members of the public and for comparison with dose constraints, representative individuals shall be determined on the basis of performed studies and taking into account the actual exposure pathways leading to internal and external exposure.

(4) In determining the representative individuals under paragraph 3 and the scope and frequency of the radiation monitoring performed for the purposes of the assessment under paragraph 2, the instructions of the Minister of Health shall also be implemented, if such instructions have been given in connection with the assessment of the health risk under Article 72, paragraph 3 of the Health Act.

Article 99. (Amended, SG No. 110/2020) The realistic assessment of the effective doses to representative individuals shall include:

1. assessment of the doses due to external exposure, taking into account the type and characteristics of the ionising radiation;

2. assessment of the doses due to the intake of radionuclides, their nature and characteristics;

3. identifying the presence of radionuclides in food, drinking water and environmental components connected with the exposure of the representative individuals;

4. identifying dose-determining exposure pathways.

Article 100. (1) The undertakings authorised for activities involving discharges of effluents into the environment are obliged to appropriately monitor and/or evaluate the

quantity and activity of the radioactive airborne or liquid discharges into the environment in normal operation of the respective nuclear facilities and facilities with sources of ionising radiation.

(2) The undertakings shall report annually, by 1 March, to the Minister of Health and to the Chairperson of the Nuclear Regulatory Agency of monitoring and evaluations results under paragraph 1.

(3) (Amended, SG No. 110/2020) In cases where the authorised limits of the airborne and/or liquid radioactive discharges have been exceeded, the undertaking shall immediately notify the Chairperson of the Nuclear Regulatory Agency and the Minister of Health.

(4) The undertakings responsible for the operation of nuclear power plants shall monitor the radioactive discharges in the environment and shall report the results to the European Commission in accordance with the standardised information required to be provided by the Member States of the European Union, on the basis of the Treaty Establishing the European Atomic Energy Community (Euratom).

(5) The information on the measurements and evaluation of external and internal exposure, the assessment of the intake of radionuclides, and the results of the assessment of the doses for representative individuals shall be published annually, by 30 April, on the website of the National Centre for Radiobiology and Radiation Protection.

Article 101. The undertakings are obliged to restrict and control the public exposure, carrying out the following duties:

1. maintain an optimal level of protection of members of the public;

2. accept into service adequate equipment and apply procedures for measurement and assessment of the members of the public exposure and radioactive contamination of the environment;

3. verify the effectiveness and the maintenance of the equipment as referred to in point 2 and ensure regular metrological verification of measuring instruments;

4. seek advice from a qualified expert in radiation protection in the performance of the duties referred to in points 1 - 3.

Chapter Eight
RADIATION PROTECTION OF THE PUBLIC IN EMERGENCY EXPOSURE SITUATIONS

Article 102. (1) The management of emergency exposure situations shall include the following elements:

1. assessment of potential emergency exposure situations, public exposure and emergency occupational exposure;

2. allocation of responsibilities of the undertakings and competent local and governmental authorities included in the emergency preparedness and response system;

3. maintenance of an internal emergency plan of the undertaking and external emergency plans of the competent authorities;

4. reliable means of communication and effective arrangements for coordination covering different levels of emergency planning and response;

5. health protection of emergency workers;

6. information and training of the individuals involved in the emergency preparedness and response system;

7. individual dosimetric monitoring or assessment of the individual doses of emergency workers and maintaining a dose register;

8. informing the public;

9. transition from an emergency exposure situation to an existing exposure situation, including recovery and eliminating of the consequences.

(2) The emergency response plans shall be developed to prevent tissue reactions with severe deterministic effects for each individual of the affected population and to reduce the risk of stochastic effects, with the application of general principles of radiation protection and reference exposure levels.

Article 103. (1) For emergency exposure situations, the reference levels for exposure of members of the public, expressed in effective doses, shall be set in the range of 20 to 100 mSv (acute or annual).

(2) In specific emergency exposure situations, a reference level below 20 mSv may be determined, if appropriate protection can be provided without causing excessive detriment from the corresponding countermeasures or unreasonably high costs.

(3) The reference levels shall be determined taking account of the features of prevailing situations and societal criteria, as follows:

1. in the range up to 20 mSv per year - specific information to enable members of the public to manage their own exposure;

2. in the range up to 100 mSv per year - assessment of individual doses and specific information on radiation risks and on available actions to reduce public exposures.

(4) (Repealed, SG No. 110/2020)

(5) (Repealed, SG No. 110/2020)

(6) The undertakings shall maintain emergency response plans containing protective measures with regard to:

1. the radiation source – to reduce or stop the emergency exposure, including release of radionuclides in the environment;

2. the environment – to reduce the exposure to individuals resulting from radioactive substances through relevant pathways;

3. affected individuals – to reduce their exposure.

Article 104. (1) For the purposes of organising a response and coordination in the event of an emergency on the territory of the country or abroad, an external emergency plan shall be maintained.

(2) The external emergency plan shall establish appropriate protective measures, which shall be applied taking account of the real characteristics of the emergency and in accordance with optimised protection strategies.

(3) The external emergency plan shall include the following elements related to the radiation protection:

1. reference levels related to members of the public exposure;

2. reference levels related to emergency occupational exposure;

3. optimised protection strategies for the members of the public who may be exposed, for different postulated events and related scenarios;

4. predefined generic criteria for particular protective measures;

5. the members of the public likely to be affected in the event of an emergency and who will be informed about the health protection measures applicable to them and about the actions they should take in the event of emergency;

6. arrangements for informing the members of the public actually affected in the event of

an emergency;

7. the order and sequence of implementation of the protective measures;

8.arrangements for the assessment of the effectiveness of the strategies and implemented actions and adjusting them as appropriate to the prevailing situation;

9. comparing the doses against the reference level;

10.implementing further protection strategies based on prevailing conditions and available information;

11. arrangements for assessment and recording of the consequences of the emergency and of the effectiveness of the protective measures.

Article 105. (1) The information to be provided to the members of the public likely to be affected in the event of an emergency shall have the following minimum content:

1. basic facts about radioactivity and its effects on human beings and on the environment;

2. the types of radiological emergencies and their effects on human beings and on the environment;

3. urgent measures envisaged to alert, protect and assist the public in the event of a radiological emergency;

4. actions to be taken by the population in the event of a radiological emergency.

(2) The information shall be communicated to the members of the public without any request being made. The information shall be updated and regularly distributed and shall be permanently available to the public.

(3) If the emergency is preceded by a pre-alarm phase, the members of the public likely to be affected shall receive information and advice during that phase, such as:

1. an invitation to the members of the public concerned to tune in to relevant communication channels;

2. preparatory advice to establishments with particular collective responsibilities;

3. recommendations to specific professional groups;

4. this information and advice shall be supplemented (if time permits) by a reminder of the basic facts about radioactivity and its effects on human beings and on the environment.

(4) The information to the members of the public actually affected in the event of an emergency shall have the following minimum content:

1. basic facts on the type of the emergency which has occurred and its characteristics including its location, boundaries and probable development;

2. advice on personal behaviour, which, depending on the type of emergency, may include:

a) restrictions on the consumption of certain foodstuffs and water, basic rules on radiation hygiene and decontamination, recommendations to stay indoors, distribution and use of protective means, evacuation arrangements;

b) special warnings for certain groups of the public;

c) recommendations for the observance of the instructions of the competent authorities.

Article 106. (1) A decision for the termination of a nuclear or radiological emergency shall be taken in accordance with the Regulation under Article 123 of the Act on the Safe Use of Nuclear Energy, following the procedure established by the external emergency plan defined under Article 117 of the Act on the Safe Use of Nuclear Energy. The respective decision shall be taken on the basis of the reference levels under Article 103, paragraph 1 of this Regulation, taking into account the need to mitigate the consequences of the emergency and resumption of the social and economic activities.

(2) The population shall be provided with information on necessary protective measures

and all necessary changes in their personal behaviour in case of transition from an emergency exposure situation to an existing exposure situation.

(3) Workers carrying out remediation activities connected with repair works of facilities and activities related to management of radioactive waste and decontamination of sites and terrains shall be subject to radiation protection requirements applied to planned exposure situations.

(4) The emergency response plans shall also include the procedure for transition from an emergency exposure situation to an existing exposure situation and, where necessary, consulting procedure involving other Member States of the European Union and third countries.

Article 107. With regard to the emergency response, each undertaking is obliged to immediately notify the Chairperson of the Nuclear Regulatory Agency of any emergency situation related to the facility and/or activity for which it is responsible, as well as:

1. to make an initial preliminary assessment of the circumstances and consequences of the emergency situation;

2. to undertake in due time planned emergency response measures, including:

a) promptly implementing protective measures, if possible, before any exposure occurs;

b) implementing all appropriate measures to limit the radiological consequences;

c) assessing the effectiveness of the implemented actions and performed activities in order to adjust them to the prevailing situation;

d) implementing further protective measures, as necessary, based on prevailing conditions and available information;

e) rendering assistance in off-site emergency response, including in respect of international cooperation.

Article 108. (1) The Ministry of Interior shall, through the Directorate General Fire Safety and Protection of Population, perform preventive activities in the field of emergency planning and preparedness for response to a radiological emergency, in cooperation with other European Union Member States and third countries.

(2) In the event of an emergency, and in case of loss, theft or detection of high activity sources, other hazardous radioactive sources and radioactive materials, the Chairperson of the Nuclear Regulatory Agency, jointly with respective competent state authorities, shall contact the competent authorities of other countries which may be affected or likely to be affected, in order to provide information on the exposure situation and for the purposes of coordination of the protective measures and the information to be provided to the public.

Chapter Nine
RADIATION PROTECTION IN EXISTING EXPOSURE SITUATIONS

Section I
Types of existing exposure situations

Article 109. (1) In case of existing exposure situations, where actions and measures should be taken to ensure the radiation protection and for which certain legal or natural persons may be held liable, the relevant requirements envisaged for planned exposure situations shall be applied.

(2) The types of existing exposure situations shall include:

1. exposure due to contamination of areas/regions by residual radioactive material from:

a) past activities that were never subject to regulatory control or were not regulated in accordance with the requirements laid down by the Act on the Safe Use of Nuclear Energy and the regulations adopted on the basis thereof;

b) an emergency situation, in the case of transition from an emergency exposure to an existing exposure situation after the emergency exposure situation has been declared ended, as provided for in the emergency management system;

c) past activity for which the undertaking is no longer legally accountable;

2. exposure from natural radiation sources, including:

a) indoor exposure from radon and thoron indoors, in workplaces, dwelling and other buildings;

b) indoor external exposure from building materials;

3.exposure from commodities (excluding food, animal feeding stuffs and drinking water) incorporating radionuclides from contaminated areas/regions specified in point 1, or high concentrations of naturally occurring radionuclides.

Article 110. (1) All state bodies and legal entities entrusted with the monitoring and control of the environmental factors shall promptly inform the state health control authorities of any case where contamination has been found.

(2) (New, SG No. 110/2020) In case of public exposure under paragraph 1, the National Centre for Radiobiology and Radiation Protection shall perform health risk assessment and, if necessary, shall give recommendations to the persons under Article 109, paragraph 1 for the application of radiation protection measures in accordance with the principles of justification and optimization.

(3) (New, SG No. 110/2020) In the cases under paragraph 2, the persons under Article 109, paragraph 1 shall prepare programs and plans for the implementation of the recommendations given to them, which shall be coordinated with the National Centre for Radiobiology and Radiation Protection.

(4) (New, SG No. 110/2020) In the case of remediation activities associated with areas contaminated with radioactive substances, the coordinated programs and plans under paragraph 3 shall be attached to the application for issuance of a permit under Article 15, paragraph 4, point 18 of the Act on the Safe Use of Nuclear Energy.

Section II
Development and implementation of national programs on management of existing exposure situations

Article 111. (1) On a proposal by the authorities concerned, the Council of Ministers shall adopt strategies, programs and plans for management of existing exposure situations.

(2) (Amended, SG No. 110/2020) The documents under paragraph 1 shall determine, as applicable and appropriate, the following:

1. the responsibilities of the interested state bodies connected with management of the identified existing exposure situations;

2. short-term and long-term goals and the respective reference levels, taking into account the annual effective dose from all possible exposure pathways in the range of 1- 20 mSv;

3. identification of the boundaries of the affected areas and affected members of the public from radiation protection point of view;

4. protective measures and the scale of the measures to be applied to a specific existing exposure situation;

5. measures for prevention and control of the access to the affected areas and for imposition of restrictions in respect of living conditions;

6. assessment of the exposure of different groups in the population and the resources necessary for monitoring the exposure of the affected individuals.

(3) (Repealed, SG No. 110/2020)

Article 111a. (New, SG No. 110/2020) For areas with long-lasting residual contamination in which a decision has been taken to allow habitation and the resumption of social and economic activities, consultation with all affected stakeholders shall be performed in respect of the arrangements which have to be made for the implementation of ongoing control of exposure with the aim of establishing living conditions that can be considered as normal, including:

1. establishment of appropriate reference levels;

2. establishment of an infrastructure to support continuing self-help protective measures in the affected areas (such as information provision, advice and monitoring);

3. if appropriate, remediation measures;

4. if appropriate, creating delineated areas.

Article 112. (1) The protection measures provided for the implementation of a program for management of an existing exposure shall be subject to optimisation. The assessment shall cover the distribution of the doses achieved as a result of the implementation of the program. Further steps shall also be planned to optimise the protection and to reduce the exposures the doses of which exceed the reference levels.

(2) The authorities responsible for the implementation of existing exposure management programs shall:

1. assess the existing remediation and protective measures for the achievement of the objectives as well as the effectiveness of planned and implemented measures;

2. provide information to the population concerned on the potential health risks and available means of reducing the exposure;

3. give instructions for management and control of exposures at individual or local level;

4. provide information on the appropriate radiation monitoring instrumentation as well as on the protective measures in the use of materials containing increased concentrations of natural radionuclides which are not managed as planned exposure situations.

Section III
Limitation of exposure to natural radiation sources

Article 113. For activities involving materials containing increased concentrations of natural radionuclides leading to exposure which cannot be disregarded as far as radiation protection is concerned, the radiation protection and control measures according to the Regulation under Article 26, paragraph 5 of the Act on the Safe Use of Nuclear Energy shall apply.

Article 114. (1) For workers to carry out activities under Article 113, the annual effective dose should not exceed, in production conditions, by more than 6 mSv the dose due to exposure from the local natural background radiation.

(2) There shall be no limit to the effective dose for members of the public in case of exposure from natural sources.

Article 115. (1) The reference level for the annual average volume activity of radon in the air of dwelling and public buildings is 300 $Bq.m^{-3}$.

(2) When identifying dwelling and public buildings where the reference level of 300 $Bq.m^{-3}$ is exceeded, measures shall be taken to:

1. reduction of radon volume activity in the air of buildings in accordance with the optimisation principle;

2. informing the public about indoor radon exposure and the associated health risks, the importance of radon measurements and the existing technical measures to reduce radon volume activity (by improving ventilation, limiting the intake of radon, etc.);

3. ensure systematic monitoring of the volume activity of radon in buildings with increased concentrations of radon in the air.

Article 116. (1) The reference level applied to external exposure to gamma radiation emitted by building materials shall be 1 mSv per year (an effective dose that does not include the dose of external exposure due to the natural background gamma-radiation).

(2) For building materials, the secondary reference level for the content of natural radionuclides shall be determined according to activity concentration index I given by following formula:

$$I = \frac{C_K}{3000\ \text{Bq/kg}} + \frac{C_{Ra}}{300\ \text{Bq/kg}} + \frac{C_{Th}}{200\ \text{Bq/kg}},$$

where C_K, C_{Ra} and C_{Th} are specific activity values (Bq/kg) regarding the content of K-40, Ra-226 and Th-232 in a given building material.

(3) Depending on the purpose of the building materials, the maximum permitted values of the activity concentration index are:

1. for basic construction of dwelling and public buildings – 1;

2. for lining materials for dwelling and public buildings, for industrial and agricultural buildings and for transport and engineering and technical infrastructure within the boundaries of the settlement - 2;

3. for transport, engineering and technical infrastructure outside the settlement - 4.

(4) An indicative list of types of building materials whose specific activity index may not meet the requirements of paragraph 3 is set out in Annex No. 7

(5) Verifying compliance and placing on the market of building materials shall be carried out in accordance with the Regulation under Article 65, paragraph 1, point 5 of the Health Act.

Article 117. (1) The use of drinking water by the population shall be permitted without restrictions if the content of natural and/or artificial radionuclides in it are liable to create an annual effective dose of up to 0,1 mSv.

(2) If the content of radionuclides creates an annual effective dose greater than 0.1 mSv, the Minister of Health may authorise derogations from the requirements for drinking water quality in accordance with the Regulation under Article 135, point 3 of the Waters Act.

Section IV
Management of areas by residual radioactive material
(Repealed, SG No. 110/2020)

Article 118 (Repealed, SG No. 110/2020)
Article 119 (Repealed, SG No. 110/2020)

Chapter Ten
CONTROL AND MANAGEMENT OF HIGH ACTIVITY SOURCES
Section I
General requirements

Article 120. (1) The undertakings to manufacture, process, store or use radioactive sources (sealed or unsealed sources) shall keep records and conduct an inventory under paragraph 2.

(2) The undertaking shall, at least once a year, appoint an inventory commission to check the existence, location, transfer, disposal, consumption and condition of the radioactive sources used and stored in a given facility. A copy of the commission findings regarding inventory results shall be submitted to the Chairperson of the Nuclear Regulatory Agency by the end of the first quarter of each subsequent calendar year.

(3) In case of identification of absence, loss, theft, violation of integrity, unauthorised use or disposal of radioactive sources or any other extraordinary event that may result in unintentional or deliberate damage or destruction of a radioactive source or malicious actions with it, the undertaking must immediately notify the Chairperson of the Nuclear Regulatory Agency and the authorities of the Ministry of Interior.

(4) The undertakings shall present upon request the results of the inventory of the radioactive sources to the Chairperson of the Nuclear Regulatory Agency and are obliged to provide access and assistance to the inspectors of the Agency in carrying out verification checks at the respective facilities.

Article 121. (1) The undertakings shall take technical and organisational measures to ensure effective inventory and reporting of radioactive sources in respect of their location, condition, use and storage, including recycling or disposal of radioactive sources as soon as they are no longer usable and are unnecessary.

(2) The undertakings shall appoint qualified persons who shall be responsible for the internal control over the radioactive sources and shall notify the Nuclear Regulatory Agency about these actions.

Section II
Accounting and control of high activity sources

Article 122. (1) Any undertaking using or storing high activity sources shall perform periodic tests, including leakage tests based on international and national standards in order to control the state and integrity of each source and to ensure its safety.

(2) The frequency of the leakage tests of high activity sources shall be determined by the Chairperson of the Nuclear Regulatory Agency under license and permit conditions.

(3) In cases other than those provided for in paragraph 2, leakage tests shall also be performed as prescribed by the inspectors of the Nuclear Regulatory Agency in the exercising of current regulatory control.

(4) After expiry of the term of safe use of the high activity source specified in the manufacturing documentation, its leak tightness shall be tested at least once a year if the source continues to be used.

(5) The results of the leakage tests under paragraph 4 shall be evaluated by a commission appointed by the Chairperson of the Nuclear Regulatory Agency.

(6) The commission under paragraph 5 shall make a conclusion on the possibility of further safe use of a given high activity sealed source and shall propose to the Chairperson of the Nuclear Regulatory Agency a term for further use of the source and the conditions for this.

Article 123. Each undertaking which uses or stores high activity sources shall:

1. check the integrity of each source after any event, including a fire, that may have damaged it, and to inform the Chairperson of the Nuclear Regulatory Agency of such events and of the measures taken;

2. promptly notify the Chairperson of the Nuclear Regulatory Agency of any loss, theft, or unauthorised use of a source, as well as in case of loss of integrity or leakage;

3. promptly notify the Chairperson of the Nuclear Regulatory Agency of any incident or accident resulting in unintentional exposure of a worker or a member of the public;

4. regularly verify to the Chairperson of the Nuclear Regulatory Agency that each source and, where relevant, the equipment containing the source are still present and in apparently good condition at their place of use or storage (the specific intervals and the mode of performing this obligation shall be determined in the conditions of the licenses and permits issued to the undertakings);

5. to create and maintain internal documentation (procedures, protocols, orders, programs, instructions) setting out adequate measures with respect to each fixed or mobile source, aimed at preventing unauthorised access, theft or damage (including caused by fire or flooding) of the source;

6. return in timely manner the disused sources to the manufacturer/supplier or place them in another facility, possessing the respective licence or permit, for long term storage, disposal or recycling;

7. before the transfer is realised, receive confirmation that the recipient possesses appropriate licence or permit to perform activities with those sources.

Article 124. (1) For the purposes of accounting and control, each undertaking shall keep records, in paper and electronic form, of high activity sources for which it is responsible. The registration of high activity sources shall be made according to a standard form set out in Annex No. 8.

(2) Each undertaking responsible for the safe use and storage of unsealed sources shall perform accounting and control in terms of the location, receipt, delivery, use, transfer, storage and disposal of these sources. For doing so, the undertakings shall keep a revenue and expenditure book for the unsealed sources and fill in the information according to the standard form and requirements set out in Annex No. 9.

Article 125. (1) The undertakings shall notify the Chairperson of the Nuclear Regulatory Agency within 7 days of each transaction involving high activity sources subject to authorised activities as well as for any delivery, transfer or relocation of high activity sources from one undertaking to the other. The notification shall indicate the type and activity of the radioactive sources and the recipient of these sources.

(2) Upon delivery of de facto power or in case of transaction with the high activity sources, the undertaking must ensure that the person to receive them possesses a license or permit for a particular activity with these sources and to indicate the identification numbers of the respective license or permit.

Article 126. (1) The undertakings shall submit to the Nuclear Regulatory Agency a copy of the registers kept under Article 124, paragraph 1 (or parts thereof) in an electronic form or in writing, upon request and subject to the following deadlines:

1. within 7 days from the establishment of the register and the acquisition of high activity sources;

2. within 14 days - upon change of the information in the registers;

3. within 14 days – in case of removal from the register of a certain source, when the

undertaking no longer owns this source, indicating the name of the undertaking or a disposal/ storage facility where the source has been transferred;

4. within 14 days - upon closing the register, in case the undertaking no longer holds high activity sources;

5. annually, by the end of the first quarter of each subsequent calendar year (simultaneously with the inventory under Article 120).

(2) The registers kept by the undertakings shall be periodically inspected by the Nuclear Regulatory Agency.

Article 127. (1) The Nuclear Regulatory Agency shall keep a register of the licenses, permits, registrations and notifications for activities involving sources of ionising radiation, as well as accounting and control of these sources.

(2) The data subject to registration in the register under paragraph 1 shall be determined by the Regulation on the Procedure for Issuing Licenses and Permits for the Safe Use of Nuclear Energy.

(3) When performing accounting and control involving the sources under paragraph 1, the undertaking shall register any transfer, moving and other changes connected with the traceability and control over the lifetime of the respective source.

(4) The information entered in the register under paragraph 2 shall be updated taking into account any change related to the accounting and control of the sources.

Section III
Licensing of activities involving high activity sealed sources

Article 128. Before issuing a license or permit for activities involving high activity sources, the applicant shall ensure that:

1. appropriate measures are in place for the safe management and accounting of the sources, including cases where they become disused sources;

2. provisions are made for delivery, storage and disposal of disused sources in radioactive waste management facilities (or for returning the sources back to the respective producer/supplier);

3. appropriate measures are in place, by financial guarantees or other equivalent means, for safe management of the disused sources, including where the undertaking declares insolvency or terminates its authorised activities with high activity sealed sources.

Section IV
Identification and marking of high activity sources

Article 129. (1) The identification number of each high activity source shall be indicated on a certificate issued by the manufacturer of the source. The manufacturer identifies each source by a unique number, which, where practicable, shall be engraved, stamped or durably marked on the source.

(2) The identification number of the source shall also be engraved, stamped or durably marked on the source container. If this is not feasible, or in the case of reusable transport containers, the source container shall at least bear information on the nature, activity and radionuclide composition of the source, or sources if there are more than one in a transport container.

(3) The high activity source container and, where practicable, the source itself shall be marked or labelled with an appropriate radiation warning symbol.

(4) The manufacturers of high activity sources shall provide, together with the

documentation set, an image of each model manufactured source and modal container used for placement of the sources.

(5) The suppliers of high activity sources shall provide the undertakings with complete set of accompanying technical documentation prepared by the manufacturers of the sources.

(6) An undertaking carrying out activities with high activity sources shall keep the documentation related to the sources certifying that they have been identified and marked in accordance with paragraphs 1-3 and that the markings and signs applied are durable and legible. The documentation shall include certificates issued by the manufacturer of the sources and images of the sources themselves, their containers and transport packaging, as well as of structural elements and auxiliary equipment as appropriate.

Section V
Detection, management and control of orphan sources

Article 130. The Nuclear Regulatory Agency and the specialised control authorities under Article 13 of the Act on the Safe Use of Nuclear Energy shall take actions and measures for:

1. raising awareness of the potential danger of orphan sources;

2. development of guides and instructions on necessary actions, reaction modes and notification procedure in case of detection or suspected detection of orphan sources at a given location;

3. encouraging the establishment of systems aimed at detection of orphan sources in places where they may generally be encountered (such as large scrap metal storage facilities, metallurgical plants, metal scrap recycling installations, main transport, loading and unloading and border checkpoints in the country);

4. timely provision of specialised technical advice and expert assistance to persons suspecting the existence of an orphan source in a given location, who are not normally involved in activities for which radiation protection measures are applied; the consultation and assistance are related to radiation protection of the workers and members of the public as well as to securing of the orphan sources found.

Article 131. The Nuclear Regulatory Agency and the specialised control authorities under Article 13 of the Act on the Safe Use of Nuclear Energy shall initiate and encourage the establishment of systems aimed at detection of radioactive contamination in metal products imported from countries outside the European Union in places such as border crossing points, major transport nodes and users of imported metals.

Article 132. (1) The managers of the units operating metal scrap recycling installations shall inform in due time the authorities of the state health control on the assumptions or received information on any melting of or other metallurgical operation involving orphan sources.

(2) The managers of the units operating metal scrap recycling installations shall take appropriate measures and require that materials contaminated with radioactive substances shall not be used and placed on the market and shall be handled under the supervision of the authorities of the state health control.

Article 133. (1) In order to maintain preparedness and response activities in case of emergencies involving orphan sources, a procedure for the actions to be taken in such events shall be prepared, which shall be part of the national plan under Article 9 of the Disaster Protection Act and shall include the functions, responsibilities and the procedure for the

activities to be performed by the state authorities.

(2) In the case of an emergency situation with an orphan source, an emergency team shall be established by an order of the Chief Secretary of the Ministry of Interior, composed of, as the case may be, officers of the specialised control authorities under Article 13 of the Act on the Safe Use of Nuclear Energy, the Nuclear Regulatory Agency, the Institute for Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences and the State Enterprise "Radioactive Waste".

Article 134. (1) The State Enterprise "Radioactive Waste" shall be responsible for the acceptance, transportation, storage and disposal of abandoned sources connected with activities with radioactive sources and materials in the past.

(2) The State Enterprise "Radioactive Waste" shall plan annually within its budget financial resources for fulfilment of the obligations under paragraph 1.

Chapter Eleven
REQUIREMENTS FOR THE DESIGN AND OPERATION OF NUCLEAR FACILITIES AND FACILITIES WITH SOURCES OF IONISING RADIATION

Article 135. (1) For the purposes of radiation protection, in the process of designing of nuclear facilities and facilities with sources of ionising radiation, as well as in the choice of technologies, structures, systems and components, the following shall be provided:

1. compliance with dose limits and dose constraints for occupationally exposed workers and members of the public;
2. the exposure doses, the number of exposed individuals and the likelihood of exposure to be kept as low as reasonably achievable;
3. minimal quantity of generated radioactive waste and use of appropriate methods and technical means for their safe management;
4. minimal discharges of radioactive substances into the environment (if expected);
5. automated and power-operated technological operations in case of activities with increased radiation risk;
6. audible and optical alarms in case of disturbance of the normal technological processes and for warning in the event of radiological emergency, blocking and protection systems against radiological incidents or accidents;
7. automated and visual control of the technological processes and operations involving increased radiation risk, taking into account the nature of the activities carried out;
8. conditions for fire-fighting and emergency-rescue activities according to the statutory requirements applied to fire and emergency safety.

(2) The specific radiation protection requirements for site selection, design and construction of nuclear facilities and facilities with sources of ionising radiation are specified in Annex No. 10.

Article 136. (1) The undertakings shall carry out a systematic accounting and control of the radioactive sources and materials placed in storage facilities.

(2) The specific requirements for the safe storage of radioactive substances in the facilities under paragraph 1 are specified in Annex No. 11.

Article 137. The undertakings may use devices and equipment containing sealed sources as well as ionising radiation generators in general production premises of the facilities or outside the premises, under field conditions, observing the requirements specified in Annex

No. 12

Article 138. (1) As a potential source of internal exposure, the radionuclides shall be divided into following groups, according to the degree of radiation hazard (radiotoxicity) for professionally exposed workers and members of the public:

1. radionuclides with very high toxicity (first group);
2. radionuclides with high toxicity (second group);
3. radionuclides with medium toxicity (third group);
4. radionuclides with low toxicity (fourth group);

(2) The distribution of the radionuclides into groups on the basis of their radiotoxicity is presented in Annex No. 13. The short-lived radionuclides with a period of half-life smaller than 24 hours shall be considered to belong to the fourth group (radionuclides with low toxicity) and are not included in Annex No. 13.

Article 139. (1) The types of work with unsealed sources of ionising radiation shall be divided into three classes – I, II, and III, depending on the radiotoxicity group to which the radionuclides belong to, and depending on their maximum permissible activity at a given workplace. The classes of works with unsealed sources are laid down in Annex No. 14.

(2) The specific requirements to the layout and equipment of the rooms, where works of I, II or III class with unsealed sources are performed, are laid down in Annex No. 15.

Article 140. (1) The requirements to the design of the systems for ventilation, cleaning of dust, aerosols and gases, sewage and water supply shall be determined by the design and construction norms and rules applicable for industrial undertakings.

(2) The specific requirements for the systems under paragraph 1 related to the radiation protection in nuclear facilities and facilities with sources of ionising radiation are specified in Annex No. 16.

Article 141. (1) The undertakings shall provide the workers in the controlled areas of nuclear facilities and facilities with sources of ionising radiation with personal protective equipment.

(2) Specific requirements for means of individual protection of occupationally exposed workers and sanitary crossing regime in nuclear facilities and facilities with unsealed sources are set out in Annex No.17.

Article 142. (1) The undertakings shall carry out radiation monitoring of the characteristics of the working environment in the controlled and surveillance areas of the nuclear facilities and facilities with sources of ionising radiation, including over the discharges of radioactive substances into the environment envisaged by the design.

(2) (Amended, SG No. 110/2020) The undertakings which operate nuclear facilities shall carry out radiation monitoring in order to assess the public exposure in accordance with programs agreed with the Chairperson of the Nuclear Regulatory Agency and the specialised control authorities.

(3) Through the monitoring under paragraphs 1 and 2 the undertakings shall ensure constant observation of the radiation situation in the respective zones/areas and shall receive the information necessary for the assessment of the doses of external and internal exposure of professionally exposed workers and members of the public.

(4) The radiation monitoring in nuclear facilities and facilities with sources of ionising

radiation shall be carried out in compliance with the specific requirements set out in Annex No. 18.

Article 143. The specific requirements for decommissioning of a facility with radioactive substances are set out in Annex No. 19.

ADDITIONAL PROVISIONS

§ 1. For the purposes of this Regulation:

1."emergency worker" means any individual who has certain obligations and duties in case of an emergency and who might be exposed while taking action in response to the emergency;

2."emergency exposure" means an exposure of individuals, other than emergency workers, as a result of an accident;

3."emergency occupational exposure" means exposure received in an emergency exposure situation by emergency workers having certain functions and role in the event of an accident and which, in the course of their actions in an emergency exposure situation, may receive doses exceeding the dose limits for occupationally exposed workers;

4. “activity” (A) means the expected number of spontaneous nuclear transformations in a given amount of radioactive substance per unit of time.

The activity A at a given time t is determined by the formula:

$$A(t) = |dN/dt| = \lambda \cdot N(t),$$

where: N (t) is the number of atoms of a given radionuclide at time t;

$\lambda = 0{,}693 \cdot T_{1/2}$ is the radioactive decay constant and $T_{1/2}$ is the half-life of the corresponding radionuclide.

The half-life values (hours, days or years) for different radionuclides are given in Annex No. 2.

Special unit name of activity in system SI: becquerel.

The activity of a given quantity of radioactive substance is 1 Bq if one spontaneous nuclear transformation occurs in one second:

$1\ Bq = 1\ s^{-1}$

5. "orphan source" means a radioactive source which is neither exempted nor under regulatory control, e.g. because it has never been under regulatory control or because it has been abandoned, lost, misplaced, stolen or otherwise transferred without proper authorisation;

6. "high activity source" means a sealed source for which the activity of the contained radionuclide is equal to or exceeds the relevant activity value laid down in Annex No. 20;

7."age group" means a group of members of the public which, based on their age, are divided into 6 groups for the purposes of radiation protection: up to 1 year, from 1 to 2 years, from 2 to 7 years, from 7 to 12 years, from 12 to 17 years and over 17 years. Occupationally exposed individuals (workers) are a separate age group;

8. "outside worker" means any exposed worker (occupationally exposed individual) who is employed by an outside employer and who received an admission to the controlled area and surveillance area of an undertaking (including, apprentices and students);

9. "outside employer" means any individual or legal entity engaged by the undertaking to perform certain activities (services) within the controlled and surveillance area;

10. "radiation generator" means a device capable of generating ionising radiation using an external source of power;

11. "dose limit" means the value of the effective dose or of the equivalent dose (where applicable, expected effective or equivalent dose) in a specified period of time which shall not be exceeded, for a given individual, in planned exposure situation;

12. "dose constraint" means a dose defined in the radiation protection optimisation process as an expected upper limit of the individual doses in a planned exposure situation that is less than the dose limits for workers and members of the public;

13. "deterministic effects" are health detriment effects from the impact of ionising radiation which may occur above a certain threshold dose level, the severity of the harmful effect (the response of the irradiated tissue or organ) being increased with the increase in the dose received;

14. "natural radiation source" means a source of ionising radiation of natural, terrestrial or cosmic origin, which exists in nature (cosmic radiation or radiation from radionuclides contained in the earth's crust, environment, food or human body);

15. "protective measures" means measures, other than remedial measures, for the purpose of avoiding or reducing doses that might otherwise be received in an emergency exposure situation or an existing exposure situation;

16. "source container" means an assembly of components intended to guarantee the containment of a sealed source, where it is not an integral part of the source but is meant for shielding the source during its transport, handling and other activities;

17."controlled area" means a controlled access area subject to special rules for the purpose of radiation protection, including preventing the spread of radioactive contamination outside this area;

18."remedial measures" means measures to remove or reduce radiation from a source of ionising radiation (in terms of activity or quantity), or the interruption of exposure pathways, or the reduction of their impact for the purposes of avoiding or reducing doses that might otherwise be received in an existing exposure situation;

18a. (New, SG No. 110/2020) "spacecraft" means a manned vehicle designed to operate at an altitude of more than 100 km above sea level;

19."extremities" means the palms, arms from wrist to elbow, feet and ankles;

20. "members of the public" means individuals who may be subject to exposure except for the cases related to occupational or medical exposure;

21. "medical exposure" means exposure to ionising radiation pursuant to § 1, point 22 of the Additional Provisions of the Act on the Safe Use of Nuclear Energy;

22. "environmental monitoring" means the measurement of external dose rates due to radioactive substances in the environment, or the measurement of concentrations of radionuclides in environmental media (air, water, soil, vegetation);

23."surveillance area" means an area subject to monitoring (surveillance) and where control (radiation monitoring) is performed for the purpose of radiation protection;

24."unintended exposure" means medical exposure that is significantly different from the intentional medical exposure intended for a given purpose;

24a. (New, SG No. 110/2020) "normal exposure" means exposure expected to occur during normal operation and anticipated operational occurrences for a facility or activity (including maintenance, inspection, decommissioning);

25. "exposure to radon" means exposure resulted from short-lived radon decay products;

25a. (New, SG No. 110/2020) "processing" means chemical or physical operations on radioactive material including the mining, conversion, enrichment of fissile or fertile nuclear material and the reprocessing of spent fuel;

26. "unsealed source" means a source of ionising radiation whose construction does not exclude the possibility of spreading radioactive substances contained therein under normal conditions of use of the source as intended;

27. “planned special exposure” means a specially authorised exposure where it is allowed the dose limits established for occupational exposure to be exceeded;

28. "potential exposure" means exposure that is not expected with certainty but may result from an event or sequence of events of a probabilistic nature, including equipment failures and operating errors in the operation of a nuclear facility or source of ionising radiation;

29."consumer product" means a device or manufactured item into which one or more radionuclides have deliberately been incorporated or produced by activation, or which generates ionising radiation, and which can be sold or made available to members of the public without special monitoring or regulatory control after sale;

30."undertaking" means a natural or legal person, including a health care establishment, responsible for carrying out an activity/practice in a safe way or responsible for the safety of a given radiation source under the national law and subject to control under the Act on the Safe Use of Nuclear Energy;

31."representative individual" means an individual receiving or able to receive a dose that is representative of more highly exposed individuals in the population, resulting from a given source and exposure pathway excluding those individuals having extreme or rare habits;

32."occupational exposure" means exposure of workers, apprentices and students, incurred in the course of their work in an undertaking;

33."occupationally exposed worker" means an individual, either self-employed or working under an employer, who is subject to exposure at work carried out within an activity/practice under regulation who is liable to receive doses exceeding one or other of the dose limits for public exposure;

34."radioactive material" means material incorporating radioactive substances;

35. "radioactive contamination" means the unintentional or undesired presence of radioactive substances on surfaces or in solid objects, liquids or gases, or on the human body;

36."radon" means the radionuclide Rn-222 and its progeny, as appropriate;

37. "reference level" means the level (value) of the effective or equivalent dose or of the specific activity in a situation of emergency or existing exposure above which exposure is considered unacceptable in a given exposure situation. This level is not a limit that cannot be exceeded;

38."emergency exposure situation" means a situation of exposure due to an emergency;

39."planned exposure situation" means an exposure situation that arises from the planned operation of a radiation source or from a human activity which alters exposure pathways, so as to cause the exposure or potential exposure of people or the environment. Planned exposure situations may include both normal exposures and potential exposures;

40."existing exposure situation" means an exposure situation that already exists when a decision on its control has to be taken and which does not call or no longer calls for urgent measures to be taken;

41. "disused source" means a sealed source which is no longer used or intended to be used for an activity/practice for which an authorisation has been issued but which continues to require safety management;

42. “activity concentration” (specific activity) means the activity of a given amount of radionuclide contained in a unit mass of radioactive substance. The unit of activity concentration is Becquerel per kilogram (Bq/kg);

43."apprentice" means an individual receiving training or instruction within an undertaking for the purpose of acquiring specific knowledge and skills;

44. “stochastic (probabilistic) effect” means health detriment effect from the impact of ionising radiation that is assumed to have no dose threshold and the likelihood of occurrence is proportional to the dose obtained but the severity of the adverse effect is independent of the dose received;

45."building material" means any construction product for incorporation in a permanent manner in a building or parts thereof and whose performance has an effect on the performance of the building with regard to exposure of its occupants to ionising radiation;

46."thoron" means the radionuclide Rn-220 and its progeny, as appropriate;

47. "health detriment" means reducing the duration and quality of life occurring in a population group as a result of exposure, including caused by tissue reactions, cancer and severe genetic diseases;

48."accelerator" means a device capable of generating ionising radiation accelerating charged particles (electrons, protons or other charged particles) to high-energies exceeding 1 MeV.

§ 2. This Regulation introduces the requirements of Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation and repealing Directives 89/618/ Euratom, 90/641/Euratom, 96/29/ Euratom, 97/43/Euratom and 2003/122/Euratom (OJ, L 13 of 17 January 2014).

§ 3. The Chairperson of the Nuclear Regulatory Agency shall act as a contact point for operational communication and exchange of information with the competent authorities of the Member States in the European Union on all issues related to the application of this Regulation.

FINAL PROVISIONS

§ 4. The Regulation is adopted on the basis of Article 26, paragraph 3 of the Act on the Safe Use of Nuclear Energy.

§ 5. The Chairperson of the Nuclear Regulatory Agency, the Minister of Health and the Minister of Environment and Water shall, within the scope of their competence, give directions for the application of the Regulation.

§ 6. Control over the implementation of the Regulation shall be exercised by the Chairperson of the Nuclear Regulatory Agency, the Minister of Health and the Minister of Environment and Water in accordance with their prerogatives as defined in the Act on the Safe Use of Nuclear Energy, the Health Act and the Environment Protection Act.

Annex No. 1
to Article 18, paragraph 1

Values and units for the evaluation of the external and internal exposure

1. "Ambient dose equivalent" H*(d) is the dose equivalent at a given radiation field point that would be generated by the corresponding extended and ordered field in the ICRU sphere at depth d along the radius in the direction of the ordered field. The unique name for the ambient dose equivalent unit is Sievert (Sv). For highly penetrating radiation, d = 10 mm is taken.

2. "**Annual limit on intake**" (ALI) is the activity of a given radionuclide taken into the body of a reference human for one year by inhalation, by ingestion or percutaneous,

resulting in an committed effective or committed equivalent dose equal to the corresponding dose limit for one year.

Unit: Becquerel per year ($Bq.a^{-1}$)

3. "**Average annual volume activity limit**" is the volume activity value, which shall not be exceeded by the mean of the volume activities obtained by a sufficient number of measurements necessary for its reliable determination.

4. "**Average annual particle flow density limit**" means the particle flow density value, which shall not be exceeded by the mean particle flow density obtained by a sufficient number of measurements necessary for its reliable determination.

5. "**Dose coefficient**" e(g) is a quantity whose value is equal to the committed effective dose per unit intake of a given radionuclide in the body.

Unit for e(g): Sv/Bq.

The dose coefficient depends on the type of radionuclide, its physicochemical form, the mode of intake (inhalation or ingestion) and the age of the person concerned.

6. "**Equivalent dose**" (H_T) is the absorbed dose $D_{T,R}$ averaged over a given organ or tissue T and multiplied by the radiation mass factor w_R for a given type and quality of the corresponding ionising radiation R:

$H_{T,R}= w_R \times D_{T,R}$

The total equivalent dose H_T for a mixed radiation field generated by ionising radiations with different values of the radiation mass factor w_R is determined by the following formula:

$$H_T = \sum_R w_R D_{T,R}$$

The SI unit for equivalent dose is Sievert (Sv)

7. "**Effective dose**" (E) is the sum E of equivalent doses of H_T in all specified tissues and organs of the human body, weighted (multiplied) by the corresponding tissue weighting factors w_T:

$$E = \sum_T w_T H_T = \sum_T w_T \sum_R w_R D_{T,R}$$

where $D_{T,R}$ is the absorbed dose of ionising radiation R averaged over a given tissue or organ T;

w_R – the radiation weighting factor for radiation R.

The effective dose unit is Sievert (Sv).

8. "**Quality factor**" Q is the coefficient used to assess the biological efficiency of different types of ionising radiation and depends only on the linear transfer of energy.

The quality factor is determined at a depth of 10 mm in the standard sphere defined by the International Commission on Radiation Units (ICRU) by the formula:

$$Q = \left(1/\overline{D}\right)\int_0^\infty Q(L).D_L dL$$

where $\overline{D}$ is the average absorbed dose;

Q(L) – the quality factor;

L – the unlimited linear energy transfer in water keV/μm;

D_L – the distribution of D by L.

For Q(L) the following dependencies are assumed:

$Q(L) = 1$ – for L ≤ 10 keV.μm^{-1}

$Q(L) = 0{,}32.L - 2{,}2$ – for 10 keV.μm^{-1} < L < 100 keV.μm^{-1}

$Q(L) = 300/\sqrt{L}$ – for L ≥ 100 keV.μm^{-1}

9. "**Linear energy transfer** " (LET, L) is the ratio of the energy dE transmitted to the substance by the charged particles as a result of impacts on the path dl and the length of this path dl:

L = dE/dl

Unit: joule per meter J/m.

An extra-unit is kiloelectronvolt per micrometer of water keV/μm, such as:

1 keV.μm^{-1} = 1,6.10^{-10} J.m^{-1}

10. "**Dose rate**" (absorbed, effective or equivalent) is the ratio of dose increment dD for a time interval dt to this interval:

D = dD/dt

The units for the respective absorbed, effective or equivalent dose, divided by the unit of time, are used.

11. "**Directional dose equivalent**" H′(d, Ω) is the dose equivalent at a given point of the radiation field that would be generated by the corresponding extended field in ICRU sphere at depth d along a radius in a certain direction Ω.

The directional dose equivalent unit is sievert (Sv).

12. "**Volume activity**" means the activity of a radioactive source divided by the volume of the substance in which that activity is contained.

Units: becquerel per cubic meter Bq/m^3, becquerel per liter Bq/l.

13. "**Expected equivalent dose**" $H_T(\tau)$ is the integral for time t of the equivalent dose rate in a tissue or body T that will be obtained from a person as a result of an intake.

It is determined by the following formula:

$$H_T(\tau) = \int_{t_0}^{t_0+\tau} {}_T(t)dt$$

where t_0 is the time of entry of the radioactive substance into the body;

T(t) – the corresponding equivalent dose rate in organ or tissue T at time t;

τ – the time for which the integral is calculated.

In order to comply with the dose limits set out in this Regulation, t represents a period of 50 years for adults and up to 70 years for babies and children.

The unit of expected equivalent dose is sievert (Sv).

14. "**Expected effective dose**" E(τ) is the sum of the estimated equivalent doses upon entry of radionuclides into organs or tissues $H_{T(\tau)}$, each multiplied by the corresponding tissue weighting factor w_T. It is determined by the following formula:

$$E(\tau) = \sum_T w\tau H_T(\tau)$$

When determining E(τ) τ is the number of years for which summation is performed. In order to comply with the dose limits set out in this Regulation, t represents a period of 50 years after entry to adults and up to 70 years for babies and children.

The unit of expected effective dose is sievert (Sv).

15. "**Personal dose equivalent**" $H_p(d)$ is the dose equivalent in soft tissues of appropriate depth d below a defined point of the human body. For strong penetrating radiation, d = 10 mm and for low penetration radiation d = 0,07 mm.

The unit of personal dose equivalent is sievert (Sv).

16. "**Particle flow density**" is the ratio of the particle number dN at a given point of space entering for a time dt in a small sphere centered at that point to the area of the diametral section ds of this sphere:

$$\varphi = \frac{dN}{dS.dt}$$

The unit of particle flow density is part.cm^{-2}.s^{-1}.

17. "**Absorbed dose**" (D) is the energy absorbed per unit mass of substance,

$$D = \frac{d\bar{\varepsilon}}{dm},$$

where $d\bar{\varepsilon}$ is the average energy transmitted by the ionising radiation of the substance to a volume cell with a mass dm.

In this Regulation, "absorbed dose" means an average dose for a biological tissue or organ.

The absorbed dose unit is gray (Gy), with one gray being equivalent to one joule per kilogram: 1 Gy = 1 J/kg.

18. "**Radiation weighting factor**" w_R is a non-dimensional quantity (weighting factor) the value of which characterizes the different degree of harmful influence on the human organism depending on the type and energy of a given ionising radiation.

The values of the radiation weighting factors w_R are:

Radiation type	w_R
photons, electrons and muons, irrespective of their energy (except Auger electrons from radionuclides contained in DNA)	1
neutrons with energy: to 10 keV from 10 keV to 100 keV from 100 keV to 2 MeV from 2 MeV to 50 MeV over 50 MeV	 2,5 10 20 10 2,5
protons and charged pions	2
alpha particles, fission fragments, heavy ions	20

In neutron-based calculations, the w_R dependence on neutron energy E (MeV) is a continuous function that is set with the following formulas in three different ranges:

a) if E <1 MeV,

$$W_R = 2.5 + 18.2.\exp\left[-\frac{(\ln(En))^2}{6}\right]$$

b) if 1 MeV ≤ E ≤ 50 MeV,

$$W_R = 5.0 + 17.0.\exp\left[-\frac{(\ln(2En))^2}{6}\right]$$

c) E > 50 MeV

$$W_R = 2.5 + 3.25.\exp\left[-\frac{(\ln(0.04En))^2}{6}\right]$$

For all other types of radiation and energy other than the above, it is assumed that:

$w_R = \overline{Q}$,

where $\overline{Q}$ is the radiation quality factor.

19. "**Advanced field**" is a radiation field derived from the real field where the flow of ionising particles and its distribution in the direction and energy have the same values throughout the hole volume considered as in the real field at the point indicated. (In an advanced field, the stream acts from all directions on the ionising radiation detector.)

20. "**Advanced and arranged (directed) field**" is a radiation field in which the flow of ionising particles and its distribution in direction and energy are the same as in the advanced field, but the flow is unidirectional.

21. "**Sievert**" (Sv) is the special name of the unit of measure for an equivalent or effective dose. One sievert is equal to one joule per kilogram: 1 Sv = 1 $J.kg^{-1}$.

22. "**Standardized data**" means the International Commission on Radiological Protection (ICRP) data used in the calculation of secondary (derived) limits and limits used for radiation control and protection planning purposes.

23. "**ICRU spherical phantom (sphere)**" is a human body model (phantom) introduced by the International Commission on Radiation Units (ICRU), which is a sphere of tissue-equivalent substance 30 cm in diameter, density 1 $g.cm^{-3}$ and a mass composition of 76,2% oxygen, 11,1% carbon, 10,1% hydrogen and 2,6% nitrogen.

The ICRU sphere is used as the reference phantom in determining the equivalent dose.

24. "**Tissue weighting factor**" w_T is a non-dimensional value (weighting factor) whose value takes into account the relative contribution of an organ or tissue to the overall health damage resulting from whole body irradiation and the occurrence of stochastic effects.

The values of tissue weightihg factors w_T are:

Organs or tissues	w_T *
Bone-marrow (red)	0,12
Colon	0,12
Lung	0,12
Stomach	0,12
Breast	0,12
Remainder tissues **	0,12
Gonads	0,08
Bladder	0,04
Oesophagus	0,04
Liver	0,04
Thyroid	0,04

Bone surface	0,01
Brain	0,01
Salivary glands	0,01
Skin	0,01

** W_T values were obtained for a critical group of population with the same number of men and women and covering a broad age group. In the definition of an effective dose, w_T refers to professionally exposed workers and members of the public of both sexes.*

*** For the purposes of calculating "other organs and tissues" include: heart, muscles, extrathoracic region, kidneys, pancreas, spleen, thymus, gall bladder, lymphatic nodes, oral mucosa, small intestine, adrenals, prostate (male), uterus/cervix (female). The tissue factor of 0.12 for "other organs and tissues" is applied to the arithmetic mean equivalent dose for the 13 organs and tissues for each sex.*

Annex No. 2
to Article 18, paragraph 6
(Amended, SG No. 110/2020)

Secondary (derived) limits for radiation control purposes, protection planning and dose estimation in planned exposure situations

1. The secondary dose rate limit for total body irradiation of occupationally exposed workers is 10 $\mu Sv.h^{-1}$, determined so as not to reach the annual effective dose limit (20 mSv) over an average exposure time of 1700 hours for a year.

2. The secondary dose rate limit for external exposure of the members of the public is 0,1 $\mu Sv.h^{-1}$, determined so as not to reach the annual effective dose limit (1 mSv) for any person over an exposure time 8800 hours (radiation from the natural background is not counted).

3. When assessing the doses of external exposure, the standard values and interdependencies that are given in Chapters 4 and 5 of ICRP Publication 116 are used.

For the purpose of radiation protection optimisation, security factors (k) are introduced in the design of radiation structures and components, with the minimum value of k being 2,5 for the professionally exposed workers and for the members of the public. The factor is determined by dividing the relevant annual effective dose limit for a professionally exposed worker or for members of the public to the effective dose expected to receive a professionally exposed worker or a member of the public for one year.

4. Secondary limits for internal exposure shall include limits of annual intake of radionuclides in the body of occupationally exposed workers or members of the public by inhalation and by ingestion.

The secondary limits for the purposes of the operational radiation control and the protection planning of the internal exposure include: limits of the radioactive aerosol volume activity, limits of the volume activity of radioactive inert gases; limits of the particle flow density of ionising particles; limits of the volume activity of drinking water; limits for surface radioactive contamination.

5. The radionuclides for which internal exposure limits are defined in point 4 are set out in Table No. 1. For the determination of the limits under point 4, the standardized data set out in Table No. 2 for occupationally exposed workers and members of the public are used.

6. The limits of the annual intake of individual radionuclides in the body of professionally exposed workers by inhalation of aerosols, gases and vapours (LAI_{INH}), the limits of the average annual volume activity for individual radionuclides in the air of the working premises ($LAAVA_A$) and the limits of the annual intake of individual radionuclides in the body by ingestion (LAI_{ING}) are set out in Table No. 3 for an expected effective dose of 20 $mSv.a^{-1}$.

7. The limits of the annual intake of individual radionuclides into the body of members of the public (LAI_{INH}) for six age groups by inhalation of aerosols, gases and vapours, and the limits of the average annual volume activity for air in dwellings and outdoors ($LAAVA_A$) for the relevant critical age group are defined in Table No. 4 for an expected effective dose of 1 $mSv.a^{-1}$ for any member of the public.

8. Limits of annual intake by ingestion (LAI_{ING}) of individual radionuclides in the body of the members of the public at an expected effective dose of 1 $mSv.a^{-1}$ and the limits for average annual activity of drinking water ($LAAA_{DW}$) for an expected effective dose of 0,1 $mSv.a^{-1}$ are set out in Table No. 5.

(The values of the LAI_{ING} are given for six age groups of the public, and the $LAAD_{WA}$ values – for a critical age group.)

9. The $LAAVA_A$ and LAI_{ING} values given in Tables No. 3, 4 and 5 for different radionuclides are derived by dividing the annual effective dose limit for occupationally exposed workers (20 mSv) or for members of the public (1 mSv) by the respective dose coefficients $e(g)_{inh}$ and $e(g)_{ing}$ in ($Sv.Bq^{-1}$) upon entry of a given radionuclide by inhalation or ingestion.

When assessing the doses of internal exposure, the standard values and interdependencies that are given in Chapters 1 of ICRP Publication 119 for different radionuclides and age groups are used.

10. The limits of the average annual volume activity of radioactive inert gases in indoor air at an expected effective dose of 20 $mSv.a^{-1}$ for occupationally exposed workers and in outdoor air and in dwellings at an expected effective dose of 1 $mSv.a^{-1}$ for members of the public are set out in Tables No. 6 and 7, respectively.

11. (Amended, SG No. 110/2020) The limits of average annual flow density of ionising particles for occupationally exposed workers at 1700 hours of exposure per year is determined for the following cases:

a) exposure of the skin by monoenergetic electrons (Table No. 8);
b) exposure of the eye lens by monoenergetic electrons (Table No. 9);
c) contact skin exposure by beta-particles (Table No. 10);
d) external body exposure by monoenergetic photons (Table No. 11);
e) external exposure of the skin by monoenergetic photons (Table No. 12);
f) exposure of the eye lens by monoenergetic photons (Table No. 13);
g) external body exposure by monoenergetic neutrons (Table No. 14).

12. The limits for surface radioactive contamination of premises, equipment, work clothes and protective equipment in nuclear facilities and SIR (sources of ionising radiation) facilities as well as the skin of professionally exposed workers are set out in Table No. 5.

13. The dose coefficients for calculating the exposure by radon and its short-lived daughter products are given in Table No. 16.

14. In determining the limits of the average annual volume activity under points 6 and 7 for a given radionuclide, which may be in different physicochemical forms, a conservative approach shall be applied taking into account the form of the radionuclide for which the limit of annual intake is the smallest one.

15. The method for measuring the volume activity of the air shall be in accordance with the form of the radionuclide for which the respective limit of the average annual volume activity is determined.

16. In cases where the limit of the average annual volume activity in air of work premises is reached or exceeded for a given radionuclide in a particular physicochemical form, the volume activities of the air for other forms of this radionuclide shall be estimated.

17. In the case of combined exposure of different radiations and radiation pathways (external exposure from different sources of ionising radiation; internal exposure of different radionuclides by inhalation or ingestion; combined external and internal exposure), the sum of effective doses of external and internal exposure received by a person shall not exceed the annual limit of 20 mSv per occupationally exposed worker or the annual limit of 1 mSv per member of the public.

18. For the secondary limits under paragraphs 8, 10, 11 or 12, the rule for unit normalization shall be applied:

$$\sum_{i=1}^{n} = \frac{A_i}{B_i} \leq 1$$

where:

– A_i is the value of the controlled quantity referred to in paragraphs 8, 10, 11 or 12 which is determined by direct measurement or by calculation with respect to the i-th radionuclide;

– B_i is the secondary limit for the respective controlled quantity whose value is set for the i-th radionuclide in Tables No. 3, 4, 5, 6 or 7;

– i is a radionuclide numbering index, ranging from 1 to n (n is the number of radionuclides identified in air, water or in a human body).

Table No. 1

Radionuclides for which secondary limits and limits for the purposes of radiation control and protection planning are defined

Atomic number	Element	Symbol	Mass number	Half-life
1	Hydrogen	H	3 (tritium)	12,3 a
4	Beryllium	Be	7 10	53,2 d $1,39.10^6$ a
6	Carbon	C	11 14	0,339 h $5,70.10^3$ a
9	Fluorine	F	18	1,83 h
11	Sodium	Na	22 24	2,60 a 15,0 h
12	Magnesium	Mg	28	20,9 h
13	Aluminium	Al	26	$7,17.10^5$ a

Atomic number	Element	Symbol	Mass number	Half-life
14	Silicon	Si	31	2,62 h
			32	172 a
15	Phosphorus	P	32	14,3 d
			33	25,4 d
16	Sulphur	S	35	87,3 d
17	Chlorine	Cl	36	$3{,}02.10^5$ a
			38	0,621 h
			39	0,927 h
18	Argon	Ar	37	35,0 d
			39	269 a
			41	1,83 h
19	Potassium	K	40	$1{,}25.10^9$ a
			42	12,4 h
			43	22,2 h
			44	0,368 h
			45	0,288 h
20	Calcium	Ca	41	$1{,}00.10^5$ a
			45	163 d
			47	4,54 d
21	Scandium	Sc	43	3,89 h
			44	3,97 h
			44m	2,44 d
			46	83,8 d
			47	3,35 d
			48	1,82 d
			49	0,953 h
22	Titanium	Ti	44	60,0 a
			45	3,08 h
23	Vanadium	V	47	0,543 h
			48	16,0 d
			49	338 d
24	Chromium	Cr	48	21,6 h
			49	0,705 h
			51	27,7 d
25	Manganese	Mn	51	0,770 h
			52	5,60 d
			52m	0,353 h
			53	$3{,}74.10^6$ a
			54	312 d
			56	2,58 h
26	Iron	Fe	52	8,27 h
			55	2,75 a
			59	44,5 d
			60	$2{,}62.10^6$.a

Atomic number	Element	Symbol	Mass number	Half-life
27	Cobalt	Co	55	17,5 h
			56	77,2 d
			57	272 d
			58	70,8 d
			58m	8,90 h
			60	5,27 a
			60m	0,174 h
			61	1,65 h
			62m	0,232 h
28	Nickel	Ni	56	6,08 d
			57	1,50 d
			59	$7{,}60.10^4$ a
			63	98,7 a
			65	2,52 h
			66	2,28 d
29	Copper	Cu	60	0,395 h
			61	3,37 h
			64	12,7 h
			67	2,66 d
30	Zink	Zn	62	9,19 h
			63	0,639 h
			65	244 d
			69	0,940 h
			69m	13,8 h
			71m	3,96 h
			72	1,94 d
31	Gallium	Ga	65	0,253 h
			66	9,49 h
			67	3,26 d
			68	1,13 h
			70	0,352 h
			72	14,1 h
			73	4,86 h
32	Germanium	Ge	66	2,26h
			67	0,315 h
			68	271 d
			69	1,63 d
			71	11,4 d
			75	1,38 h
			77	11,3 h
			78	1,47 h

Atomic number	Element	Symbol	Mass number	Half-life
33	Arsenic	As	69	0,253 h
			70	0,877 h
			71	2,72 d
			72	1,08 d
			73	80,3 d
			74	17,8 d
			76	1,08 d
			77	1,62 d
			78	1,51 h
34	Selenium	Se	70	0,685 h
			73	7,10 h
			73m	0,663 h
			75	120 d
			79	$3{,}56.10^5$ a
			81	0,308 h
			81m	0,955 h
			83	0,372 h
35	Bromine	Br	74	0,423 h
			74m	0,767 h
			75	1,61 h
			76	16,2 h
			77	2,38 d
			80	0,295 h
			80m	4,42 h
			82	1,47 d
			83	2,40 h
			84	0,530 h
36	Krypton	Kr	74	0,192 h
			76	14,8 h
			77	1,24 h
			79	1,46 d
			81	$2{,}29.10^5$ a
			83m	1,83 h
			85	10,8 a
			85m	4,48 h
			87	1,27 h
			88	2,84 h
37	Rubidium	Rb	79	0,382 h
			81	4,25 h
			81m	0,504 h
			82m	6,47 h
			83	86,2 d
			84	32,8 d
			86	18,6 d
			87	$4{,}93.10^{10}$ a
			88	0,297 h
			89	0,252 h

Atomic number	Element	Symbol	Mass number	Half-life
38	Strontium	Sr	80	1,77 h
			81	0,372 h
			82	25,6 d
			83	1,35 d
			85	64,8 d
			85m	1,13 h
			87m	2,83 h
			89	50,6 d
			90	28,8 a
			91	9,63 h
			92	2,65 h
39	Yttrium	Y	86	14,7 h
			86m	0,800 h
			87	3,32 d
			88	107 d
			90	2,67 d
			90m	3,19 h
			91	58,5 d
			91m	0,828 h
			92	3,54 h
			93	10,1 h
			94	0,312 h
			95	0,172 h
40	Zirconium	Zr	86	16,5 h
			88	83,0 d
			89	3,27d
			93	$1{,}61.10^{6}$ a
			95	64,0 d
			97	16,9 h
41	Niobium	Nb	88	0,242 h
			89	1,90 h
			89m	1,□18 h
			90	14,6 h
			93m	16,1 a
			94	$2{,}00.10^{4}$ a
			95	35,0 d
			95m	3,61 d
			96	23,4 h
			97	1,20 h
			98	0,855 h
42	Molybdenum	Mo	90	5,56 h
			93	$4{,}00.10^{3}$ a
			93m	6,85 h
			99	2,75 d
			101	0,243 h

Atomic number	Element	Symbol	Mass number	Half-life
43	Technetium	Tc	93	2,75 h
			93m	0,725 h
			94	4,88 h
			94m	0,867 h
			95	20,0 h
			95m	61,0 d
			96	4,28 d
			96m	0,858 h
			97	$2{,}60.10^{6}$ a
			97m	90,1 d
			98	$4{,}20.10^{6}$ a
			99	$2{,}12.10^{5}$ a
			99m	6,01 h
			101	0,237 h
			104	0,305 h
44	Ruthenium	Ru	94	0,863 h
			97	2,90 d
			103	39,3 d
			105	4,44 h
			106	1,02 a
45	Rhodium	Rh	99	16,1 d
			99m	4,70 h
			100	20,8 h
			101	3,30 a
			101m	4,34 d
			102	2,90 a
			102m	207 d
			103m	0,935 h
			105	1,47 d
			106m	2,18 h
			107	0,362 h
46	Palladium	Pd	100	3,63 d
			101	8,47 h
			103	17,0 d
			107	$6{,}50.10^{6}$ a
			109	13,6 h
47	Silver	Ag	102	0,215 h
			103	1,10 h
			104	1,15 h
			104m	0,558 h
			105	41,3 d
			106	0,399 h
			106m	8,28 d
			108m	438 a
			110m	250 d
			111	7,45 d
			112	3,13 h
			115	0,333 h

Atomic number	Element	Symbol	Mass number	Half-life
48	Cadmium	Cd	104	0,962 h
			107	6,50 h
			109	1,27 a
			113	$7{,}70.10^{15}$ a
			113m	14,1 a
			115	2,23 d
			115m	44,6 d
			117	2,49 h
			117m	3,36 h
49	Indium	In	109	4,20 h
			110	4,90 h
			110m	1,15 h
			111	2,80 d
			112	0,250 h
			113m	1,66 h
			114m	49,5 d
			115	$4{,}41.10^{14}$ a
			115m	4,49 h
			116m	0,905 h
			117	0,700 h
			117m	1,94 h
			119m	0,300 h
50	Tin	Sn	110	4,41 h
			111	0,588 h
			113	115 d
			117m	13,6 d
			119m	293 d
			121	1,13 d
			121m	44,0 a
			123	129 d
			123m	0,668 h
			125	9,64 d
			126	$2{,}38.10^{5}$ a
			127	2,10 h
			128	0,984 h

Atomic number	Element	Symbol	Mass number	Half-life
51	Antimony	Sb	115	0,535 h
			116	0,263 h
			116m	1,00 h
			117	2,80 h
			118m	5,00 h
			119	1,59 d
			120m	5,76 d
			120	0,265 h
			122	2,70 d
			124	60,2 d
			124m	0,337 h
			125	2,76 a
			126	12,4 d
			126m	0,319 h
			127	3,85 d
			128	9,01 h
			128m	0,173 h
			129	4,40 h
			130	0,658 h
			131	0,384 h
52	Tellurium	Te	116	2,49 h
			121	19,2 d
			121m	154 d
			123	$1{,}00.10^{13}$ a
			123m	119 d
			125m	57,4 d
			127	9,35 h
			127m	106 d
			129	1,16 h
			129m	33,6 d
			131	0,417 h
			131m	1,25 d
			132	3,23 d
			133	0,208 h
			133m	0,923 h
			134	0,697 h

Atomic number	Element	Symbol	Mass number	Half-life
53	Iodine	I	120	1,35 h
			120m	0,883 h
			121	2,12 h
			123	13,2 h
			124	4,18 d
			125	59,4 d
			126	12,9 d
			128	0,416 h
			129	$1{,}61.10^{7}$ a
			130	12,4 h
			131	8,02 d
			132	2,30 h
			132m	1,39 h
			133	20,9 h
			134	0,875 h
			135	6,57 h
54	Xenon	Xe	120	0,667 h
			121	0,668 h
			122	20,1 h
			123	2,08 h
			125	16,9 h
			127	36,4 d
			129m	8,88 d
			131m	12,0 d
			133	5,25 d
			133m	2,20 d
			135	9,14 h
			135m	0,255 h
			138	0,235 h
55	Caesium	Cs	125	0,750 h
			127	6,25 h
			129	1,34 d
			130	0,487 h
			131	9,69 d
			132	6,48 d
			134	2,06 a
			134m	2,91 h
			135	$2{,}30.10^{6}$ a
			135m	0,883 h
			136	13,2 d
			137	30,0 a
			138	0,557 h

Atomic number	Element	Symbol	Mass number	Half-life
56	Barium	Ba	126	1,67 h
			128	2,43 d
			131	11,5 d
			131m	0,243 h
			133	10,5 a
			133m	1,62 d
			135m	1,20 d
			139	1,38 h
			140	12,8 d
			141	0,304 h
			142	0,177 h
57	Lanthanum	La	131	0,983 h
			132	4,80 h
			135	19,5 h
			137	$6{,}00.10^{4}$ a
			138	$1{,}04.10^{11}$ a
			140	1,69 d
			141	3,92 h
			142	1,52 h
			143	0,237 h
58	Cerium	Ce	134	3,16 d
			135	17,7 h
			137	9,00 h
			137m	1,43 d
			139	138 d
			141	32,5 d
			143	1,38 d
			144	285 d
59	Praseodymium	Pr	136	0,218 h
			137	1,28 h
			138m	2,12 h
			139	4,41 h
			142	19,1 h
			142m	0,243 h
			143	13,6 d
			144	0,288 h
			145	5,98 h
			147	0,223 h
60	Neodymium	Nd	136	0,844 h
			138	5,04 h
			139	0,495 h
			139m	5,50 h
			141	2,49 h
			147	11,0 d
			149	1,73 h
			151	0,207 h

Atomic number	Element	Symbol	Mass number	Half-life
61	Promethium	Pm	141	0,348 h
			143	265 d
			144	363 d
			145	17,7 a
			146	5,53 a
			147	2,62 a
			148	5,37 d
			148m	41,3 d
			149	2,21 d
			150	2,68 h
			151	1,18 d
62	Samarium	Sm	141	0,170 h
			141m	0,377 h
			142	1,21 h
			145	340 d
			146	$1{,}03.10^{8}$ a
			147	$1{,}07.10^{11}$ a
			151	90,0 a
			153	1,93 d
			155	0,372 h
			156	9,40 h
63	Europium	Eu	145	5,93 d
			146	4,61 d
			147	24,1 d
			148	54,5 d
			149	93,1 d
			150	36,9 a
			150m	12,8 h
			152	13,5 a
			152m	9,31 h
			154	8,60 a
			155	4,75 a
			156	15,2 d
			157	15,2 h
			158	0,765 h
64	Gadolinium	Gd	145	0,383 h
			146	48,3 d
			147	1,59 d
			148	74,6 a
			149	9,28 d
			151	124 d
			152	$1{,}08.10^{14}$ a
			153	240 d
			159	18,5 h

Atomic number	Element	Symbol	Mass number	Half-life
65	Terbium	Tb	147	1,70 h
			149	4,12 h
			150	3,48 h
			151	17,6 h
			153	2,34 d
			154	21,5 h
			155	5,32 d
			156	5,35 d
			156m l	1,02 d
			156m s	5,30 h
			157	71,0 a
			158	180 a
			160	72,3 d
			161	6,91 d
66	Dysprosium	Dy	155	9,90 h
			157	8,14 h
			159	144 d
			165	2,33 h
			166	3,40 d
67	Holmium	Ho	155	0,800 h
			157	0,210 h
			159	0,551 h
			161	2,48 h
			162	0,250 h
			162m	1,12 h
			164	0,483 h
			164m	0,625 h
			166	1,12 d
			166m	$1{,}20.10^{3}$ a
			167	3,10 h
68	Erbium	Er	161	3,21 h
			165	10,4 h
			169	9,40 d
			171	7,52 h
			172	2,05 d
69	Thulium	Tm	162	0,362 h
			166	7,70 h
			167	9,25 d
			170	128 d
			171	1,92 a
			172	2,65 d
			173	8,24 h
			175	0,253 h

Atomic number	Element	Symbol	Mass number	Half-life
70	Ytterbium	Yb	162	0,315 h
			166	2,36 d
			167	0,292 h
			169	32,0 d
			175	4,18 d
			177	1,91 h
			178	1,23 h
71	Lutetium	Lu	169	1,42 d
			170	2,01 d
			171	8,24 d
			172	6,70 d
			173	1,37 a
			174	3,31 a
			174m	142 d
			176	$3{,}79.10^{10}$ a
			176m	3,64 h
			177	6,65 d
			177m	160 d
			178	0,473 h
			178m	0,385 h
			179	4,59 h
72	Hafnium	Hf	170	16,0 h
			172	1,87 a
			173	23,6 h
			175	70,0 d
			177m	0,857 h
			178m	31,0 a
			179m	25,0 d
			180m	5,50 h
			181	42,4 d
			182	$9{,}00.10^{6}$ a
			182m	1,02 h
			183	1,07 h
			184	4,12 h

Atomic number	Element	Symbol	Mass number	Half-life
73	Tantalum	Ta	172	0,613 h
			173	3,14 h
			174	1,05 h
			175	10,5 h
			176	8,09 h
			177	2,36 d
			178	2,36 h
			179	1,82 a
			180	$1{,}20.10^{15}$ a
			180m	8,15 h
			182	115 d
			182m	0,264 h
			183	5,10 d
			184	8,70 h
			185	0,823 h
			186	0,175 h
74	Tungsten	W	176	2,50 h
			177	2,25 h
			178	21,6 d
			179	0,618 h
			181	121 d
			185	75,1 d
			187	23,7 h
			188	69,8 d
75	Rhenium	Re	177	0,233 h
			178	0,220 h
			181	19,9 h
			182	2,67 d
			182m	12,7 h
			184	38,0 d
			184m	169 d
			186	3,72 d
			186m	$2{,}00.10^{5}$ a
			187	$4{,}30.10^{10}$ a
			188	17,0 h
			188m	0,310 h
			189	1,01 d
76	Osmium	Os	180	0,358 h
			181	1,75 h
			182	22,1 h
			185	93,6 d
			189m	5,80 h
			191	15,4 d
			191m	13,1 h
			193	1,25 d
			194	6,00 a

Atomic number	Element	Symbol	Mass number	Half-life
77	Iridium	Ir	182	0,250 h
			184	3,09 h
			185	14,4 h
			186	16,6 h
			186m	1,90 h
			187	10,5 h
			188	1,73 d
			189	13,2 d
			190	11,8 d
			190m l	3,25 h
			190m s	1,20 h
			192	73,8 d
			192m	241 a
			193m	10,5 d
			194	19,3 h
			194m	171 d
			195	2,50 h
			195m	3,80 h
78	Platinum	Pt	186	2,08 h
			188	10,2 d
			189	10,9 h
			191	2,80 d
			193	50,0 a
			193m	4,33 d
			195m	4,02 d
			197	19,9 h
			197m	1,59 h
			199	0,513 h
			200	12,5 h
79	Gold	Au	193	17,6 h
			194	1,58 d
			195	185 d
			196	6,18 d
			198	2,69 d
			198m	2,27 d
			199	3,14 d
			200	0,807 h
			200m	18,7 h
			201	0,433 h
80	Mercury	Hg	193	3,80 h
			193m	11,8 h
			194	444 a
			195	9,90 h
			195m	1,73 d
			197	2,67 d
			197m	23,8 h
			199m	0,710 h
			203	46,6 d

Atomic number	Element	Symbol	Mass number	Half-life
81	Thallium	Tl	194	0,550 h
			194m	0,547 h
			195	1,16 h
			197	2,84 h
			198	5,30 h
			198m	1,87 h
			199	7,42 h
			200	1,09 d
			201	3,04 d
			202	12,2 d
			204	3,79 a
82	Lead	Pb	195	0,250 h
			195m	0,250 h
			198	2,40 h
			199	1,50 h
			199m	0,203 h
			200	21,5 h
			201	9,33 h
			202	$5{,}25.10^{4}$ a
			202m	3,53 h
			203	2,16 d
			205	$1{,}73.10^{7}$ a
			209	3,28 h
			210	22,2 a
			211	0,602 h
			212	10,6 h
			214	0,449 h
83	Bismuth	Bi	200	0,607 h
			200m	0,517 h
			201	1,80 h
			201m	0,985 h
			202	1,72 h
			203	11,8 h
			205	15,3 d
			206	6,24 d
			207	32,9 a
			210	5,01 d
			210m	$3{,}04.10^{6}$ a
			212	1,01 h
			213	0,760 h
			214	0,330 h
84	Polonium	Po	203	0,612 h
			205	1,66 h
			207	5,80 h
			209	115 a
			210	138 d
85	Astatine	At	207	1,80 h
			211	7,22 h

Atomic number	Element	Symbol	Mass number	Half-life
86	Radon	Rn	208	0,406 h
			209	0,475 h
			210	2,40 h
			211	14,6 h
			212	0,398 h
			221	0,417 h
			222	3,82 d
			223	0,387 h
			224	1,78 h
87	Francium	Fr	222	0,237 h
			223	0,367 h
88	Radium	Ra	223	11,4 d
			224	3,63 d
			225	14,8 d
			226	$1{,}60.10^{3}$ a
			227	0,703 h
			228	5,75 a
89	Actinium	Ac	224	2,78 h
			225	10,0 d
			226	1,22 d
			227	21,8 a
			228	6,15 h
90	Thorium	Th	226	0,513 h
			227	18,7 d
			228	1,91 a
			229	$7{,}88.10^{3}$ a
			230	$7{,}54.10^{4}$ a
			231	1,06 d
			232	$1{,}40.10^{10}$ a
			233	0,369 h
			234	24,1 d
91	Protactinium	Pa	227	0,638 h
			228	22,0 h
			230	17,4 d
			231	$3{,}27.10^{4}$ a
			232	1,31 d
			233	27,0 d
			234	6,70 h

Atomic number	Element	Symbol	Mass number	Half-life
92	Uranium	U	230	20,2 d
			231	4,20 d
			232	70,6 a
			233	$1,59.10^5$ a
			234	$2,46.10^5$ a
			235	$7,04.10^8$ a
			236	$2,34.10^7$ a
			237	6,75 d
			238	$4,47.10^9$ a
			239	0,391 h
			240	14,1 h
93	Neptunium	Np	232	0,245 h
			233	0,603 h
			234	4,40 d
			235	1,08 a
			236	$1,54.10^5$ a
			236m	22,5 h
			237	$2,14.10^6$ a
			238	2,10 d
			239	2,36 d
			240	1,03 h
94	Plutonium	Pu	234	8,80 h
			235	0,422 h
			236	2,87 a
			237	45,2 d
			238	87,7 a
			239	$2,41.10^4$ a
			240	$6,56.10^3$ a
			241	14,3 a
			242	$3,73.10^5$ a
			243	4,96 h
			244	$8,11.10^7$ a
			245	10,5 h
			246	10,8 d
95	Americium	Am	237	1,22 h
			238	1,63 h
			239	11,9 h
			240	2,12 d
			241	433 a
			242	16,0 h
			242m	143 a
			243	$7,37.10^3$ a
			244	10,1 h
			244m	0,433 h
			245	2,05 h
			246	0,650 h
			246m	0,417 h

Atomic number	Element	Symbol	Mass number	Half-life
96	Curium	Cm	238	2,40 h
			240	27,0 d
			241	32,8 d
			242	163 d
			243	28,8 a
			244	18,1 a
			245	$8{,}50.10^3$ a
			246	$4{,}72.10^3$ a
			247	$1{,}56.10^7$ a
			248	$3{,}48.10^5$ a
			249	1,07 h
			250	$9{,}70.10^3$ a
97	Berkelium	Bk	245	4,94 d
			246	1,80 d
			247	$1{,}38.10^3$ a
			249	330 d
			250	3,22 h
98	Californium	Cf	244	0,323 h
			246	1,49 d
			248	334 d
			249	351 a
			250	13,1 a
			251	898 a
			252	2,65 a
			253	17,8 d
			254	60,5 d
99	Einsteinium	Es	250	9,60 h
			250m	2,22 h
			251	1,38 d
			253	20,5 d
			254	276 d
			254m	1,64 d
100	Fermium	Fm	252	1,06 d
			253	3,00 d
			254	3,24 h
			255	20,1 h
			257	100 d
101	Mendelevium	Md	257	5,30 h
			258	1,00 h
			258m	51,5 d

Note: m – metastable state; l – longer living of two metastable states; s – shorter living of two metastable states.

Table No. 2

Standardized data used in protection planning and calculation of secondary (derived) limits and limits for radiation control purposes

Occupationally exposed workers						
Exposure time for one year [h]	1700					
Inhaled air for one year [m^3]	2400					
Population						
Age (years)	up to 1	1-2	2-7	7-12	12-17	over 17 (adults)
Group	1	2	3	4	5	6
Exposure time for one year [h]	8800 for all groups					
Inhaled air for one year [10^3 m^3]	1,0	1,9	3,2	5,6	7,3	8,1
Volume of ingested water for one year [l] (*)		260	365	550	660	730

(*) Ingestion of radionuclides with water for children up to 1 year of age is not considered as they are mainly fed with breast milk or its substitutes.

Table No. 3

Secondary limits of the annual intake of individual radionuclides into the body of occupationally exposed workers by inhalation of aerosols, soluble or chemically active vapours (LAI_{INH}), the average annual volume activity for individual radionuclides in the air of the work premises ($LAAVA_A$) and the annual intake of individual radionuclides in the body by ingestion (1) (expected effective dose 20 $mSv.a^{-1}$)

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
H-3 (tritiated water)			$1{,}1.10^9$
H-3 (tritiated water, vapour)		$4{,}6.10^5$	
H-3 (elemental hydrogen)		$4{,}6.10^9$	
H-3 (tritium methane)		$4{,}6.10^7$	
H-3 (organic compounds)			$4{,}8.10^8$
H-3 (organic compounds, vapour)		$2{,}0.10^5$	
Be-7	$3{,}8.10^8$	$1{,}6.10^5$	$7{,}1.10^8$
Be-10	$6{,}3.10^5$	$2{,}6.10^2$	$1{,}8.10^7$
C-11			$8{,}3.10^8$
C-11 (vapour)		$2{,}6.10^6$	
C-11 (dioxide)		$3{,}8.10^6$	
C-11 (monoxide)		$6{,}9.10^6$	
C-14			$3{,}4.10^7$
C-14 (vapour)		$1{,}4.10^4$	
C-14 (dioxide)		$1{,}3.10^6$	
C-14 (monoxide)		$1{,}0.10^7$	
F-18	$2{,}2.10^8$	$9{,}0.10^4$	$4{,}1.10^8$
Na-22	$1{,}0.10^7$	$4{,}2.10^3$	$6{,}3.10^6$
Na-24	$3{,}8.10^7$	$1{,}6.10^4$	$4{,}7.10^7$
Mg-28	$1{,}2.10^7$	$4{,}9.10^3$	$9{,}1.10^6$
Al-26	$1{,}1.10^6$	$4{,}6.10^2$	$5{,}7.10^6$
Si-31	$1{,}8.10^8$	$7{,}6.10^4$	$1{,}3.10^8$
Si-32	$1{,}8.10^5$	$7{,}6.10^1$	$3{,}6.10^7$
P-32	$6{,}3.10^6$	$2{,}6.10^3$	$8{,}3.10^6$
P-33	$1{,}4.10^7$	$6{,}0.10^3$	$8{,}3.10^7$
S-35 (inorganic)	$1{,}5.10^7$	$6{,}4.10^3$	$1{,}1.10^8$
S-35 (carbon disulfide)		$1{,}2.10^4$	
S-35 (dioxide)		$7{,}6.10^4$	
S-35 (organic)			$2{,}6.10^7$
Cl-36	$2{,}9.10^6$	$1{,}2.10^3$	$2{,}2.10^7$
Cl-38	$2{,}7.10^8$	$1{,}1.10^5$	$1{,}7.10^8$
Cl-39	$2{,}6.10^8$	$1{,}1.10^5$	$2{,}4.10^8$
K-40	$6{,}7.10^6$	$2{,}8.10^3$	$3{,}2.10^6$
K-42	$1{,}0.10^8$	$4{,}2.10^4$	$4{,}7.10^7$
K-43	$7{,}7.10^7$	$3{,}2.10^4$	$8{,}0.10^7$
K-44	$5{,}4.10^8$	$2{,}3.10^5$	$2{,}4.10^8$
K-45	$7{,}1.10^8$	$3{,}0.10^5$	$3{,}7.10^8$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Ca-41	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$6{,}9.10^{7}$
Ca-45	$7{,}4.10^{6}$	$3{,}1.10^{3}$	$2{,}6.10^{7}$
Ca-47	$9{,}5.10^{6}$	$4{,}0.10^{3}$	$1{,}3.10^{7}$
Sc-43	$1{,}1.10^{8}$	$4{,}6.10^{4}$	$1{,}1.10^{8}$
Sc-44	$6{,}7.10^{7}$	$2{,}8.10^{4}$	$5{,}7.10^{7}$
Sc-44m	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$8{,}3.10^{6}$
Sc-46	$3{,}1.10^{6}$	$1{,}3.10^{3}$	$1{,}3.10^{7}$
Sc-47	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$3{,}7.10^{7}$
Sc-48	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$1{,}2.10^{7}$
Sc-49	$3{,}3.10^{8}$	$1{,}4.10^{5}$	$2{,}4.10^{8}$
Ti-44	$1{,}7.10^{5}$	$6{,}9.10^{1}$	$3{,}4.10^{6}$
Ti-45	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$1{,}3.10^{8}$
V-47	$4{,}0.10^{8}$	$1{,}7.10^{5}$	$3{,}2.10^{8}$
V-48	$7{,}4.10^{6}$	$3{,}1.10^{3}$	$1{,}0.10^{7}$
V-49	$6{,}3.10^{8}$	$2{,}6.10^{5}$	$1{,}1.10^{9}$
Cr-48	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$1{,}0.10^{8}$
Cr-49	$3{,}4.10^{8}$	$1{,}4.10^{5}$	$3{,}3.10^{8}$
Cr-51	$5{,}6.10^{8}$	$2{,}3.10^{5}$	$5{,}3.10^{8}$
Mn-51	$2{,}9.10^{8}$	$1{,}2.10^{5}$	$2{,}2.10^{8}$
Mn-52	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$1{,}1.10^{7}$
Mn-52m	$4{,}0.10^{8}$	$1{,}7.10^{5}$	$2{,}9.10^{8}$
Mn-53	$3{,}8.10^{8}$	$1{,}6.10^{5}$	$6{,}7.10^{8}$
Mn-54	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$2{,}8.10^{7}$
Mn-56	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$8{,}0.10^{7}$
Fe-52	$2{,}1.10^{7}$	$8{,}8.10^{3}$	$1{,}4.10^{7}$
Fe-55	$2{,}2.10^{7}$	$9{,}1.10^{3}$	$6{,}1.10^{7}$
Fe-59	$5{,}7.10^{6}$	$2{,}4.10^{3}$	$1{,}1.10^{7}$
Fe-60	$6{,}1.10^{4}$	$2{,}5.10^{1}$	$1{,}8.10^{5}$
Co-55	$2{,}4.10^{7}$	$1{,}0.10^{4}$	$1{,}8.10^{7}$
Co-56	$3{,}2.10^{6}$	$1{,}3.10^{3}$	$8{,}0.10^{6}$
Co-57	$2{,}1.10^{7}$	$8{,}9.10^{3}$	$9{,}5.10^{7}$
Co-58	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$2{,}7.10^{7}$
Co-58m	$1{,}2.10^{9}$	$4{,}9.10^{5}$	$8{,}3.10^{8}$
Co-60	$6{,}9.10^{5}$	$2{,}9.10^{2}$	$5{,}9.10^{6}$
Co-60m	$1{,}5.10^{10}$	$6{,}4.10^{6}$	$1{,}2.10^{10}$
Co-61	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$2{,}7.10^{8}$
Co-62m	$5{,}4.10^{8}$	$2{,}3.10^{5}$	$4{,}3.10^{8}$
Ni-56	$2{,}1.10^{7}$	$8{,}7.10^{3}$	$2{,}3.10^{7}$
Ni-56 (carbonyl)		$6{,}9.10^{3}$	
Ni-57	$2{,}6.10^{7}$	$1{,}1.10^{4}$	$2{,}3.10^{7}$
Ni-57 (carbonyl)		$1{,}5.10^{4}$	
Ni-59	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$3{,}2.10^{8}$
Ni-59 (carbonyl)		$1{,}0.10^{4}$	
Ni-63	$3{,}8.10^{7}$	$1{,}6.10^{4}$	$1{,}3.10^{8}$
Ni-63 (carbonyl)		$4{,}2.10^{3}$	
Ni-65	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$1{,}1.10^{8}$
Ni-65 (carbonyl)		$2{,}3.10^{4}$	
Ni-66	$1{,}1.10^{7}$	$4{,}4.10^{3}$	$6{,}7.10^{6}$
Ni-66 (carbonyl)		$5{,}2.10^{3}$	
Cu-60	$3{,}2.10^{8}$	$1{,}3.10^{5}$	$2{,}9.10^{8}$
Cu-61	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}7.10^{8}$
Cu-64	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$1{,}7.10^{8}$
Cu-67	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$5{,}9.10^{7}$
Zn-62	$3{,}0.10^{7}$	$1{,}3.10^{4}$	$2{,}1.10^{7}$
Zn-63	$3{,}3.10^{8}$	$1{,}4.10^{5}$	$2{,}5.10^{8}$
Zn-65	$6{,}9.10^{6}$	$2{,}9.10^{3}$	$5{,}1.10^{6}$
Zn-69	$4{,}7.10^{8}$	$1{,}9.10^{5}$	$6{,}5.10^{8}$
Zn-69m	$6{,}1.10^{7}$	$2{,}5.10^{4}$	$6{,}1.10^{7}$
Zn-71m	$8{,}3.10^{7}$	$3{,}5.10^{4}$	$8{,}3.10^{7}$
Zn-72	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$1{,}4.10^{7}$
Ga-65	$6{,}9.10^{8}$	$2{,}9.10^{5}$	$5{,}4.10^{8}$
Ga-66	$2{,}8.10^{7}$	$1{,}2.10^{4}$	$1{,}7.10^{7}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Ga-67	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$1{,}1.10^{8}$
Ga-68	$2{,}5.10^{8}$	$1{,}0.10^{5}$	$2{,}0.10^{8}$
Ga-70	$7{,}7.10^{8}$	$3{,}2.10^{5}$	$6{,}5.10^{8}$
Ga-72	$2{,}4.10^{7}$	$9{,}9.10^{3}$	$1{,}8.10^{7}$
Ga-73	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$7{,}7.10^{7}$
Ge-66	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$2{,}0.10^{8}$
Ge-67	$4{,}8.10^{8}$	$2{,}0.10^{5}$	$3{,}1.10^{8}$
Ge-68	$1{,}5.10^{6}$	$6{,}4.10^{2}$	$1{,}5.10^{7}$
Ge-69	$5{,}4.10^{7}$	$2{,}3.10^{4}$	$8{,}3.10^{7}$
Ge-71	$1{,}8.10^{9}$	$7{,}6.10^{5}$	$1{,}7.10^{9}$
Ge-75	$3{,}7.10^{8}$	$1{,}5.10^{5}$	$4{,}3.10^{8}$
Ge-77	$4{,}4.10^{7}$	$1{,}9.10^{4}$	$6{,}1.10^{7}$
Ge-78	$1{,}4.10^{8}$	$6{,}0.10^{4}$	$1{,}7.10^{8}$
As-69	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$3{,}5.10^{8}$
As-70	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}5.10^{8}$
As-71	$4{,}0.10^{7}$	$1{,}7.10^{4}$	$4{,}3.10^{7}$
As-72	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$1{,}1.10^{7}$
As-73	$2{,}2.10^{7}$	$9{,}0.10^{3}$	$7{,}7.10^{7}$
As-74	$9{,}5.10^{6}$	$4{,}0.10^{3}$	$1{,}5.10^{7}$
As-76	$2{,}2.10^{7}$	$9{,}1.10^{3}$	$1{,}3.10^{7}$
As-77	$4{,}8.10^{7}$	$2{,}0.10^{4}$	$5{,}0.10^{7}$
As-78	$1{,}4.10^{8}$	$6{,}0.10^{4}$	$9{,}5.10^{7}$
Se-70	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}4.10^{8}$
Se-73	$8{,}3.10^{7}$	$3{,}5.10^{4}$	$5{,}1.10^{7}$
Se-73m	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$4{,}9.10^{8}$
Se-75	$1{,}2.10^{7}$	$4{,}9.10^{3}$	$7{,}7.10^{6}$
Se-79	$6{,}5.10^{6}$	$2{,}7.10^{3}$	$6{,}9.10^{6}$
Se-81	$8{,}3.10^{8}$	$3{,}5.10^{5}$	$7{,}4.10^{8}$
Se-81m	$2{,}9.10^{8}$	$1{,}2.10^{5}$	$3{,}4.10^{8}$
Se-83	$3{,}8.10^{8}$	$1{,}6.10^{5}$	$3{,}9.10^{8}$
Br-74	$2{,}9.10^{8}$	$1{,}2.10^{5}$	$2{,}4.10^{8}$
Br-74m	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}4.10^{8}$
Br-75	$2{,}4.10^{8}$	$9{,}8.10^{4}$	$2{,}5.10^{8}$
Br-76	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$4{,}3.10^{7}$
Br-77	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$2{,}1.10^{8}$
Br-80	$1{,}2.10^{9}$	$4{,}9.10^{5}$	$6{,}5.10^{8}$
Br-80m	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$1{,}8.10^{8}$
Br-82	$2{,}3.10^{7}$	$9{,}5.10^{3}$	$3{,}7.10^{7}$
Br-83	$3{,}0.10^{8}$	$1{,}2.10^{5}$	$4{,}7.10^{8}$
Br-84	$3{,}2.10^{8}$	$1{,}3.10^{5}$	$2{,}3.10^{8}$
Rb-79	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$4{,}0.10^{8}$
Rb-81	$2{,}9.10^{8}$	$1{,}2.10^{5}$	$3{,}7.10^{8}$
Rb-81m	$1{,}5.10^{9}$	$6{,}4.10^{5}$	$2{,}1.10^{9}$
Rb-82m	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$1{,}5.10^{8}$
Rb-83	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$1{,}1.10^{7}$
Rb-84	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$7{,}1.10^{6}$
Rb-86	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$7{,}1.10^{6}$
Rb-87	$2{,}6.10^{7}$	$1{,}1.10^{4}$	$1{,}3.10^{7}$
Rb-88	$7{,}1.10^{8}$	$3{,}0.10^{5}$	$2{,}2.10^{8}$
Rb-89	$8{,}0.10^{8}$	$3{,}3.10^{5}$	$4{,}3.10^{8}$
Sr-80	$9{,}5.10^{7}$	$4{,}0.10^{4}$	$5{,}7.10^{7}$
Sr-81	$3{,}3.10^{8}$	$1{,}4.10^{5}$	$2{,}6.10^{8}$
Sr-82	$2{,}0.10^{6}$	$8{,}3.10^{2}$	$3{,}3.10^{6}$
Sr-83	$4{,}1.10^{7}$	$1{,}7.10^{4}$	$3{,}4.10^{7}$
Sr-85	$2{,}6.10^{7}$	$1{,}1.10^{4}$	$3{,}6.10^{7}$
Sr-85m	$2{,}7.10^{9}$	$1{,}1.10^{6}$	$3{,}3.10^{9}$
Sr-87m	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$6{,}1.10^{8}$
Sr-89	$2{,}7.10^{6}$	$1{,}1.10^{3}$	$7{,}7.10^{6}$
Sr-90	$1{,}3.10^{5}$	$5{,}6.10^{1}$	$7{,}1.10^{5}$
Sr-91	$3{,}5.10^{7}$	$1{,}5.10^{4}$	$2{,}6.10^{7}$
Sr-92	$5{,}9.10^{7}$	$2{,}5.10^{4}$	$4{,}1.10^{7}$
Y-86	$2{,}5.10^{7}$	$1{,}0.10^{4}$	$2{,}1.10^{7}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Y-86m	$4{,}1.10^{8}$	$1{,}7.10^{5}$	$3{,}6.10^{8}$
Y-87	$3{,}8.10^{7}$	$1{,}6.10^{4}$	$3{,}6.10^{7}$
Y-88	$4{,}9.10^{6}$	$2{,}0.10^{3}$	$1{,}5.10^{7}$
Y-90	$1{,}2.10^{7}$	$4{,}9.10^{3}$	$7{,}4.10^{6}$
Y-90m	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$1{,}2.10^{8}$
Y-91	$2{,}4.10^{6}$	$9{,}9.10^{2}$	$8{,}3.10^{6}$
Y-91m	$1{,}3.10^{9}$	$5{,}6.10^{5}$	$1{,}8.10^{9}$
Y-92	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$4{,}1.10^{7}$
Y-93	$3{,}3.10^{7}$	$1{,}4.10^{4}$	$1{,}7.10^{7}$
Y-94	$4{,}3.10^{8}$	$1{,}8.10^{5}$	$2{,}5.10^{8}$
Y-95	$7{,}7.10^{8}$	$3{,}2.10^{5}$	$4{,}3.10^{8}$
Zr-86	$2{,}9.10^{7}$	$1{,}2.10^{4}$	$2{,}3.10^{7}$
Zr-88	$4{,}9.10^{6}$	$2{,}0.10^{3}$	$6{,}1.10^{7}$
Zr-89	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$2{,}5.10^{7}$
Zr-93	$6{,}9.10^{5}$	$2{,}9.10^{2}$	$7{,}1.10^{7}$
Zr-95	$3{,}6.10^{6}$	$1{,}5.10^{3}$	$2{,}3.10^{7}$
Zr-97	$1{,}4.10^{7}$	$6{,}0.10^{3}$	$9{,}5.10^{6}$
Nb-88	$4{,}0.10^{8}$	$1{,}7.10^{5}$	$3{,}2.10^{8}$
Nb-89	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$6{,}7.10^{7}$
Nb-89m	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}4.10^{8}$
Nb-90	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$1{,}7.10^{7}$
Nb-93m	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$1{,}7.10^{8}$
Nb-94	$4{,}4.10^{5}$	$1{,}9.10^{2}$	$1{,}2.10^{7}$
Nb-95	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$3{,}4.10^{7}$
Nb-95m	$2{,}4.10^{7}$	$9{,}8.10^{3}$	$3{,}6.10^{7}$
Nb-96	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$1{,}8.10^{7}$
Nb-97	$2{,}8.10^{8}$	$1{,}2.10^{5}$	$2{,}9.10^{8}$
Nb-98	$2{,}0.10^{8}$	$8{,}4.10^{4}$	$1{,}8.10^{8}$
Mo-90	$3{,}6.10^{7}$	$1{,}5.10^{4}$	$3{,}2.10^{7}$
Mo-93	$9{,}1.10^{6}$	$3{,}8.10^{3}$	$7{,}7.10^{6}$
Mo-93m	$6{,}7.10^{7}$	$2{,}8.10^{4}$	$7{,}1.10^{7}$
Mo-99	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$1{,}7.10^{7}$
Mo-101	$4{,}4.10^{8}$	$1{,}9.10^{5}$	$4{,}8.10^{8}$
Tc-93	$3{,}1.10^{8}$	$1{,}3.10^{5}$	$4{,}1.10^{8}$
Tc-93m	$6{,}5.10^{8}$	$2{,}7.10^{5}$	$8{,}3.10^{8}$
Tc-94	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$1{,}1.10^{8}$
Tc-94m	$2{,}5.10^{8}$	$1{,}0.10^{5}$	$1{,}8.10^{8}$
Tc-95	$1{,}1.10^{8}$	$4{,}6.10^{4}$	$1{,}3.10^{8}$
Tc-95m	$2{,}3.10^{7}$	$9{,}6.10^{3}$	$3{,}2.10^{7}$
Tc-96	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$1{,}8.10^{7}$
Tc-96m	$1{,}8.10^{9}$	$7{,}6.10^{5}$	$1{,}5.10^{9}$
Tc-97	$9{,}5.10^{7}$	$4{,}0.10^{4}$	$2{,}4.10^{8}$
Tc-97m	$6{,}5.10^{6}$	$2{,}7.10^{3}$	$3{,}0.10^{7}$
Tc-98	$2{,}5.10^{6}$	$1{,}0.10^{3}$	$8{,}7.10^{6}$
Tc-99	$5{,}1.10^{6}$	$2{,}1.10^{3}$	$2{,}6.10^{7}$
Tc-99m	$6{,}9.10^{8}$	$2{,}9.10^{5}$	$9{,}1.10^{8}$
Tc-101	$9{,}5.10^{8}$	$4{,}0.10^{5}$	$1{,}1.10^{9}$
Tc-104	$4{,}2.10^{8}$	$1{,}7.10^{5}$	$2{,}5.10^{8}$
Ru-94	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$2{,}1.10^{8}$
Ru-94 (tetroxide)		$1{,}5.10^{5}$	
Ru-97	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$1{,}3.10^{8}$
Ru-97 (tetroxide)		$6{,}9.10^{4}$	
Ru-103	$7{,}1.10^{6}$	$3{,}0.10^{3}$	$2{,}7.10^{7}$
Ru-103 (tetroxide)		$7{,}6.10^{3}$	
Ru-105	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$7{,}7.10^{7}$
Ru-105 (tetroxide)		$4{,}6.10^{4}$	
Ru-106	$3{,}2.10^{5}$	$1{,}3.10^{2}$	$2{,}9.10^{6}$
Ru-106 (tetroxide)		$4{,}6.10^{2}$	
Rh-99	$2{,}2.10^{7}$	$9{,}4.10^{3}$	$3{,}9.10^{7}$
Rh-99m	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$3{,}0.10^{8}$
Rh-100	$3{,}2.10^{7}$	$1{,}3.10^{4}$	$2{,}8.10^{7}$
Rh-101	$4{,}0.10^{6}$	$1{,}7.10^{3}$	$3{,}6.10^{7}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Rh-101m	$7{,}4.10^{7}$	$3{,}1.10^{4}$	$9{,}1.10^{7}$
Rh-102	$1{,}3.10^{6}$	$5{,}2.10^{2}$	$7{,}7.10^{6}$
Rh-102m	$3{,}0.10^{6}$	$1{,}2.10^{3}$	$1{,}7.10^{7}$
Rh-103m	$8{,}0.10^{9}$	$3{,}3.10^{6}$	$5{,}3.10^{9}$
Rh-105	$4{,}5.10^{7}$	$1{,}9.10^{4}$	$5{,}4.10^{7}$
Rh-106m	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$1{,}3.10^{8}$
Rh-107	$7{,}1.10^{8}$	$3{,}0.10^{5}$	$8{,}3.10^{8}$
Pd-100	$2{,}1.10^{7}$	$8{,}6.10^{3}$	$2{,}1.10^{7}$
Pd-101	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}1.10^{8}$
Pd-103	$5{,}0.10^{7}$	$2{,}1.10^{4}$	$1{,}1.10^{8}$
Pd-107	$3{,}6.10^{7}$	$1{,}5.10^{4}$	$5{,}4.10^{8}$
Pd-109	$4{,}0.10^{7}$	$1{,}7.10^{4}$	$3{,}6.10^{7}$
Ag-102	$6{,}3.10^{8}$	$2{,}6.10^{5}$	$5{,}0.10^{8}$
Ag-103	$4{,}4.10^{8}$	$1{,}9.10^{5}$	$4{,}7.10^{8}$
Ag-104	$2{,}8.10^{8}$	$1{,}2.10^{5}$	$3{,}3.10^{8}$
Ag-104m	$4{,}4.10^{8}$	$1{,}9.10^{5}$	$3{,}7.10^{8}$
Ag-105	$2{,}5.10^{7}$	$1{,}0.10^{4}$	$4{,}3.10^{7}$
Ag-106	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$6{,}3.10^{8}$
Ag-106m	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$1{,}3.10^{7}$
Ag-108m	$5{,}7.10^{5}$	$2{,}4.10^{2}$	$8{,}7.10^{6}$
Ag-110m	$1{,}7.10^{6}$	$6{,}9.10^{2}$	$7{,}1.10^{6}$
Ag-111	$1{,}2.10^{7}$	$4{,}9.10^{3}$	$1{,}5.10^{7}$
Ag-112	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$4{,}7.10^{7}$
Ag-115	$4{,}5.10^{8}$	$1{,}9.10^{5}$	$3{,}3.10^{8}$
Cd-104	$3{,}2.10^{8}$	$1{,}3.10^{5}$	$3{,}4.10^{8}$
Cd-107	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$3{,}2.10^{8}$
Cd-109	$2{,}1.10^{6}$	$8{,}7.10^{2}$	$1{,}0.10^{7}$
Cd-113	$1{,}4.10^{5}$	$6{,}0.10^{1}$	$8{,}0.10^{5}$
Cd-113m	$1{,}5.10^{5}$	$6{,}4.10^{1}$	$8{,}7.10^{5}$
Cd-115	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$1{,}4.10^{7}$
Cd-115m	$2{,}7.10^{6}$	$1{,}1.10^{3}$	$6{,}1.10^{6}$
Cd-117	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$7{,}1.10^{7}$
Cd-117m	$6{,}3.10^{7}$	$2{,}6.10^{4}$	$7{,}1.10^{7}$
In-109	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$3{,}0.10^{8}$
In-110	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$8{,}3.10^{7}$
In-110m	$2{,}5.10^{8}$	$1{,}0.10^{5}$	$2{,}0.10^{8}$
In-111	$6{,}5.10^{7}$	$2{,}7.10^{4}$	$6{,}9.10^{7}$
In-112	$1{,}5.10^{9}$	$6{,}4.10^{5}$	$2{,}0.10^{9}$
In-113m	$6{,}3.10^{8}$	$2{,}6.10^{5}$	$7{,}1.10^{8}$
In-114m	$1{,}8.10^{6}$	$7{,}6.10^{2}$	$4{,}9.10^{6}$
In-115	$4{,}4.10^{4}$	$1{,}9.10^{1}$	$6{,}3.10^{5}$
In-115m	$2{,}3.10^{8}$	$9{,}6.10^{4}$	$2{,}3.10^{8}$
In-116m	$2{,}5.10^{8}$	$1{,}0.10^{5}$	$3{,}1.10^{8}$
In-117	$4{,}2.10^{8}$	$1{,}7.10^{5}$	$6{,}5.10^{8}$
In-117m	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}7.10^{8}$
In-119m	$6{,}9.10^{8}$	$2{,}9.10^{5}$	$4{,}3.10^{8}$
Sn-110	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$5{,}7.10^{7}$
Sn-111	$9{,}1.10^{8}$	$3{,}8.10^{5}$	$8{,}7.10^{8}$
Sn-113	$8{,}0.10^{6}$	$3{,}3.10^{3}$	$2{,}7.10^{7}$
Sn-117m	$8{,}7.10^{6}$	$3{,}6.10^{3}$	$2{,}8.10^{7}$
Sn-119m	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$5{,}9.10^{7}$
Sn-121	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$8{,}7.10^{7}$
Sn-121m	$4{,}8.10^{6}$	$2{,}0.10^{3}$	$5{,}3.10^{7}$
Sn-123	$2{,}6.10^{6}$	$1{,}1.10^{3}$	$9{,}5.10^{6}$
Sn-123m	$4{,}5.10^{8}$	$1{,}9.10^{5}$	$5{,}3.10^{8}$
Sn-125	$6{,}7.10^{6}$	$2{,}8.10^{3}$	$6{,}5.10^{6}$
Sn-126	$7{,}4.10^{5}$	$3{,}1.10^{2}$	$4{,}3.10^{6}$
Sn-127	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$1{,}0.10^{8}$
Sn-128	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$1{,}3.10^{8}$
Sb-115	$8{,}7.10^{8}$	$3{,}6.10^{5}$	$8{,}3.10^{8}$
Sb-116	$8{,}7.10^{8}$	$3{,}6.10^{5}$	$7{,}7.10^{8}$
Sb-116m	$2{,}4.10^{8}$	$9{,}8.10^{4}$	$3{,}0.10^{8}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Sb-117	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$1{,}1.10^{9}$
Sb-118m	$8{,}7.10^{7}$	$3{,}6.10^{4}$	$9{,}5.10^{7}$
Sb-119	$3{,}4.10^{8}$	$1{,}4.10^{5}$	$2{,}5.10^{8}$
Sb-120m	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$1{,}7.10^{7}$
Sb-120	$1{,}7.10^{9}$	$6{,}9.10^{5}$	$1{,}4.10^{9}$
Sb-122	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$1{,}2.10^{7}$
Sb-124	$3{,}3.10^{6}$	$1{,}4.10^{3}$	$8{,}0.10^{6}$
Sb-124m	$2{,}4.10^{9}$	$1{,}0.10^{6}$	$2{,}5.10^{9}$
Sb-125	$4{,}4.10^{6}$	$1{,}9.10^{3}$	$1{,}8.10^{7}$
Sb-126	$6{,}3.10^{6}$	$2{,}6.10^{3}$	$8{,}3.10^{6}$
Sb-126m	$6{,}1.10^{8}$	$2{,}5.10^{5}$	$5{,}6.10^{8}$
Sb-127	$1{,}2.10^{7}$	$4{,}9.10^{3}$	$1{,}2.10^{7}$
Sb-128	$3{,}0.10^{7}$	$1{,}2.10^{4}$	$2{,}6.10^{7}$
Sb-128m	$7{,}7.10^{8}$	$3{,}2.10^{5}$	$6{,}1.10^{8}$
Sb-129	$5{,}7.10^{7}$	$2{,}4.10^{4}$	$4{,}8.10^{7}$
Sb-130	$2{,}2.10^{8}$	$9{,}2.10^{4}$	$2{,}2.10^{8}$
Sb-131	$2{,}4.10^{8}$	$1{,}0.10^{5}$	$2{,}0.10^{8}$
Te-116	$1{,}2.10^{8}$	$4{,}9.10^{4}$	$1{,}2.10^{8}$
Te-116 (vapour)		$9{,}6.10^{4}$	
Te-121	$4{,}5.10^{7}$	$1{,}9.10^{4}$	$4{,}7.10^{7}$
Te-121 (vapour)		$1{,}6.10^{4}$	
Te-121m	$4{,}8.10^{6}$	$2{,}0.10^{3}$	$8{,}7.10^{6}$
Te-121m (vapour)		$1{,}5.10^{3}$	
Te-123	$4{,}0.10^{6}$	$1{,}7.10^{3}$	$4{,}5.10^{6}$
Te-123 (vapour)		$6{,}9.10^{2}$	
Te-123m	$5{,}1.10^{6}$	$2{,}1.10^{3}$	$1{,}4.10^{7}$
Te-123m (vapour)		$2{,}9.10^{3}$	
Te-125m	$6{,}1.10^{6}$	$2{,}5.10^{3}$	$2{,}3.10^{7}$
Te-125m (vapour)		$5{,}6.10^{3}$	
Te-127	$1{,}1.10^{8}$	$4{,}6.10^{4}$	$1{,}2.10^{8}$
Te-127 (vapour)		$1{,}1.10^{5}$	
Te-127m	$2{,}8.10^{6}$	$1{,}2.10^{3}$	$8{,}7.10^{6}$
Te-127m (vapour)		$1{,}8.10^{3}$	
Te-129	$3{,}5.10^{8}$	$1{,}5.10^{5}$	$3{,}2.10^{8}$
Te-129 (vapour)		$2{,}3.10^{5}$	
Te-129m	$3{,}2.10^{6}$	$1{,}3.10^{3}$	$6{,}7.10^{6}$
Te-129m (vapour)		$2{,}3.10^{3}$	
Te-131	$3{,}3.10^{8}$	$1{,}4.10^{5}$	$2{,}3.10^{8}$
Te-131 (vapour)		$1{,}2.10^{5}$	
Te-131m	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$1{,}1.10^{7}$
Te-131m (vapour)		$3{,}5.10^{3}$	
Te-132	$6{,}7.10^{6}$	$2{,}8.10^{3}$	$5{,}4.10^{6}$
Te-132 (vapour)		$1{,}6.10^{3}$	
Te-133	$4{,}5.10^{8}$	$1{,}9.10^{5}$	$2{,}8.10^{8}$
Te-133 (vapour)		$1{,}5.10^{5}$	
Te-133m	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$7{,}1.10^{7}$
Te-133m (vapour)		$3{,}8.10^{4}$	
Te-134	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}8.10^{8}$
Te-134 (vapour)		$9{,}9.10^{4}$	
I-120	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$5{,}9.10^{7}$
I-120 (elemental iodine)		$2{,}8.10^{4}$	
I-120 (methyl iodide)		$4{,}2.10^{4}$	
I-120m	$1{,}4.10^{8}$	$6{,}0.10^{4}$	$9{,}5.10^{7}$
I-120m (elemental iodine)		$4{,}6.10^{4}$	
I-120m (methyl iodide)		$8{,}3.10^{4}$	
I-121	$5{,}1.10^{8}$	$2{,}1.10^{5}$	$2{,}4.10^{8}$
I-121 (elemental iodine)		$9{,}7.10^{4}$	
I-121 (methyl iodide)		$1{,}5.10^{5}$	

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
I-123	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$9{,}5.10^{7}$
I-123 (elemental iodine)		$4{,}0.10^{4}$	
I-123 (methyl iodide)		$5{,}6.10^{4}$	
I-124	$3{,}2.10^{6}$	$1{,}3.10^{3}$	$1{,}5.10^{6}$
I-124 (elemental iodine)		$6{,}9.10^{2}$	
I-124 (methyl iodide)		$9{,}1.10^{2}$	
I-125	$2{,}7.10^{6}$	$1{,}1.10^{3}$	$1{,}3.10^{6}$
I-125 (elemental iodine)		$6{,}0.10^{2}$	
I-125 (methyl iodide)		$7{,}6.10^{2}$	
I-126	$1{,}4.10^{6}$	$6{,}0.10^{2}$	$6{,}9.10^{5}$
I-126 (elemental iodine)		$3{,}2.10^{2}$	
I-126 (methyl iodide)		$4{,}2.10^{2}$	
I-128	$9{,}1.10^{8}$	$3{,}8.10^{5}$	$4{,}3.10^{8}$
I-128 (elemental iodine)		$1{,}3.10^{5}$	
I-128 (methyl iodide)		$6{,}4.10^{5}$	
I-129	$3{,}9.10^{5}$	$1{,}6.10^{2}$	$1{,}8.10^{5}$
I-129 (elemental iodine)		$8{,}7.10^{1}$	
I-129 (methyl iodide)		$1{,}1.10^{2}$	
I-130	$2{,}1.10^{7}$	$8{,}7.10^{3}$	$1{,}0.10^{7}$
I-130 (elemental iodine)		$4{,}4.10^{3}$	
I-130 (methyl iodide)		$6{,}0.10^{3}$	
I-131	$1{,}8.10^{6}$	$7{,}6.10^{2}$	$9{,}1.10^{5}$
I-131 (elemental iodine)		$4{,}2.10^{2}$	
I-131 (methyl iodide)		$5{,}6.10^{2}$	
I-132	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$6{,}9.10^{7}$
I-132 (elemental iodine)		$2{,}7.10^{4}$	
I-132 (methyl iodide)		$4{,}4.10^{4}$	
I-132m	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$9{,}1.10^{7}$
I-132m (elemental iodine)		$3{,}1.10^{4}$	
I-132m (methyl iodide)		$5{,}2.10^{4}$	
I-133	$9{,}5.10^{6}$	$4{,}0.10^{3}$	$4{,}7.10^{6}$
I-133 (elemental iodine)		$2{,}1.10^{3}$	
I-133 (methyl iodide)		$2{,}7.10^{3}$	
I-134	$2{,}5.10^{8}$	$1{,}1.10^{5}$	$1{,}8.10^{8}$
I-134 (elemental iodine)		$5{,}6.10^{4}$	
I-134 (methyl iodide)		$1{,}7.10^{5}$	
I-135	$4{,}3.10^{7}$	$1{,}8.10^{4}$	$2{,}2.10^{7}$
I-135 (elemental iodine)		$9{,}1.10^{3}$	
I-135 (methyl iodide)		$1{,}2.10^{4}$	
Cs-125	$8{,}7.10^{8}$	$3{,}6.10^{5}$	$5{,}7.10^{8}$
Cs-127	$5{,}0.10^{8}$	$2{,}1.10^{5}$	$8{,}3.10^{8}$
Cs-129	$2{,}5.10^{8}$	$1{,}0.10^{5}$	$3{,}3.10^{8}$
Cs-130	$1{,}3.10^{9}$	$5{,}6.10^{5}$	$7{,}1.10^{8}$
Cs-131	$4{,}4.10^{8}$	$1{,}9.10^{5}$	$3{,}4.10^{8}$
Cs-132	$5{,}3.10^{7}$	$2{,}2.10^{4}$	$4{,}0.10^{7}$
Cs-134	$2{,}1.10^{6}$	$8{,}7.10^{2}$	$1{,}1.10^{6}$
Cs-134m	$7{,}7.10^{8}$	$3{,}2.10^{5}$	$1{,}0.10^{9}$
Cs-135	$2{,}0.10^{7}$	$8{,}4.10^{3}$	$1{,}0.10^{7}$
Cs-135m	$8{,}3.10^{8}$	$3{,}5.10^{5}$	$1{,}1.10^{9}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Cs-136	$1{,}1.10^{7}$	$4{,}4.10^{3}$	$6{,}7.10^{6}$
Cs-137	$3{,}0.10^{6}$	$1{,}2.10^{3}$	$1{,}5.10^{6}$
Cs-138	$4{,}3.10^{8}$	$1{,}8.10^{5}$	$2{,}2.10^{8}$
Ba-126	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$7{,}7.10^{7}$
Ba-128	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$7{,}4.10^{6}$
Ba-131	$5{,}7.10^{7}$	$2{,}4.10^{4}$	$4{,}4.10^{7}$
Ba-131m	$3{,}1.10^{9}$	$1{,}3.10^{6}$	$4{,}1.10^{9}$
Ba-133	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$2{,}0.10^{7}$
Ba-133m	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$3{,}6.10^{7}$
Ba-135m	$8{,}7.10^{7}$	$3{,}6.10^{4}$	$4{,}4.10^{7}$
Ba-139	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$1{,}7.10^{8}$
Ba-140	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$8{,}0.10^{6}$
Ba-141	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$2{,}9.10^{8}$
Ba-142	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$5{,}7.10^{8}$
La-131	$5{,}6.10^{8}$	$2{,}3.10^{5}$	$5{,}7.10^{8}$
La-132	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$5{,}1.10^{7}$
La-135	$8{,}0.10^{8}$	$3{,}3.10^{5}$	$6{,}7.10^{8}$
La-137	$2{,}0.10^{6}$	$8{,}3.10^{2}$	$2{,}5.10^{8}$
La-138	$1{,}1.10^{5}$	$4{,}6.10^{1}$	$1{,}8.10^{7}$
La-140	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$1{,}0.10^{7}$
La-141	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$5{,}6.10^{7}$
La-142	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$1{,}1.10^{8}$
La-143	$6{,}1.10^{8}$	$2{,}5.10^{5}$	$3{,}6.10^{8}$
Ce-134	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$8{,}0.10^{6}$
Ce-135	$2{,}6.10^{7}$	$1{,}1.10^{4}$	$2{,}5.10^{7}$
Ce-137	$1{,}1.10^{9}$	$4{,}4.10^{5}$	$8{,}0.10^{8}$
Ce-137m	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$3{,}7.10^{7}$
Ce-139	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$7{,}7.10^{7}$
Ce-141	$5{,}6.10^{6}$	$2{,}3.10^{3}$	$2{,}8.10^{7}$
Ce-143	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$1{,}8.10^{7}$
Ce-144	$4{,}1.10^{5}$	$1{,}7.10^{2}$	$3{,}8.10^{6}$
Pr-136	$8{,}0.10^{8}$	$3{,}3.10^{5}$	$6{,}1.10^{8}$
Pr-137	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$5{,}0.10^{8}$
Pr-138m	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$1{,}5.10^{8}$
Pr-139	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$6{,}5.10^{8}$
Pr-142	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$1{,}5.10^{7}$
Pr-142m	$2{,}1.10^{9}$	$8{,}9.10^{5}$	$1{,}2.10^{9}$
Pr-143	$8{,}7.10^{6}$	$3{,}6.10^{3}$	$1{,}7.10^{7}$
Pr-144	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$4{,}0.10^{8}$
Pr-145	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$5{,}1.10^{7}$
Pr-147	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$6{,}1.10^{8}$
Nd-136	$2{,}2.10^{8}$	$9{,}4.10^{4}$	$2{,}0.10^{8}$
Nd-138	$5{,}3.10^{7}$	$2{,}2.10^{4}$	$3{,}1.10^{7}$
Nd-139	$1{,}2.10^{9}$	$4{,}9.10^{5}$	$1{,}0.10^{9}$
Nd-139m	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$8{,}0.10^{7}$
Nd-141	$2{,}3.10^{9}$	$9{,}5.10^{5}$	$2{,}4.10^{9}$
Nd-147	$8{,}7.10^{6}$	$3{,}6.10^{3}$	$1{,}8.10^{7}$
Nd-149	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$1{,}7.10^{8}$
Nd-151	$6{,}9.10^{8}$	$2{,}9.10^{5}$	$6{,}7.10^{8}$
Pm-141	$8{,}0.10^{8}$	$3{,}3.10^{5}$	$5{,}6.10^{8}$
Pm-143	$1{,}4.10^{7}$	$6{,}0.10^{3}$	$8{,}7.10^{7}$
Pm-144	$2{,}6.10^{6}$	$1{,}1.10^{3}$	$2{,}1.10^{7}$
Pm-145	$5{,}9.10^{6}$	$2{,}5.10^{3}$	$1{,}8.10^{8}$
Pm-146	$1{,}1.10^{6}$	$4{,}4.10^{2}$	$2{,}2.10^{7}$
Pm-147	$4{,}3.10^{6}$	$1{,}8.10^{3}$	$7{,}7.10^{7}$
Pm-148	$9{,}1.10^{6}$	$3{,}8.10^{3}$	$7{,}4.10^{6}$
Pm-148m	$3{,}7.10^{6}$	$1{,}5.10^{3}$	$1{,}1.10^{7}$
Pm-149	$2{,}4.10^{7}$	$1{,}0.10^{4}$	$2{,}0.10^{7}$
Pm-150	$9{,}5.10^{7}$	$4{,}0.10^{4}$	$7{,}7.10^{7}$
Pm-151	$3{,}1.10^{7}$	$1{,}3.10^{4}$	$2{,}7.10^{7}$
Sm-141	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$5{,}1.10^{8}$
Sm-141m	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$3{,}1.10^{8}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Sm-142	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}1.10^{8}$
Sm-145	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$9{,}5.10^{7}$
Sm-146	$2{,}0.10^{3}$	$8{,}4.10^{-1}$	$3{,}7.10^{5}$
Sm-147	$2{,}2.10^{3}$	$9{,}4.10^{-1}$	$4{,}1.10^{5}$
Sm-151	$5{,}4.10^{6}$	$2{,}3.10^{3}$	$2{,}0.10^{8}$
Sm-153	$2{,}9.10^{7}$	$1{,}2.10^{4}$	$2{,}7.10^{7}$
Sm-155	$7{,}1.10^{8}$	$3{,}0.10^{5}$	$6{,}9.10^{8}$
Sm-156	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$8{,}0.10^{7}$
Eu-145	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$2{,}7.10^{7}$
Eu-146	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$1{,}5.10^{7}$
Eu-147	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$4{,}5.10^{7}$
Eu-148	$7{,}4.10^{6}$	$3{,}1.10^{3}$	$1{,}5.10^{7}$
Eu-149	$7{,}4.10^{7}$	$3{,}1.10^{4}$	$2{,}0.10^{8}$
Eu-150	$4{,}0.10^{5}$	$1{,}7.10^{2}$	$1{,}5.10^{7}$
Eu-150m	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$5{,}3.10^{7}$
Eu-152	$5{,}1.10^{5}$	$2{,}1.10^{2}$	$1{,}4.10^{7}$
Eu-152m	$6{,}3.10^{7}$	$2{,}6.10^{4}$	$4{,}0.10^{7}$
Eu-154	$4{,}0.10^{5}$	$1{,}7.10^{2}$	$1{,}0.10^{7}$
Eu-155	$3{,}1.10^{6}$	$1{,}3.10^{3}$	$6{,}3.10^{7}$
Eu-156	$6{,}1.10^{6}$	$2{,}5.10^{3}$	$9{,}1.10^{6}$
Eu-157	$4{,}5.10^{7}$	$1{,}9.10^{4}$	$3{,}3.10^{7}$
Eu-158	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$2{,}1.10^{8}$
Gd-145	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$4{,}5.10^{8}$
Gd-146	$3{,}8.10^{6}$	$1{,}6.10^{3}$	$2{,}1.10^{7}$
Gd-147	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$3{,}3.10^{7}$
Gd-148	$6{,}7.10^{2}$	$2{,}8.10^{-1}$	$3{,}6.10^{5}$
Gd-149	$2{,}5.10^{7}$	$1{,}1.10^{4}$	$4{,}4.10^{7}$
Gd-151	$2{,}2.10^{7}$	$9{,}0.10^{3}$	$1{,}0.10^{8}$
Gd-152	$9{,}1.10^{2}$	$3{,}8.10^{-1}$	$4{,}9.10^{5}$
Gd-153	$8{,}0.10^{6}$	$3{,}3.10^{3}$	$7{,}4.10^{7}$
Gd-159	$5{,}1.10^{7}$	$2{,}1.10^{4}$	$4{,}1.10^{7}$
Tb-147	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}3.10^{8}$
Tb-149	$4{,}7.10^{6}$	$1{,}9.10^{3}$	$8{,}0.10^{7}$
Tb-150	$1{,}1.10^{8}$	$4{,}6.10^{4}$	$8{,}0.10^{7}$
Tb-151	$6{,}1.10^{7}$	$2{,}5.10^{4}$	$5{,}9.10^{7}$
Tb-153	$8{,}3.10^{7}$	$3{,}5.10^{4}$	$8{,}0.10^{7}$
Tb-154	$3{,}3.10^{7}$	$1{,}4.10^{4}$	$3{,}1.10^{7}$
Tb-155	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$9{,}5.10^{7}$
Tb-156	$1{,}4.10^{7}$	$6{,}0.10^{3}$	$1{,}7.10^{7}$
Tb-156m l	$8{,}7.10^{7}$	$3{,}6.10^{4}$	$1{,}2.10^{8}$
Tb-156m s	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$2{,}5.10^{8}$
Tb-157	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$5{,}9.10^{8}$
Tb-158	$4{,}7.10^{5}$	$1{,}9.10^{2}$	$1{,}8.10^{7}$
Tb-160	$3{,}0.10^{6}$	$1{,}3.10^{3}$	$1{,}3.10^{7}$
Tb-161	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$2{,}8.10^{7}$
Dy-155	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}5.10^{8}$
Dy-157	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$3{,}3.10^{8}$
Dy-159	$5{,}7.10^{7}$	$2{,}4.10^{4}$	$2{,}0.10^{8}$
Dy-165	$2{,}3.10^{8}$	$9{,}6.10^{4}$	$1{,}8.10^{8}$
Dy-166	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$1{,}3.10^{7}$
Ho-155	$6{,}3.10^{8}$	$2{,}6.10^{5}$	$5{,}4.10^{8}$
Ho-157	$2{,}6.10^{9}$	$1{,}1.10^{6}$	$3{,}1.10^{9}$
Ho-159	$2{,}0.10^{9}$	$8{,}3.10^{5}$	$2{,}5.10^{9}$
Ho-161	$2{,}0.10^{9}$	$8{,}3.10^{5}$	$1{,}5.10^{9}$
Ho-162	$4{,}4.10^{9}$	$1{,}9.10^{6}$	$6{,}1.10^{9}$
Ho-162m	$6{,}1.10^{8}$	$2{,}5.10^{5}$	$7{,}7.10^{8}$
Ho-164	$1{,}5.10^{9}$	$6{,}4.10^{5}$	$2{,}1.10^{9}$
Ho-164m	$1{,}3.10^{9}$	$5{,}2.10^{5}$	$1{,}3.10^{9}$
Ho-166	$2{,}4.10^{7}$	$1{,}0.10^{4}$	$1{,}4.10^{7}$
Ho-166m	$1{,}8.10^{5}$	$7{,}6.10^{1}$	$1{,}0.10^{7}$
Ho-167	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}4.10^{8}$
Er-161	$2{,}4.10^{8}$	$9{,}8.10^{4}$	$2{,}5.10^{8}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Er-165	$1{,}4.10^{9}$	$6{,}0.10^{5}$	$1{,}1.10^{9}$
Er-169	$2{,}0.10^{7}$	$8{,}5.10^{3}$	$5{,}4.10^{7}$
Er-171	$6{,}7.10^{7}$	$2{,}8.10^{4}$	$5{,}6.10^{7}$
Er-172	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$2{,}0.10^{7}$
Tm-162	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$6{,}9.10^{8}$
Tm-166	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$7{,}1.10^{7}$
Tm-167	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$3{,}6.10^{7}$
Tm-170	$3{,}0.10^{6}$	$1{,}3.10^{3}$	$1{,}5.10^{7}$
Tm-171	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$1{,}8.10^{8}$
Tm-172	$1{,}4.10^{7}$	$6{,}0.10^{3}$	$1{,}2.10^{7}$
Tm-173	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$6{,}5.10^{7}$
Tm-175	$6{,}5.10^{8}$	$2{,}7.10^{5}$	$7{,}4.10^{8}$
Yb-162	$8{,}7.10^{8}$	$3{,}6.10^{5}$	$8{,}7.10^{8}$
Yb-166	$2{,}1.10^{7}$	$8{,}8.10^{3}$	$2{,}1.10^{7}$
Yb-167	$2{,}1.10^{9}$	$8{,}8.10^{5}$	$3{,}0.10^{9}$
Yb-169	$7{,}1.10^{6}$	$3{,}0.10^{3}$	$2{,}8.10^{7}$
Yb-175	$2{,}9.10^{7}$	$1{,}2.10^{4}$	$4{,}5.10^{7}$
Yb-177	$2{,}1.10^{8}$	$8{,}9.10^{4}$	$2{,}1.10^{8}$
Yb-1778	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}7.10^{8}$
Lu-169	$4{,}1.10^{7}$	$1{,}7.10^{4}$	$4{,}3.10^{7}$
Lu-170	$2{,}1.10^{7}$	$8{,}8.10^{3}$	$2{,}0.10^{7}$
Lu-171	$2{,}2.10^{7}$	$9{,}0.10^{3}$	$3{,}0.10^{7}$
Lu-172	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$1{,}5.10^{7}$
Lu-173	$8{,}7.10^{6}$	$3{,}6.10^{3}$	$7{,}7.10^{7}$
Lu-174	$5{,}0.10^{6}$	$2{,}1.10^{3}$	$7{,}4.10^{7}$
Lu-174m	$5{,}3.10^{6}$	$2{,}2.10^{3}$	$3{,}8.10^{7}$
Lu-176	$3{,}0.10^{5}$	$1{,}3.10^{2}$	$1{,}1.10^{7}$
Lu-176m	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$1{,}2.10^{8}$
Lu-177	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$3{,}8.10^{7}$
Lu-177m	$1{,}3.10^{6}$	$5{,}6.10^{2}$	$1{,}2.10^{7}$
Lu-178	$4{,}9.10^{8}$	$2{,}0.10^{5}$	$4{,}3.10^{8}$
Lu-178m	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$5{,}3.10^{8}$
Lu-179	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$9{,}5.10^{7}$
Hf-170	$4{,}7.10^{7}$	$1{,}9.10^{4}$	$4{,}2.10^{7}$
Hf-172	$5{,}4.10^{5}$	$2{,}3.10^{2}$	$2{,}0.10^{7}$
Hf-173	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$8{,}7.10^{7}$
Hf-175	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$4{,}9.10^{7}$
Hf-177m	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$2{,}5.10^{8}$
Hf-178m	$6{,}5.10^{4}$	$2{,}7.10^{1}$	$4{,}3.10^{6}$
Hf-179m	$5{,}6.10^{6}$	$2{,}3.10^{3}$	$1{,}7.10^{7}$
Hf-180m	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$1{,}2.10^{8}$
Hf-181	$4{,}3.10^{6}$	$1{,}8.10^{3}$	$1{,}8.10^{7}$
Hf-182	$5{,}6.10^{4}$	$2{,}3.10^{1}$	$6{,}7.10^{6}$
Hf-182m	$2{,}8.10^{8}$	$1{,}2.10^{5}$	$4{,}8.10^{8}$
Hf-183	$2{,}4.10^{8}$	$1{,}0.10^{5}$	$2{,}7.10^{8}$
Hf-184	$4{,}4.10^{7}$	$1{,}9.10^{4}$	$3{,}8.10^{7}$
Ta-172	$3{,}5.10^{8}$	$1{,}5.10^{5}$	$3{,}8.10^{8}$
Ta-173	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$1{,}1.10^{8}$
Ta-174	$3{,}0.10^{8}$	$1{,}3.10^{5}$	$3{,}5.10^{8}$
Ta-175	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$9{,}5.10^{7}$
Ta-176	$6{,}1.10^{7}$	$2{,}5.10^{4}$	$6{,}5.10^{7}$
Ta-177	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$1{,}8.10^{8}$
Ta-178	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$2{,}6.10^{8}$
Ta-179	$3{,}8.10^{7}$	$1{,}6.10^{4}$	$3{,}1.10^{8}$
Ta-180	$8{,}3.10^{5}$	$3{,}5.10^{2}$	$2{,}4.10^{7}$
Ta-180m	$3{,}2.10^{8}$	$1{,}3.10^{5}$	$3{,}7.10^{8}$
Ta-182	$2{,}1.10^{6}$	$8{,}6.10^{2}$	$1{,}3.10^{7}$
Ta-182m	$5{,}6.10^{8}$	$2{,}3.10^{5}$	$1{,}7.10^{9}$
Ta-183	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$1{,}5.10^{7}$
Ta-184	$3{,}2.10^{7}$	$1{,}3.10^{4}$	$2{,}9.10^{7}$
Ta-185	$2{,}8.10^{8}$	$1{,}2.10^{5}$	$2{,}9.10^{8}$
Ta-186	$6{,}5.10^{8}$	$2{,}7.10^{5}$	$6{,}1.10^{8}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
W-176	$2{,}6.10^{8}$	$1{,}1.10^{5}$	$1{,}8.10^{8}$
W-177	$4{,}3.10^{8}$	$1{,}8.10^{5}$	$3{,}3.10^{8}$
W-178	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$8{,}0.10^{7}$
W-179	$1{,}1.10^{10}$	$4{,}6.10^{6}$	$6{,}1.10^{9}$
W-181	$4{,}7.10^{8}$	$1{,}9.10^{5}$	$2{,}4.10^{8}$
W-185	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$4{,}0.10^{7}$
W-187	$6{,}1.10^{7}$	$2{,}5.10^{4}$	$2{,}8.10^{7}$
W-188	$2{,}4.10^{7}$	$9{,}9.10^{3}$	$8{,}7.10^{6}$
Re-177	$9{,}1.10^{8}$	$3{,}8.10^{5}$	$9{,}1.10^{8}$
Re-178	$8{,}3.10^{8}$	$3{,}5.10^{5}$	$8{,}0.10^{8}$
Re-181	$5{,}4.10^{7}$	$2{,}3.10^{4}$	$4{,}8.10^{7}$
Re-182	$1{,}2.10^{7}$	$4{,}9.10^{3}$	$1{,}4.10^{7}$
Re-182m	$6{,}7.10^{7}$	$2{,}8.10^{4}$	$7{,}4.10^{7}$
Re-184	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$2{,}0.10^{7}$
Re-184m	$3{,}3.10^{6}$	$1{,}4.10^{3}$	$1{,}3.10^{7}$
Re-186	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$1{,}3.10^{7}$
Re-186m	$1{,}8.10^{6}$	$7{,}6.10^{2}$	$9{,}1.10^{6}$
Re-187	$3{,}3.10^{9}$	$1{,}4.10^{6}$	$3{,}9.10^{9}$
Re-188	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$1{,}4.10^{7}$
Re-188m	$1{,}0.10^{9}$	$4{,}2.10^{5}$	$6{,}7.10^{8}$
Re-189	$3{,}3.10^{7}$	$1{,}4.10^{4}$	$2{,}6.10^{7}$
Os-180	$8{,}0.10^{8}$	$3{,}3.10^{5}$	$1{,}2.10^{9}$
Os-181	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}2.10^{8}$
Os-182	$3{,}8.10^{7}$	$1{,}6.10^{4}$	$3{,}6.10^{7}$
Os-185	$1{,}3.10^{7}$	$5{,}6.10^{3}$	$3{,}9.10^{7}$
Os-189m	$2{,}5.10^{9}$	$1{,}1.10^{6}$	$1{,}1.10^{9}$
Os-191	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$3{,}5.10^{7}$
Os-191m	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$2{,}1.10^{8}$
Os-193	$2{,}9.10^{7}$	$1{,}2.10^{4}$	$2{,}5.10^{7}$
Os-194	$2{,}5.10^{5}$	$1{,}1.10^{2}$	$8{,}3.10^{6}$
Ir-182	$5{,}0.10^{8}$	$2{,}1.10^{5}$	$4{,}2.10^{8}$
Ir-184	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$1{,}2.10^{8}$
Ir-185	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$7{,}7.10^{7}$
Ir-186	$4{,}0.10^{7}$	$1{,}7.10^{4}$	$4{,}1.10^{7}$
Ir-186m	$2{,}8.10^{8}$	$1{,}2.10^{5}$	$3{,}3.10^{8}$
Ir-187	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}7.10^{8}$
Ir-188	$3{,}2.10^{7}$	$1{,}3.10^{4}$	$3{,}2.10^{7}$
Ir-189	$3{,}6.10^{7}$	$1{,}5.10^{4}$	$8{,}3.10^{7}$
Ir-190	$8{,}0.10^{6}$	$3{,}3.10^{3}$	$1{,}7.10^{7}$
Ir-190m l	$1{,}4.10^{8}$	$6{,}0.10^{4}$	$1{,}7.10^{8}$
Ir-190m s	$1{,}8.10^{9}$	$7{,}6.10^{5}$	$2{,}5.10^{9}$
Ir-192	$3{,}2.10^{6}$	$1{,}3.10^{3}$	$1{,}4.10^{7}$
Ir-192m	$1{,}1.10^{6}$	$4{,}4.10^{2}$	$6{,}5.10^{7}$
Ir-193m	$1{,}7.10^{7}$	$6{,}9.10^{3}$	$7{,}4.10^{7}$
Ir-194	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$1{,}5.10^{7}$
Ir-194m	$1{,}7.10^{6}$	$6{,}9.10^{2}$	$9{,}5.10^{6}$
Ir-195	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}0.10^{8}$
Ir-195m	$8{,}3.10^{7}$	$3{,}5.10^{4}$	$9{,}5.10^{7}$
Pt-186	$3{,}0.10^{8}$	$1{,}3.10^{5}$	$2{,}2.10^{8}$
Pt-188	$3{,}2.10^{7}$	$1{,}3.10^{4}$	$2{,}6.10^{7}$
Pt-189	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$1{,}7.10^{8}$
Pt-191	$1{,}1.10^{8}$	$4{,}4.10^{4}$	$5{,}9.10^{7}$
Pt-193	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$6{,}5.10^{8}$
Pt-193m	$9{,}5.10^{7}$	$4{,}0.10^{4}$	$4{,}4.10^{7}$
Pt-195m	$6{,}5.10^{7}$	$2{,}7.10^{4}$	$3{,}2.10^{7}$
Pt-197	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$5{,}0.10^{7}$
Pt-197m	$4{,}7.10^{8}$	$1{,}9.10^{5}$	$2{,}4.10^{8}$
Pt-199	$9{,}1.10^{8}$	$3{,}8.10^{5}$	$5{,}1.10^{8}$
Pt-200	$5{,}0.10^{7}$	$2{,}1.10^{4}$	$1{,}7.10^{7}$
Au-193	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$1{,}5.10^{8}$
Au-194	$5{,}3.10^{7}$	$2{,}2.10^{4}$	$4{,}8.10^{7}$
Au-195	$1{,}3.10^{7}$	$5{,}2.10^{3}$	$8{,}0.10^{7}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Au-198	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$2{,}0.10^{7}$
Au-198m	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$1{,}5.10^{7}$
Au-199	$2{,}6.10^{7}$	$1{,}1.10^{4}$	$4{,}5.10^{7}$
Au-200	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$2{,}9.10^{8}$
Au-200m	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$1{,}8.10^{7}$
Au-201	$6{,}9.10^{8}$	$2{,}9.10^{5}$	$8{,}3.10^{8}$
Hg-193 (organic)	$4{,}3.10^{8}$	$1{,}8.10^{5}$	$3{,}0.10^{8}$
Hg-193 (inorganic)	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}4.10^{8}$
Hg-193 (vapour)		$7{,}6.10^{3}$	
Hg-193m (organic)	$1{,}0.10^{8}$	$4{,}2.10^{4}$	$6{,}7.10^{7}$
Hg-193m (inorganic)	$5{,}3.10^{7}$	$2{,}2.10^{4}$	$5{,}0.10^{7}$
Hg-193m (vapour)		$2{,}7.10^{3}$	
Hg-194 (organic)	$1{,}1.10^{6}$	$4{,}4.10^{2}$	$3{,}9.10^{5}$
Hg-194 (inorganic)	$1{,}3.10^{6}$	$5{,}6.10^{2}$	$1{,}4.10^{7}$
Hg-194 (vapour)		$2{,}1.10^{2}$	
Hg-195 (organic)	$4{,}5.10^{8}$	$1{,}9.10^{5}$	$2{,}7.10^{8}$
Hg-195 (inorganic)	$2{,}2.10^{8}$	$9{,}1.10^{4}$	$2{,}1.10^{8}$
Hg-195 (vapour)		$6{,}0.10^{3}$	
Hg-195m (organic)	$9{,}1.10^{7}$	$3{,}8.10^{4}$	$4{,}9.10^{7}$
Hg-195m (inorganic)	$3{,}1.10^{7}$	$1{,}3.10^{4}$	$3{,}6.10^{7}$
Hg-195m (vapour)		$1{,}0.10^{3}$	
Hg-197 (organic)	$2{,}4.10^{8}$	$9{,}8.10^{4}$	$1{,}2.10^{8}$
Hg-197 (inorganic)	$6{,}9.10^{7}$	$2{,}9.10^{4}$	$8{,}7.10^{7}$
Hg-197 (vapour)		$1{,}9.10^{3}$	
Hg-197m (organic)	$1{,}1.10^{8}$	$4{,}6.10^{4}$	$5{,}9.10^{7}$
Hg-197m (inorganic)	$3{,}0.10^{7}$	$1{,}3.10^{4}$	$4{,}3.10^{7}$
Hg-197m (vapour)		$1{,}4.10^{3}$	
Hg-199m (organic)	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$6{,}5.10^{8}$
Hg-199m (inorganic)	$3{,}8.10^{8}$	$1{,}6.10^{5}$	$6{,}5.10^{8}$
Hg-199m (vapour)		$4{,}6.10^{4}$	
Hg-203 (organic)	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$1{,}1.10^{7}$
Hg-203 (inorganic)	$8{,}7.10^{6}$	$3{,}6.10^{3}$	$3{,}7.10^{7}$
Hg-203 (vapour)		$1{,}2.10^{3}$	
Tl-194	$2{,}2.10^{9}$	$9{,}4.10^{5}$	$2{,}5.10^{9}$
Tl-194m	$5{,}6.10^{8}$	$2{,}3.10^{5}$	$5{,}0.10^{8}$
Tl-195	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$7{,}4.10^{8}$
Tl-197	$7{,}4.10^{8}$	$3{,}1.10^{5}$	$8{,}7.10^{8}$
Tl-198	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$2{,}7.10^{8}$
Tl-198m	$2{,}7.10^{8}$	$1{,}1.10^{5}$	$3{,}7.10^{8}$
Tl-199	$5{,}4.10^{8}$	$2{,}3.10^{5}$	$7{,}7.10^{8}$
Tl-200	$8{,}0.10^{7}$	$3{,}3.10^{4}$	$1{,}0.10^{8}$
Tl-201	$2{,}6.10^{8}$	$1{,}1.10^{5}$	$2{,}1.10^{8}$
Tl-202	$6{,}5.10^{7}$	$2{,}7.10^{4}$	$4{,}4.10^{7}$
Tl-204	$3{,}2.10^{7}$	$1{,}3.10^{4}$	$1{,}5.10^{7}$
Pb-195m	$6{,}7.10^{8}$	$2{,}8.10^{5}$	$6{,}9.10^{8}$
Pb-198	$2{,}3.10^{8}$	$9{,}6.10^{4}$	$2{,}0.10^{8}$
Pb-199	$4{,}2.10^{8}$	$1{,}7.10^{5}$	$3{,}7.10^{8}$
Pb-200	$7{,}7.10^{7}$	$3{,}2.10^{4}$	$5{,}0.10^{7}$
Pb-201	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}3.10^{8}$
Pb-202	$1{,}4.10^{6}$	$6{,}0.10^{2}$	$2{,}3.10^{6}$
Pb-202m	$1{,}7.10^{8}$	$6{,}9.10^{4}$	$1{,}5.10^{8}$
Pb-203	$1{,}3.10^{8}$	$5{,}2.10^{4}$	$8{,}3.10^{7}$
Pb-205	$4{,}9.10^{7}$	$2{,}0.10^{4}$	$7{,}1.10^{7}$
Pb-209	$6{,}3.10^{8}$	$2{,}6.10^{5}$	$3{,}5.10^{8}$
Pb-210	$1{,}8.10^{4}$	$7{,}6.10^{0}$	$2{,}9.10^{4}$
Pb-211	$3{,}6.10^{6}$	$1{,}5.10^{3}$	$1{,}1.10^{8}$
Pb-212	$6{,}1.10^{5}$	$2{,}5.10^{2}$	$3{,}4.10^{6}$
Pb-214[1]	$4{,}2.10^{6}$	$1{,}7.10^{3}$	$1{,}4.10^{8}$
Bi-200	$3{,}6.10^{8}$	$1{,}5.10^{5}$	$3{,}9.10^{8}$

[1] When Bi-214 and Pb-214 are part of the radioactive chain of Rn-222 in air, the limits of Table 16 are applied.

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
Bi-201	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$1{,}7.10^{8}$
Bi-202	$2{,}0.10^{8}$	$8{,}3.10^{4}$	$2{,}2.10^{8}$
Bi-203	$4{,}4.10^{7}$	$1{,}9.10^{4}$	$4{,}2.10^{7}$
Bi-205	$2{,}0.10^{7}$	$8{,}3.10^{3}$	$2{,}2.10^{7}$
Bi-206	$9{,}5.10^{6}$	$4{,}0.10^{3}$	$1{,}1.10^{7}$
Bi-207	$3{,}8.10^{6}$	$1{,}6.10^{3}$	$1{,}5.10^{7}$
Bi-210	$2{,}4.10^{5}$	$9{,}9.10^{1}$	$1{,}5.10^{7}$
Bi-210m	$6{,}5.10^{3}$	$2{,}7.10^{0}$	$1{,}3.10^{6}$
Bi-212	$5{,}1.10^{5}$	$2{,}1.10^{2}$	$7{,}7.10^{7}$
Bi-213	$4{,}9.10^{5}$	$2{,}0.10^{2}$	$1{,}0.10^{8}$
Bi-214[1]	$9{,}5.10^{5}$	$4{,}0.10^{2}$	$1{,}8.10^{8}$
Po-203	$3{,}3.10^{8}$	$1{,}4.10^{5}$	$3{,}8.10^{8}$
Po-205	$2{,}2.10^{8}$	$9{,}4.10^{4}$	$3{,}4.10^{8}$
Po-207	$1{,}3.10^{8}$	$5{,}6.10^{4}$	$1{,}4.10^{8}$
Po-210	$6{,}7.10^{3}$	$2{,}8.10^{0}$	$8{,}3.10^{4}$
At-207	$9{,}5.10^{6}$	$4{,}0.10^{3}$	$8{,}7.10^{7}$
At-211	$1{,}8.10^{5}$	$7{,}6.10^{1}$	$1{,}8.10^{6}$
Fr-222	$9{,}5.10^{5}$	$4{,}0.10^{2}$	$2{,}8.10^{7}$
Fr-223	$1{,}5.10^{7}$	$6{,}4.10^{3}$	$8{,}7.10^{6}$
Ra-223	$2{,}9.10^{3}$	$1{,}2.10^{0}$	$2{,}0.10^{5}$
Ra-224	$6{,}9.10^{3}$	$2{,}9.10^{0}$	$3{,}1.10^{5}$
Ra-225	$3{,}4.10^{3}$	$1{,}4.10^{0}$	$2{,}1.10^{5}$
Ra-226	$6{,}3.10^{3}$	$2{,}6.10^{0}$	$7{,}1.10^{4}$
Ra-227	$7{,}1.10^{7}$	$3{,}0.10^{4}$	$2{,}4.10^{8}$
Ra-228	$7{,}7.10^{3}$	$3{,}2.10^{0}$	$3{,}0.10^{4}$
Ac-224	$1{,}7.10^{5}$	$6{,}9.10^{1}$	$2{,}9.10^{7}$
Ac-225	$2{,}5.10^{3}$	$1{,}1.10^{0}$	$8{,}3.10^{5}$
Ac-226	$1{,}7.10^{4}$	$6{,}9.10^{0}$	$2{,}0.10^{6}$
Ac-227	$3{,}2.10^{1}$	$1{,}3.10^{-2}$	$1{,}8.10^{4}$
Ac-228	$6{,}9.10^{5}$	$2{,}9.10^{2}$	$4{,}7.10^{7}$
Th-226	$2{,}6.10^{5}$	$1{,}1.10^{2}$	$5{,}6.10^{7}$
Th-227	$2{,}1.10^{3}$	$8{,}7.10^{-1}$	$2{,}2.10^{6}$
Th-228	$5{,}1.10^{2}$	$2{,}1.10^{-1}$	$2{,}9.10^{5}$
Th-229	$2{,}0.10^{2}$	$8{,}4.10^{-2}$	$4{,}2.10^{4}$
Th-230	$5{,}0.10^{2}$	$2{,}1.10^{-1}$	$9{,}5.10^{4}$
Th-231	$5{,}0.10^{7}$	$2{,}1.10^{4}$	$5{,}9.10^{7}$
Th-232	$4{,}8.10^{2}$	$2{,}0.10^{-1}$	$9{,}1.10^{4}$
Th-234	$2{,}7.10^{6}$	$1{,}1.10^{3}$	$5{,}9.10^{6}$
Pa-227	$2{,}1.10^{5}$	$8{,}6.10^{1}$	$4{,}4.10^{7}$
Pa-228	$2{,}9.10^{5}$	$1{,}2.10^{2}$	$2{,}6.10^{7}$
Pa-230	$2{,}8.10^{4}$	$1{,}2.10^{1}$	$2{,}2.10^{7}$
Pa-231	$1{,}5.10^{2}$	$6{,}4.10^{-2}$	$2{,}8.10^{4}$
Pa-232	$2{,}1.10^{6}$	$8{,}8.10^{2}$	$2{,}8.10^{7}$
Pa-233	$5{,}4.10^{6}$	$2{,}3.10^{3}$	$2{,}3.10^{7}$
Pa-234	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$3{,}9.10^{7}$
U-230	$1{,}3.10^{3}$	$5{,}6.10^{-1}$	$3{,}6.10^{5}$
U-231	$5{,}0.10^{7}$	$2{,}1.10^{4}$	$7{,}1.10^{7}$
U-232	$5{,}7.10^{2}$	$2{,}4.10^{-1}$	$6{,}1.10^{4}$
U-233	$2{,}3.10^{3}$	$9{,}6.10^{-1}$	$4{,}0.10^{5}$
U-234[2]	$2{,}4.10^{3}$	$9{,}8.10^{-1}$	$4{,}1.10^{5}$
U-235[2]	$2{,}6.10^{3}$	$1{,}1.10^{0}$	$4{,}3.10^{5}$
U-236	$2{,}5.10^{3}$	$1{,}1.10^{0}$	$4{,}3.10^{5}$
U-237	$1{,}1.10^{7}$	$4{,}6.10^{3}$	$2{,}6.10^{7}$
U-238[2]	$2{,}7.10^{3}$	$1{,}1.10^{0}$	$4{,}5.10^{5}$
U-239	$5{,}7.10^{8}$	$2{,}4.10^{5}$	$7{,}1.10^{8}$

[2] For natural uranium (0,0055% U-234, 0,720% U-235 and 99,274% U-238):

Nuclide	LAI_{INH}, $g.a^{-1}$	$LAAVA_A$, $g.m^{-3}$	LAI_{ING}, $g.a^{-1}$
natural uranium	$1{,}0.10^{-1}$	$4{,}2.10^{-5}$	$1{,}7.10^{1}$

Nuclide	LAI_{INH}, $Bq.a^{-1}$	$LAAVA_A$, $Bq.m^{-3}$	LAI_{ING}, $Bq.a^{-1}$
U-240	$2{,}4.10^{7}$	$9{,}9.10^{3}$	$1{,}8.10^{7}$
Np-232	$4{,}3.10^{8}$	$1{,}8.10^{5}$	$2{,}1.10^{9}$
Np-233	$6{,}7.10^{9}$	$2{,}8.10^{6}$	$9{,}1.10^{9}$
Np-234	$2{,}7.10^{7}$	$1{,}1.10^{4}$	$2{,}5.10^{7}$
Np-235	$5{,}0.10^{7}$	$2{,}1.10^{4}$	$3{,}8.10^{8}$
Np-236	$6{,}7.10^{3}$	$2{,}8.10^{0}$	$1{,}2.10^{6}$
Np-236m	$4{,}0.10^{6}$	$1{,}7.10^{3}$	$1{,}1.10^{8}$
Np-237	$9{,}5.10^{2}$	$4{,}0.10^{-1}$	$1{,}8.10^{5}$
Np-238	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$2{,}2.10^{7}$
Np-239	$1{,}8.10^{7}$	$7{,}6.10^{3}$	$2{,}5.10^{7}$
Np-240	$1{,}5.10^{8}$	$6{,}4.10^{4}$	$2{,}4.10^{8}$
Pu-234	$9{,}1.10^{5}$	$3{,}8.10^{2}$	$1{,}3.10^{8}$
Pu-235	$7{,}7.10^{9}$	$3{,}2.10^{6}$	$9{,}5.10^{9}$
Pu-236	$1{,}1.10^{3}$	$4{,}6.10^{-1}$	$2{,}3.10^{5}$
Pu-237	$5{,}6.10^{7}$	$2{,}3.10^{4}$	$2{,}0.10^{8}$
Pu-238	$4{,}7.10^{2}$	$1{,}9.10^{-1}$	$8{,}7.10^{4}$
Pu-239	$4{,}3.10^{2}$	$1{,}8.10^{-1}$	$8{,}0.10^{4}$
Pu-240	$4{,}3.10^{2}$	$1{,}8.10^{-1}$	$8{,}0.10^{4}$
Pu-241	$2{,}4.10^{4}$	$9{,}8.10^{0}$	$4{,}3.10^{6}$
Pu-242	$4{,}5.10^{2}$	$1{,}9.10^{-1}$	$8{,}3.10^{4}$
Pu-243	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$2{,}4.10^{8}$
Pu-244	$4{,}5.10^{2}$	$1{,}9.10^{-1}$	$8{,}3.10^{4}$
Pu-245	$3{,}1.10^{7}$	$1{,}3.10^{4}$	$2{,}8.10^{7}$
Pu-246	$2{,}6.10^{6}$	$1{,}1.10^{3}$	$6{,}1.10^{6}$
Am-237	$5{,}6.10^{8}$	$2{,}3.10^{5}$	$1{,}1.10^{9}$
Am-238	$2{,}4.10^{8}$	$9{,}8.10^{4}$	$6{,}3.10^{8}$
Am-239	$6{,}9.10^{7}$	$2{,}9.10^{4}$	$8{,}3.10^{7}$
Am-240	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$3{,}4.10^{7}$
Am-241	$5{,}1.10^{2}$	$2{,}1.10^{-1}$	$1{,}0.10^{5}$
Am-242	$1{,}3.10^{6}$	$5{,}2.10^{2}$	$6{,}7.10^{7}$
Am-242m	$5{,}7.10^{2}$	$2{,}4.10^{-1}$	$1{,}1.10^{5}$
Am-243	$5{,}1.10^{2}$	$2{,}1.10^{-1}$	$1{,}0.10^{5}$
Am-244	$1{,}1.10^{7}$	$4{,}4.10^{3}$	$4{,}3.10^{7}$
Am-244m	$2{,}5.10^{8}$	$1{,}1.10^{5}$	$6{,}9.10^{8}$
Am-245	$2{,}6.10^{8}$	$1{,}1.10^{5}$	$3{,}2.10^{8}$
Am-246	$1{,}8.10^{8}$	$7{,}6.10^{4}$	$3{,}4.10^{8}$
Am-246m	$5{,}3.10^{8}$	$2{,}2.10^{5}$	$5{,}9.10^{8}$
Cm-238	$4{,}2.10^{6}$	$1{,}7.10^{3}$	$2{,}5.10^{8}$
Cm-240	$6{,}9.10^{3}$	$2{,}9.10^{0}$	$2{,}6.10^{6}$
Cm-241	$5{,}9.10^{5}$	$2{,}5.10^{2}$	$2{,}2.10^{7}$
Cm-242	$4{,}2.10^{3}$	$1{,}7.10^{0}$	$1{,}7.10^{6}$
Cm-243	$6{,}9.10^{2}$	$2{,}9.10^{-1}$	$1{,}3.10^{5}$
Cm-244	$8{,}0.10^{2}$	$3{,}3.10^{-1}$	$1{,}7.10^{5}$
Cm-245	$5{,}0.10^{2}$	$2{,}1.10^{-1}$	$9{,}5.10^{4}$
Cm-246	$5{,}0.10^{2}$	$2{,}1.10^{-1}$	$9{,}5.10^{4}$
Cm-247	$5{,}6.10^{2}$	$2{,}3.10^{-1}$	$1{,}1.10^{5}$
Cm-248	$1{,}4.10^{2}$	$6{,}0.10^{-2}$	$2{,}6.10^{4}$
Cm-249	$3{,}9.10^{8}$	$1{,}6.10^{5}$	$6{,}5.10^{8}$
Cm-250	$2{,}5.10^{1}$	$1{,}1.10^{-2}$	$4{,}5.10^{3}$
Bk-245	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$3{,}5.10^{7}$
Bk-246	$4{,}3.10^{7}$	$1{,}8.10^{4}$	$4{,}2.10^{7}$
Bk-247	$3{,}1.10^{2}$	$1{,}3.10^{-1}$	$5{,}7.10^{4}$
Bk-249	$1{,}3.10^{5}$	$5{,}6.10^{1}$	$2{,}1.10^{7}$
Bk-250	$2{,}1.10^{7}$	$8{,}7.10^{3}$	$1{,}4.10^{8}$
Cf-244	$1{,}1.10^{6}$	$4{,}6.10^{2}$	$2{,}9.10^{8}$
Cf-246	$4{,}8.10^{4}$	$2{,}0.10^{1}$	$6{,}1.10^{6}$
Cf-248	$2{,}4.10^{3}$	$1{,}0.10^{0}$	$7{,}1.10^{5}$
Cf-249	$3{,}0.10^{2}$	$1{,}3.10^{-1}$	$5{,}7.10^{4}$
Cf-250	$6{,}3.10^{2}$	$2{,}6.10^{-1}$	$1{,}3.10^{5}$
Cf-251	$3{,}0.10^{2}$	$1{,}2.10^{-1}$	$5{,}6.10^{4}$
Cf-252	$1{,}1.10^{3}$	$4{,}6.10^{-1}$	$2{,}2.10^{5}$
Cf-253	$1{,}7.10^{4}$	$6{,}9.10^{0}$	$1{,}4.10^{7}$
Cf-254	$5{,}4.10^{2}$	$2{,}3.10^{-1}$	$5{,}0.10^{4}$
Es-250	$3{,}4.10^{7}$	$1{,}4.10^{4}$	$9{,}5.10^{8}$
Es-251	$1{,}0.10^{7}$	$4{,}2.10^{3}$	$1{,}2.10^{8}$
Es-253	$8{,}0.10^{3}$	$3{,}3.10^{0}$	$3{,}3.10^{6}$
Es-254	$2{,}5.10^{3}$	$1{,}0.10^{0}$	$7{,}1.10^{5}$
Es-254m	$4{,}5.10^{4}$	$1{,}9.10^{1}$	$4{,}8.10^{6}$
Fm-252	$6{,}7.10^{4}$	$2{,}8.10^{1}$	$7{,}4.10^{6}$
Fm-253	$5{,}4.10^{4}$	$2{,}3.10^{1}$	$2{,}2.10^{7}$
Fm-254	$2{,}6.10^{5}$	$1{,}1.10^{2}$	$4{,}5.10^{7}$
Fm-255	$7{,}7.10^{4}$	$3{,}2.10^{1}$	$8{,}0.10^{6}$
Fm-257	$3{,}0.10^{3}$	$1{,}3.10^{0}$	$1{,}3.10^{6}$
Md-257	$8{,}7.10^{5}$	$3{,}6.10^{2}$	$1{,}7.10^{8}$
Mdm-258	$3{,}6.10^{3}$	$1{,}5.10^{0}$	$1{,}5.10^{6}$

[1] The average annual activity volume of the individual radionuclides in the air of working premises ($Bq.m^{-3}$) is defined as the limit of annual intake of the respective radionuclide by inhalation (Bq) divided by the volume of air inhaled by occupationally exposed workers for one year (2400 m^3).

Table No. 4

Secondary limits of the annual intake of individual radionuclides into the body of members of the public (LAI_{INH}) for six age groups by inhalation of aerosols, soluble or chemically active (not noble) gases and vapours, and the limits of the average annual volume activity for air in dwellings and outdoors ($LAAVA_A$) [(1)] (expected effective dose 1 $mSv.a^{-1}$)

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
H-3 (tritiated water, aerosol)	$8{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}6.10^{6}$	$3{,}6.10^{6}$	$3{,}8.10^{6}$	4	$4{,}7.10^{2}$
H-3 (tritiated water, vapour)	$1{,}6.10^{7}$	$2{,}1.10^{7}$	$3{,}2.10^{7}$	$4{,}3.10^{7}$	$5{,}6.10^{7}$	$5{,}6.10^{7}$	6	$6{,}9.10^{3}$
H-3 (elemental hydrogen)	$1{,}6.10^{11}$	$2{,}1.10^{11}$	$3{,}2.10^{11}$	$4{,}3.10^{11}$	$5{,}6.10^{11}$	$5{,}6.10^{11}$	6	$6{,}9.10^{7}$
H-3 (tritium methane)	$1{,}6.10^{9}$	$2{,}1.10^{9}$	$3{,}2.10^{9}$	$4{,}3.10^{9}$	$5{,}6.10^{9}$	$5{,}6.10^{9}$	6	$6{,}9.10^{5}$
H-3 (organic compounds, vapour)	$9{,}1.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	$2{,}4.10^{7}$	$2{,}4.10^{7}$	6	$3{,}0.10^{3}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Be-7	$3,6.10^6$	$4,2.10^6$	$7,1.10^6$	$1,0.10^7$	$1,5.10^7$	$1,8.10^7$	4	$1,9.10^3$
Be-10	$1,0.10^4$	$1,1.10^4$	$1,6.10^4$	$2,4.10^4$	$2,7.10^4$	$2,9.10^4$	6	$3,5.10^0$
C-11 (aerosol)	$6,3.10^6$	$9,1.10^6$	$2,0.10^7$	$3,0.10^7$	$4,5.10^7$	$5,6.10^7$	2	$4,8.10^3$
C-11 (vapour)	$3,6.10^7$	$5,6.10^7$	$1,0.10^8$	$1,6.10^8$	$2,6.10^8$	$3,1.10^8$	2	$2,9.10^4$
C-11 (dioxide)	$5,6.10^7$	$8,3.10^7$	$1,5.10^8$	$2,4.10^8$	$4,0.10^8$	$4,5.10^8$	4	$4,4.10^4$
C-11 (monoxide)	$1,0.10^8$	$1,5.10^8$	$2,9.10^8$	$4,5.10^8$	$7,1.10^8$	$8,3.10^8$	2	$7,9.10^4$
C-14 (aerosol)	$5,3.10^4$	$5,9.10^4$	$9,1.10^4$	$1,4.10^5$	$1,6.10^5$	$1,7.10^5$	6	$2,1.10^1$
C-14 (vapour)	$7,7.10^5$	$6,3.10^5$	$1,0.10^6$	$1,3.10^6$	$1,8.10^6$	$1,7.10^6$	6	$2,1.10^2$
C-14 (dioxide)	$5,3.10^7$	$5,3.10^7$	$9,1.10^7$	$1,1.10^8$	$1,6.10^8$	$1,6.10^8$	6	$2,0.10^4$
C-14 (monoxide)	$1,1.10^8$	$1,8.10^8$	$3,6.10^8$	$5,9.10^8$	$1,0.10^9$	$1,3.10^9$	2	$9,2.10^4$
F-18	$2,4.10^6$	$3,2.10^6$	$6,7.10^6$	$1,0.10^7$	$1,4.10^7$	$1,7.10^7$	2	$1,7.10^3$
Na-22	$1,0.10^5$	$1,4.10^5$	$2,6.10^5$	$4,2.10^5$	$6,7.10^5$	$7,7.10^5$	2	$7,2.10^1$
Na-24	$4,3.10^5$	$5,6.10^5$	$1,1.10^6$	$1,8.10^6$	$2,9.10^6$	$3,7.10^6$	2	$2,9.10^2$
Mg-28	$1,4.10^5$	$1,4.10^5$	$2,9.10^5$	$4,3.10^5$	$6,7.10^5$	$8,3.10^5$	2	$7,3.10^1$
Al-26	$1,1.10^4$	$1,4.10^4$	$2,3.10^4$	$3,4.10^4$	$4,5.10^4$	$5,0.10^4$	4	$6,2.10^0$
Si-31	$1,4.10^6$	$2,1.10^6$	$4,5.10^6$	$7,1.10^6$	$1,1.10^7$	$1,3.10^7$	2	$1,1.10^3$
Si-32	$3,6.10^3$	$3,7.10^3$	$5,3.10^3$	$7,7.10^3$	$9,1.10^3$	$9,1.10^3$	6	$1,1.10^0$
P-32	$4,5.10^4$	$6,7.10^4$	$1,3.10^5$	$1,9.10^5$	$2,5.10^5$	$2,9.10^5$	4	$3,4.10^1$
P-33	$1,6.10^5$	$2,2.10^5$	$3,6.10^5$	$4,8.10^5$	$5,3.10^5$	$6,7.10^5$	5	$7,2.10^1$
S-35 (inorganic)	$1,3.10^5$	$1,7.10^5$	$2,8.10^5$	$3,8.10^5$	$4,3.10^5$	$5,3.10^5$	5	$6,0.10^1$
S-35 (carbon disulfide)	$1,4.10^5$	$2,1.10^5$	$4,2.10^5$	$7,1.10^5$	$1,2.10^6$	$1,4.10^6$	2	$1,1.10^2$
S-35 (dioxide)	$1,1.10^6$	$1,5.10^6$	$2,9.10^6$	$4,8.10^6$	$7,7.10^6$	$9,1.10^6$	2	$8,0.10^2$
Cl-36	$3,2.10^4$	$3,8.10^4$	$6,7.10^4$	$1,0.10^5$	$1,1.10^5$	$1,4.10^5$	5	$1,6.10^1$
Cl-38	$2,1.10^6$	$3,3.10^6$	$7,1.10^6$	$1,2.10^7$	$1,9.10^7$	$2,2.10^7$	2	$1,8.10^3$
Cl-39	$2,3.10^6$	$3,6.10^6$	$7,7.10^6$	$1,2.10^7$	$1,8.10^7$	$2,2.10^7$	2	$1,9.10^3$
K-40	$4,2.10^4$	$5,9.10^4$	$1,3.10^5$	$2,2.10^5$	$4,0.10^5$	$4,8.10^5$	2	$3,1.10^1$
K-42	$6,3.10^5$	$1,0.10^6$	$2,3.10^6$	$3,8.10^6$	$6,7.10^6$	$8,3.10^6$	2	$5,3.10^2$
K-43	$7,7.10^5$	$1,0.10^6$	$2,1.10^6$	$3,4.10^6$	$5,9.10^6$	$7,1.10^6$	2	$5,4.10^2$
K-44	$4,5.10^6$	$7,1.10^6$	$1,5.10^7$	$2,5.10^7$	$4,2.10^7$	$5,0.10^7$	2	$3,8.10^3$
K-45	$6,7.10^6$	$1,0.10^7$	$2,1.10^7$	$3,3.10^7$	$5,6.10^7$	$6,7.10^7$	2	$5,3.10^3$
Ca-41	$1,5.10^6$	$1,7.10^6$	$2,6.10^6$	$3,0.10^6$	$3,0.10^6$	$5,6.10^6$	5	$4,2.10^2$
Ca-45	$6,7.10^4$	$8,3.10^4$	$1,4.10^5$	$2,0.10^5$	$2,2.10^5$	$2,7.10^5$	5	$3,0.10^1$
Ca-47	$8,3.10^4$	$1,2.10^5$	$2,2.10^5$	$3,0.10^5$	$3,8.10^5$	$4,8.10^5$	5	$5,3.10^1$
Sc-43	$1,1.10^6$	$1,5.10^6$	$3,0.10^6$	$4,5.10^6$	$7,1.10^6$	$9,1.10^6$	2	$7,9.10^2$
Sc-44	$6,3.10^5$	$8,3.10^5$	$1,8.10^6$	$2,8.10^6$	$4,3.10^6$	$5,6.10^6$	2	$4,4.10^2$
Sc-44m	$9,1.10^4$	$1,2.10^5$	$2,4.10^5$	$3,6.10^5$	$5,9.10^5$	$7,1.10^5$	2	$6,3.10^1$
Sc-46	$3,6.10^4$	$4,3.10^4$	$7,1.10^4$	$1,0.10^5$	$1,2.10^5$	$1,5.10^5$	5	$1,6.10^1$
Sc-47	$2,5.10^5$	$3,6.10^5$	$6,7.10^5$	$9,1.10^5$	$1,1.10^6$	$1,4.10^6$	5	$1,5.10^2$
Sc-48	$1,3.10^5$	$1,7.10^5$	$3,2.10^5$	$5,0.10^5$	$7,1.10^5$	$9,1.10^5$	2	$8,9.10^1$
Sc-49	$2,6.10^6$	$4,2.10^6$	$9,1.10^6$	$1,4.10^7$	$2,1.10^7$	$2,5.10^7$	2	$2,2.10^3$
Ti-44	$3,1.10^3$	$3,2.10^3$	$4,8.10^3$	$6,7.10^3$	$7,7.10^3$	$8,3.10^3$	6	$1,0.10^0$
Ti-45	$1,3.10^6$	$1,8.10^6$	$3,7.10^6$	$5,9.10^6$	$9,1.10^6$	$1,1.10^7$	2	$9,6.10^2$
V-47	$3,6.10^6$	$5,3.10^6$	$1,2.10^7$	$1,8.10^7$	$2,9.10^7$	$3,4.10^7$	2	$2,8.10^3$
V-48	$7,1.10^4$	$9,1.10^4$	$1,6.10^5$	$2,3.10^5$	$3,4.10^5$	$4,2.10^5$	4	$4,2.10^1$
V-49	$3,6.10^6$	$4,8.10^6$	$9,1.10^6$	$1,6.10^7$	$2,5.10^7$	$2,9.10^7$	2	$2,5.10^3$
Cr-48	$8,3.10^5$	$1,0.10^6$	$1,8.10^6$	$2,7.10^6$	$3,6.10^6$	$4,5.10^6$	4	$4,8.10^2$
Cr-49	$3,2.10^6$	$4,8.10^6$	$1,0.10^7$	$1,6.10^7$	$2,4.10^7$	$2,9.10^7$	2	$2,5.10^3$
Cr-51	$3,8.10^6$	$4,8.10^6$	$1,0.10^7$	$1,5.10^7$	$2,2.10^7$	$2,7.10^7$	2	$2,5.10^3$
Mn-51	$2,5.10^6$	$3,7.10^6$	$8,3.10^6$	$1,3.10^7$	$2,0.10^7$	$2,4.10^7$	2	$1,9.10^3$
Mn-52	$1,2.10^5$	$1,5.10^5$	$2,7.10^5$	$4,2.10^5$	$5,9.10^5$	$7,1.10^5$	4	$7,4.10^1$
Mn-52m	$3,6.10^6$	$5,3.10^6$	$1,1.10^7$	$1,8.10^7$	$2,9.10^7$	$3,4.10^7$	2	$2,8.10^3$
Mn-53	$2,2.10^6$	$2,9.10^6$	$5,9.10^6$	$1,0.10^7$	$1,6.10^7$	$3,4.10^7$	2	$1,5.10^3$
Mn-54	$1,3.10^5$	$1,6.10^5$	$2,6.10^5$	$4,2.10^5$	$5,3.10^5$	$6,7.10^5$	5	$7,2.10^1$
Mn-56	$9,1.10^5$	$1,3.10^6$	$2,7.10^6$	$4,2.10^6$	$6,7.10^6$	$8,3.10^6$	2	$6,7.10^2$
Fe-52	$1,7.10^5$	$2,4.10^5$	$5,0.10^5$	$7,7.10^5$	$1,3.10^6$	$1,6.10^6$	2	$1,3.10^2$
Fe-55	$2,4.10^5$	$3,1.10^5$	$4,5.10^5$	$7,1.10^5$	$1,1.10^6$	$1,3.10^6$	4	$1,3.10^2$
Fe-59	$4,8.10^4$	$7,7.10^4$	$1,2.10^5$	$1,7.10^5$	$2,0.10^5$	$2,5.10^5$	5	$2,7.10^1$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Fe-60	$2{,}3.10^{3}$	$2{,}6.10^{3}$	$2{,}9.10^{3}$	$3{,}1.10^{3}$	$3{,}4.10^{3}$	$3{,}6.10^{3}$	6	$4{,}4.10^{-1}$
Co-55	$2{,}2.10^{5}$	$3{,}0.10^{5}$	$6{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}6.10^{2}$
Co-56	$3{,}4.10^{4}$	$4{,}0.10^{4}$	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}3.10^{5}$	$1{,}5.10^{5}$	5	$1{,}7.10^{1}$
Co-57	$2{,}3.10^{5}$	$2{,}7.10^{5}$	$4{,}3.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	$1{,}0.10^{6}$	5	$1{,}1.10^{2}$
Co-58	$1{,}1.10^{5}$	$1{,}3.10^{5}$	$2{,}2.10^{5}$	$3{,}2.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	5	$5{,}3.10^{1}$
Co-58m	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$2{,}2.10^{7}$	$3{,}3.10^{7}$	$5{,}0.10^{7}$	$5{,}9.10^{7}$	2	$5{,}8.10^{3}$
Co-60	$1{,}1.10^{4}$	$1{,}2.10^{4}$	$1{,}7.10^{4}$	$2{,}5.10^{4}$	$2{,}9.10^{4}$	$3{,}2.10^{4}$	6	$4{,}0.10^{0}$
Co-60m	$1{,}3.10^{8}$	$2{,}0.10^{8}$	$3{,}4.10^{8}$	$5{,}0.10^{8}$	$5{,}9.10^{8}$	$7{,}1.10^{8}$	5	$8{,}1.10^{4}$
Co-61	$2{,}3.10^{6}$	$3{,}6.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}0.10^{7}$	2	$1{,}9.10^{3}$
Co-62m	$5{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}6.10^{7}$	$2{,}5.10^{7}$	$4{,}0.10^{7}$	$4{,}8.10^{7}$	2	$4{,}0.10^{3}$
Ni-56	$1{,}8.10^{5}$	$2{,}2.10^{5}$	$3{,}7.10^{5}$	$5{,}6.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	4	$9{,}9.10^{1}$
Ni-56 (carbonyl)	$1{,}5.10^{5}$	$1{,}9.10^{5}$	$3{,}1.10^{5}$	$4{,}8.10^{5}$	$7{,}1.10^{5}$	$8{,}3.10^{5}$	4	$8{,}5.10^{1}$
Ni-57	$2{,}6.10^{5}$	$3{,}3.10^{5}$	$6{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}8.10^{2}$
Ni-57 (carbonyl)	$3{,}2.10^{5}$	$4{,}3.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$1{,}8.10^{6}$	4	$1{,}9.10^{2}$
Ni-59	$5{,}9.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}2.10^{6}$	$2{,}3.10^{6}$	6	$2{,}8.10^{2}$
Ni-59 (carbonyl)	$2{,}5.10^{5}$	$3{,}0.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}2.10^{6}$	4	$1{,}4.10^{2}$
Ni-63	$2{,}1.10^{5}$	$2{,}3.10^{5}$	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$7{,}7.10^{5}$	$7{,}7.10^{5}$	6	$9{,}5.10^{1}$
Ni-63 (carbonyl)	$1{,}1.10^{5}$	$1{,}3.10^{5}$	$2{,}1.10^{5}$	$3{,}3.10^{5}$	$4{,}5.10^{5}$	$5{,}0.10^{5}$	4	$6{,}0.10^{1}$
Ni-65	$1{,}2.10^{6}$	$1{,}8.10^{6}$	$3{,}8.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$9{,}6.10^{2}$
Ni-65 (carbonyl)	$5{,}0.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$1{,}8.10^{6}$	$2{,}5.10^{6}$	$2{,}8.10^{6}$	4	$3{,}2.10^{2}$
Ni-66	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$2{,}0.10^{5}$	$3{,}1.10^{5}$	$4{,}5.10^{5}$	$5{,}6.10^{5}$	2	$5{,}3.10^{1}$
Ni-66 (carbonyl)	$1{,}0.10^{5}$	$1{,}4.10^{5}$	$2{,}5.10^{5}$	$3{,}7.10^{5}$	$5{,}6.10^{5}$	$6{,}3.10^{5}$	4	$6{,}6.10^{1}$
Cu-60	$3{,}2.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}4.10^{7}$	$2{,}9.10^{7}$	2	$2{,}4.10^{3}$
Cu-61	$2{,}0.10^{6}$	$2{,}2.10^{6}$	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$1{,}2.10^{3}$
Cu-64	$1{,}7.10^{6}$	$1{,}8.10^{6}$	$3{,}4.10^{6}$	$5{,}0.10^{6}$	$7{,}1.10^{6}$	$8{,}3.10^{6}$	4	$8{,}9.10^{2}$
Cu-67	$4{,}0.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	5	$1{,}8.10^{2}$
Zn-62	$2{,}0.10^{5}$	$2{,}9.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$1{,}8.10^{6}$	2	$1{,}5.10^{2}$
Zn-63	$2{,}8.10^{6}$	$4{,}2.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$2{,}7.10^{7}$	2	$2{,}2.10^{3}$
Zn-65	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}8.10^{5}$	$2{,}6.10^{5}$	$4{,}0.10^{5}$	$4{,}5.10^{5}$	4	$4{,}7.10^{1}$
Zn-69	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}1.10^{7}$	$2{,}9.10^{7}$	$3{,}6.10^{7}$	2	$3{,}5.10^{3}$
Zn-69m	$4{,}5.10^{5}$	$5{,}9.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$3{,}7.10^{6}$	2	$3{,}1.10^{2}$
Zn-71m	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$3{,}2.10^{6}$	$5{,}0.10^{6}$	$6{,}3.10^{6}$	2	$5{,}3.10^{2}$
Zn-72	$1{,}0.10^{5}$	$1{,}4.10^{5}$	$2{,}8.10^{5}$	$4{,}2.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	4	$7{,}4.10^{1}$
Ga-65	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$2{,}1.10^{7}$	$3{,}2.10^{7}$	$5{,}0.10^{7}$	$5{,}9.10^{7}$	2	$4{,}8.10^{3}$
Ga-66	$2{,}2.10^{5}$	$3{,}2.10^{5}$	$1{,}1.10^{6}$	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$1{,}7.10^{2}$
Ga-67	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$2{,}8.10^{6}$	$3{,}3.10^{6}$	$4{,}2.10^{6}$	5	$4{,}6.10^{2}$
Ga-68	$2{,}2.10^{6}$	$3{,}2.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}0.10^{7}$	2	$1{,}7.10^{3}$
Ga-70	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$2{,}3.10^{7}$	$3{,}6.10^{7}$	$5{,}6.10^{7}$	$6{,}3.10^{7}$	2	$5{,}5.10^{3}$
Ga-72	$2{,}2.10^{5}$	$3{,}0.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}6.10^{2}$
Ga-73	$8{,}3.10^{5}$	$1{,}2.10^{6}$	$2{,}5.10^{6}$	$3{,}8.10^{6}$	$5{,}9.10^{6}$	$7{,}1.10^{6}$	2	$6{,}3.10^{2}$
Ge-66	$1{,}6.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$1{,}1.10^{3}$
Ge-67	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}2.10^{7}$	$3{,}4.10^{7}$	$3{,}8.10^{7}$	2	$3{,}3.10^{3}$
Ge-68	$1{,}7.10^{4}$	$2{,}0.10^{4}$	$3{,}3.10^{4}$	$5{,}0.10^{4}$	$6{,}3.10^{4}$	$7{,}1.10^{4}$	5	$8{,}6.10^{0}$
Ge-69	$5{,}6.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	$2{,}0.10^{6}$	$2{,}8.10^{6}$	$3{,}4.10^{6}$	4	$3{,}6.10^{2}$
Ge-71	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$2{,}4.10^{7}$	$4{,}2.10^{7}$	$7{,}7.10^{7}$	$9{,}1.10^{7}$	2	$6{,}1.10^{3}$
Ge-75	$3{,}4.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}3.10^{7}$	$2{,}8.10^{7}$	2	$2{,}8.10^{3}$
Ge-77	$4{,}3.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}2.10^{6}$	$2{,}7.10^{6}$	4	$3{,}0.10^{2}$
Ge-78	$1{,}4.10^{6}$	$2{,}0.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$1{,}1.10^{3}$
As-69	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}5.10^{7}$	$4{,}0.10^{7}$	$4{,}8.10^{7}$	2	$3{,}8.10^{3}$
As-70	$1{,}8.10^{6}$	$2{,}3.10^{6}$	$4{,}8.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$1{,}2.10^{3}$
As-71	$4{,}5.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}0.10^{6}$	$2{,}5.10^{6}$	4	$2{,}6.10^{2}$
As-72	$1{,}7.10^{5}$	$1{,}8.10^{5}$	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$9{,}2.10^{1}$
As-73	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$4{,}3.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	$1{,}0.10^{6}$	5	$1{,}1.10^{2}$
As-74	$9{,}1.10^{4}$	$1{,}2.10^{5}$	$2{,}1.10^{5}$	$3{,}0.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	5	$5{,}3.10^{1}$
As-76	$2{,}0.10^{5}$	$2{,}2.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$1{,}1.10^{2}$
As-77	$4{,}5.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}0.10^{6}$	$2{,}6.10^{6}$	5	$2{,}7.10^{2}$
As-78	$1{,}3.10^{6}$	$1{,}7.10^{6}$	$3{,}7.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$9{,}1.10^{2}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Se-70	$1,5.10^6$	$2,1.10^6$	$4,3.10^6$	$6,7.10^6$	$1,1.10^7$	$1,3.10^7$	2	$1,1.10^3$
Se-73	$5,6.10^5$	$7,7.10^5$	$1,6.10^6$	$2,5.10^6$	$3,8.10^6$	$4,8.10^6$	2	$4,0.10^2$
Se-73m	$5,3.10^6$	$7,7.10^6$	$1,5.10^7$	$2,4.10^7$	$3,8.10^7$	$4,5.10^7$	2	$4,0.10^3$
Se-75	$1,3.10^5$	$1,7.10^5$	$2,9.10^5$	$4,0.10^5$	$6,3.10^5$	$7,7.10^5$	4	$7,1.10^1$
Se-79	$4,3.10^4$	$5,0.10^4$	$7,7.10^4$	$1,1.10^5$	$1,3.10^5$	$1,5.10^5$	5	$1,8.10^1$
Se-81	$7,1.10^6$	$1,1.10^7$	$2,6.10^7$	$3,8.10^7$	$5,9.10^7$	$6,7.10^7$	2	$5,9.10^3$
Se-81m	$2,4.10^6$	$3,7.10^6$	$7,7.10^6$	$1,2.10^7$	$1,6.10^7$	$2,0.10^7$	2	$1,9.10^3$
Se-83	$3,6.10^6$	$5,0.10^6$	$1,0.10^7$	$1,6.10^7$	$2,4.10^7$	$2,9.10^7$	2	$2,6.10^3$
Br-74	$2,8.10^6$	$4,0.10^6$	$8,3.10^6$	$1,3.10^7$	$2,2.10^7$	$2,6.10^7$	2	$2,1.10^3$
Br-74m	$1,7.10^6$	$2,4.10^6$	$5,3.10^6$	$8,3.10^6$	$1,3.10^7$	$1,6.10^7$	2	$1,3.10^3$
Br-75	$2,2.10^6$	$3,2.10^6$	$6,7.10^6$	$1,0.10^7$	$1,5.10^7$	$1,9.10^7$	2	$1,7.10^3$
Br-76	$3,3.10^5$	$4,3.10^5$	$8,3.10^5$	$1,3.10^6$	$2,0.10^6$	$2,4.10^6$	2	$2,3.10^2$
Br-77	$1,6.10^6$	$2,0.10^6$	$3,7.10^6$	$6,3.10^6$	$1,3.10^7$	$1,2.10^7$	2	$1,0.10^3$
Br-80	$9,1.10^6$	$1,5.10^7$	$3,6.10^7$	$5,6.10^7$	$9,1.10^7$	$1,1.10^8$	2	$8,1.10^3$
Br-80m	$1,5.10^6$	$2,2.10^6$	$4,8.10^6$	$7,1.10^6$	$1,1.10^7$	$1,3.10^7$	2	$1,2.10^3$
Br-82	$2,6.10^5$	$3,3.10^5$	$5,9.10^5$	$9,1.10^5$	$1,3.10^6$	$1,6.10^6$	4	$1,6.10^2$
Br-83	$2,9.10^6$	$4,3.10^6$	$9,1.10^6$	$1,3.10^7$	$1,7.10^7$	$2,1.10^7$	2	$2,3.10^3$
Br-84	$2,7.10^6$	$4,2.10^6$	$9,1.10^6$	$1,4.10^7$	$2,3.10^7$	$2,7.10^7$	2	$2,2.10^3$
Rb-79	$6,3.10^6$	$9,1.10^6$	$2,0.10^7$	$3,1.10^7$	$5,3.10^7$	$6,3.10^7$	2	$4,8.10^3$
Rb-81	$3,1.10^6$	$4,0.10^6$	$8,3.10^6$	$1,4.10^7$	$2,4.10^7$	$2,9.10^7$	2	$2,1.10^3$
Rb-81m	$1,6.10^7$	$2,2.10^7$	$4,5.10^7$	$7,1.10^7$	$1,2.10^8$	$1,4.10^8$	2	$1,1.10^4$
Rb-82m	$1,2.10^6$	$1,4.10^6$	$2,6.10^6$	$4,3.10^6$	$7,1.10^6$	$9,1.10^6$	2	$7,2.10^2$
Rb-83	$2,0.10^5$	$2,6.10^5$	$5,0.10^5$	$7,7.10^5$	$1,3.10^6$	$1,4.10^6$	4	$1,4.10^2$
Rb-84	$1,2.10^5$	$1,6.10^5$	$3,2.10^5$	$5,0.10^5$	$8,3.10^5$	$1,0.10^6$	2	$8,2.10^1$
Rb-86	$8,3.10^4$	$1,3.10^5$	$2,9.10^5$	$5,0.10^5$	$9,1.10^5$	$1,1.10^6$	2	$6,8.10^1$
Rb-87	$1,7.10^5$	$2,4.10^5$	$5,6.10^5$	$9,1.10^5$	$1,7.10^6$	$2,0.10^6$	2	$1,3.10^2$
Rb-88	$5,3.10^6$	$8,3.10^6$	$1,9.10^7$	$3,1.10^7$	$5,3.10^7$	$6,3.10^7$	2	$4,4.10^3$
Rb-89	$7,1.10^6$	$1,1.10^7$	$2,3.10^7$	$3,7.10^7$	$6,3.10^7$	$7,1.10^7$	2	$5,7.10^3$
Sr-80	$6,7.10^5$	$1,1.10^6$	$2,3.10^6$	$3,7.10^6$	$6,3.10^6$	$7,1.10^6$	2	$5,6.10^2$
Sr-81	$2,9.10^6$	$4,3.10^6$	$9,1.10^6$	$1,4.10^7$	$2,3.10^7$	$2,7.10^7$	2	$2,3.10^3$
Sr-82	$1,6.10^4$	$2,2.10^4$	$4,0.10^4$	$5,9.10^4$	$8,3.10^4$	$9,1.10^4$	4	$1,1.10^1$
Sr-83	$3,6.10^5$	$5,0.10^5$	$1,0.10^6$	$1,5.10^6$	$2,4.10^6$	$2,9.10^6$	2	$2,6.10^2$
Sr-85	$2,3.10^5$	$2,7.10^5$	$4,5.10^5$	$7,7.10^5$	$1,0.10^6$	$1,2.10^6$	5	$1,4.10^2$
Sr-85m	$3,1.10^7$	$3,8.10^7$	$7,7.10^7$	$1,2.10^8$	$1,9.10^8$	$2,3.10^8$	2	$2,0.10^4$
Sr-87m	$5,9.10^6$	$8,3.10^6$	$1,6.10^7$	$2,5.10^7$	$3,8.10^7$	$4,8.10^7$	2	$4,4.10^3$
Sr-89	$2,6.10^4$	$3,3.10^4$	$5,9.10^4$	$8,3.10^4$	$1,1.10^5$	$1,3.10^5$	5	$1,5.10^1$
Sr-90	$2,4.10^3$	$2,5.10^3$	$3,7.10^3$	$5,6.10^3$	$6,3.10^3$	$6,3.10^3$	6	$7,7.10^{-1}$
Sr-91	$2,9.10^5$	$4,0.10^5$	$8,3.10^5$	$1,3.10^6$	$2,0.10^6$	$2,4.10^6$	2	$2,1.10^2$
Sr-92	$4,5.10^5$	$6,7.10^5$	$1,4.10^6$	$2,2.10^6$	$3,7.10^6$	$4,3.10^6$	2	$3,5.10^2$
Y-86	$2,6.10^5$	$3,3.10^5$	$6,7.10^5$	$1,0.10^6$	$1,7.10^6$	$2,1.10^6$	2	$1,8.10^2$
Y-86m	$4,3.10^6$	$5,6.10^6$	$1,1.10^7$	$1,8.10^7$	$2,9.10^7$	$3,6.10^7$	2	$2,9.10^3$
Y-87	$3,6.10^5$	$4,5.10^5$	$9,1.10^5$	$1,4.10^6$	$2,0.10^6$	$2,6.10^6$	2	$2,4.10^2$
Y-88	$5,0.10^4$	$5,9.10^4$	$1,0.10^5$	$1,5.10^5$	$1,9.10^5$	$2,3.10^5$	5	$2,5.10^1$
Y-90	$7,7.10^4$	$1,1.10^5$	$2,4.10^5$	$3,7.10^5$	$5,6.10^5$	$6,7.10^5$	2	$6,0.10^1$
Y-90m	$1,3.10^6$	$1,7.10^6$	$3,4.10^6$	$5,3.10^6$	$8,3.10^6$	$1,0.10^7$	2	$8,8.10^2$
Y-91	$2,3.10^4$	$2,9.10^4$	$5,3.10^4$	$7,7.10^4$	$1,0.10^5$	$1,1.10^5$	5	$1,4.10^1$
Y-91m	$1,4.10^7$	$1,7.10^7$	$3,2.10^7$	$5,0.10^7$	$7,1.10^7$	$9,1.10^7$	2	$8,9.10^3$
Y-92	$5,3.10^5$	$8,3.10^5$	$1,8.10^6$	$2,9.10^6$	$4,8.10^6$	$5,6.10^6$	2	$4,4.10^2$
Y-93	$2,2.10^5$	$3,3.10^5$	$7,1.10^5$	$1,2.10^6$	$2,0.10^6$	$2,4.10^6$	2	$1,8.10^2$
Y-94	$3,4.10^6$	$5,3.10^6$	$1,2.10^7$	$1,9.10^7$	$3,0.10^7$	$3,6.10^7$	2	$2,8.10^3$
Y-95	$6,3.10^6$	$1,0.10^7$	$2,2.10^7$	$3,4.10^7$	$5,6.10^7$	$6,3.10^7$	2	$5,3.10^3$
Zr-86	$2,9.10^5$	$3,7.10^5$	$7,7.10^5$	$1,1.10^6$	$1,9.10^6$	$2,3.10^6$	2	$1,9.10^2$
Zr-88	$7,7.10^4$	$8,3.10^4$	$1,3.10^5$	$1,9.10^5$	$2,3.10^5$	$2,8.10^5$	5	$3,2.10^1$
Zr-89	$2,6.10^5$	$3,4.10^5$	$6,7.10^5$	$1,0.10^6$	$1,5.10^6$	$1,8.10^6$	4	$1,8.10^2$
Zr-93	$1,4.10^5$	$1,6.10^5$	$1,9.10^5$	$1,0.10^5$	$5,6.10^4$	$4,0.10^4$	6	$4,9.10^0$
Zr-95	$4,2.10^4$	$5,3.10^4$	$1,0.10^5$	$1,2.10^5$	$1,4.10^5$	$1,7.10^5$	5	$1,9.10^1$
Zr-97	$1,2.10^5$	$1,8.10^5$	$3,4.10^5$	$5,3.10^5$	$8,3.10^5$	$1,1.10^6$	2, 4	$9,4.10^1$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Nb-88	$3{,}8.10^{6}$	$5{,}6.10^{6}$	$1{,}1.10^{7}$	$1{,}8.10^{7}$	$2{,}9.10^{7}$	$3{,}6.10^{7}$	2	$2{,}9.10^{3}$
Nb-89	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$2{,}7.10^{6}$	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$6{,}7.10^{2}$
Nb-89m	$1{,}6.10^{6}$	$2{,}3.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$1{,}2.10^{7}$	$1{,}4.10^{7}$	2	$1{,}2.10^{3}$
Nb-90	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	2	$1{,}3.10^{2}$
Nb-93m	$1{,}4.10^{5}$	$1{,}5.10^{5}$	$2{,}5.10^{5}$	$4{,}0.10^{5}$	$5{,}3.10^{5}$	$5{,}6.10^{5}$	6	$6{,}9.10^{1}$
Nb-94	$8{,}3.10^{3}$	$8{,}3.10^{3}$	$1{,}2.10^{4}$	$1{,}7.10^{4}$	$1{,}9.10^{4}$	$2{,}0.10^{4}$	6	$2{,}5.10^{0}$
Nb-95	$1{,}3.10^{5}$	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$4{,}0.10^{5}$	$4{,}5.10^{5}$	$5{,}6.10^{5}$	5	$6{,}2.10^{1}$
Nb-95m	$2{,}2.10^{5}$	$2{,}9.10^{5}$	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	5	$1{,}2.10^{2}$
Nb-96	$2{,}0.10^{5}$	$2{,}7.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	2	$1{,}4.10^{2}$
Nb-97	$2{,}6.10^{6}$	$3{,}8.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}8.10^{7}$	$2{,}2.10^{7}$	2	$2{,}0.10^{3}$
Nb-98	$1{,}9.10^{6}$	$2{,}7.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}7.10^{7}$	2	$1{,}4.10^{3}$
Mo-90	$3{,}6.10^{5}$	$4{,}8.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$2{,}8.10^{6}$	2	$2{,}5.10^{2}$
Mo-93	$1{,}7.10^{5}$	$1{,}7.10^{5}$	$2{,}5.10^{5}$	$3{,}6.10^{5}$	$4{,}2.10^{5}$	$4{,}3.10^{5}$	6	$5{,}4.10^{1}$
Mo-93m	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$2{,}9.10^{6}$	$4{,}8.10^{6}$	$5{,}9.10^{6}$	4	$5{,}3.10^{2}$
Mo-99	$1{,}4.10^{5}$	$2{,}1.10^{5}$	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$8{,}3.10^{5}$	$1{,}0.10^{6}$	4	$1{,}1.10^{2}$
Mo-101	$4{,}3.10^{6}$	$6{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}1.10^{7}$	$3{,}2.10^{7}$	$3{,}8.10^{7}$	2	$3{,}3.10^{3}$
Tc-93	$3{,}6.10^{6}$	$4{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$2{,}2.10^{7}$	$2{,}9.10^{7}$	2	$2{,}3.10^{3}$
Tc-93m	$7{,}1.10^{6}$	$9{,}1.10^{6}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$4{,}8.10^{7}$	$5{,}9.10^{7}$	2	$4{,}8.10^{3}$
Tc-94	$1{,}0.10^{6}$	$1{,}2.10^{6}$	$2{,}3.10^{6}$	$3{,}7.10^{6}$	$6{,}3.10^{6}$	$7{,}7.10^{6}$	2	$6{,}4.10^{2}$
Tc-94m	$2{,}1.10^{6}$	$2{,}9.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}8.10^{7}$	$2{,}2.10^{7}$	2	$1{,}5.10^{3}$
Tc-95	$1{,}2.10^{6}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}3.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$7{,}5.10^{2}$
Tc-95m	$1{,}7.10^{5}$	$2{,}0.10^{5}$	$3{,}7.10^{5}$	$5{,}6.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	5	$9{,}1.10^{1}$
Tc-96	$2{,}1.10^{5}$	$2{,}6.10^{5}$	$4{,}8.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	4	$1{,}3.10^{2}$
Tc-96m	$1{,}8.10^{7}$	$2{,}3.10^{7}$	$4{,}3.10^{7}$	$6{,}7.10^{7}$	$1{,}1.10^{8}$	$1{,}3.10^{8}$	4	$1{,}2.10^{4}$
Tc-97	$2{,}0.10^{5}$	$2{,}1.10^{5}$	$3{,}0.10^{5}$	$4{,}5.10^{5}$	$5{,}3.10^{5}$	$5{,}6.10^{5}$	6	$6{,}9.10^{1}$
Tc-97m	$6{,}3.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$1{,}8.10^{5}$	$1{,}9.10^{5}$	$2{,}4.10^{5}$	5	$2{,}6.10^{1}$
Tc-98	$9{,}1.10^{3}$	$9{,}1.10^{3}$	$1{,}3.10^{4}$	$1{,}9.10^{4}$	$2{,}1.10^{4}$	$2{,}2.10^{4}$	6	$2{,}7.10^{0}$
Tc-99	$2{,}4.10^{4}$	$2{,}7.10^{4}$	$4{,}2.10^{4}$	$5{,}9.10^{4}$	$6{,}7.10^{4}$	$7{,}7.10^{4}$	6	$9{,}1.10^{0}$
Tc-99m	$7{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$4{,}0.10^{7}$	$5{,}0.10^{7}$	4	$5{,}1.10^{3}$
Tc-101	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$3{,}0.10^{7}$	$4{,}5.10^{7}$	$7{,}1.10^{7}$	$8{,}3.10^{7}$	2	$7{,}2.10^{3}$
Tc-104	$3{,}4.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$3{,}4.10^{7}$	2	$2{,}8.10^{3}$
Ru-94	$2{,}5.10^{6}$	$3{,}4.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$2{,}3.10^{7}$	2	$1{,}8.10^{3}$
Ru-94 (tetroxide)	$1{,}8.10^{6}$	$2{,}9.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}5.10^{3}$
Ru-97	$1{,}2.10^{6}$	$1{,}6.10^{6}$	$3{,}0.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$8{,}4.10^{2}$
Ru-97 (tetroxide)	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$8{,}3.10^{6}$	4	$8{,}1.10^{2}$
Ru-103	$7{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$2{,}4.10^{5}$	$2{,}7.10^{5}$	$3{,}3.10^{5}$	5	$3{,}7.10^{1}$
Ru-103 (tetroxide)	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$3{,}0.10^{5}$	$4{,}8.10^{5}$	$7{,}7.10^{5}$	$9{,}1.10^{5}$	2	$8{,}5.10^{1}$
Ru-105	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$2{,}1.10^{6}$	$3{,}1.10^{6}$	$4{,}5.10^{6}$	$3{,}6.10^{6}$	6	$4{,}4.10^{2}$
Ru-105 (tetroxide)	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$3{,}1.10^{6}$	$4{,}5.10^{6}$	$5{,}6.10^{6}$	2	$5{,}3.10^{2}$
Ru-106	$3{,}8.10^{3}$	$4{,}3.10^{3}$	$7{,}1.10^{3}$	$1{,}1.10^{4}$	$1{,}4.10^{4}$	$1{,}5.10^{4}$	6	$1{,}9.10^{0}$
Ru-106 (tetroxide)	$6{,}3.10^{3}$	$9{,}1.10^{3}$	$1{,}6.10^{4}$	$2{,}7.10^{4}$	$4{,}5.10^{4}$	$5{,}6.10^{4}$	2	$4{,}8.10^{0}$
Rh-99	$2{,}0.10^{5}$	$2{,}6.10^{5}$	$4{,}5.10^{5}$	$7{,}7.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	5	$1{,}2.10^{2}$
Rh-99m	$3{,}1.10^{6}$	$3{,}8.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$2{,}5.10^{7}$	2	$2{,}0.10^{3}$
Rh-100	$3{,}6.10^{5}$	$4{,}5.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}3.10^{6}$	$2{,}9.10^{6}$	2	$2{,}4.10^{2}$
Rh-101	$5{,}3.10^{4}$	$5{,}9.10^{4}$	$9{,}1.10^{4}$	$1{,}4.10^{5}$	$1{,}6.10^{5}$	$1{,}9.10^{5}$	5	$2{,}2.10^{1}$
Rh-101m	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$2{,}7.10^{6}$	$3{,}7.10^{6}$	$4{,}8.10^{6}$	4	$4{,}8.10^{2}$
Rh-102	$1{,}9.10^{4}$	$2{,}0.10^{4}$	$2{,}9.10^{4}$	$4{,}2.10^{4}$	$5{,}0.10^{4}$	$5{,}9.10^{4}$	5	$6{,}8.10^{0}$
Rh-102m	$3{,}3.10^{4}$	$4{,}0.10^{4}$	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}2.10^{5}$	$1{,}4.10^{5}$	5	$1{,}7.10^{1}$
Rh-103m	$5{,}0.10^{7}$	$7{,}7.10^{7}$	$1{,}5.10^{8}$	$2{,}3.10^{8}$	$3{,}1.10^{8}$	$3{,}7.10^{8}$	2	$4{,}0.10^{4}$
Rh-105	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$1{,}3.10^{6}$	$1{,}8.10^{6}$	$2{,}2.10^{6}$	$2{,}9.10^{6}$	5	$3{,}0.10^{2}$
Rh-106m	$1{,}2.10^{6}$	$1{,}5.10^{6}$	$3{,}0.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$8{,}1.10^{2}$
Rh-107	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$2{,}3.10^{7}$	$3{,}4.10^{7}$	$5{,}3.10^{7}$	$5{,}9.10^{7}$	2	$5{,}4.10^{3}$
Pd-100	$1{,}9.10^{5}$	$2{,}4.10^{5}$	$4{,}5.10^{5}$	$6{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}2.10^{6}$	4	$1{,}2.10^{2}$
Pd-101	$2{,}0.10^{6}$	$2{,}6.10^{6}$	$5{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$1{,}3.10^{3}$
Pd-103	$4{,}0.10^{5}$	$5{,}6.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	$2{,}2.10^{6}$	5	$2{,}6.10^{2}$
Pd-107	$4{,}5.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	$1{,}7.10^{6}$	6	$2{,}1.10^{2}$
Pd-109	$3{,}7.10^{5}$	$5{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}2.10^{6}$	$2{,}7.10^{6}$	2	$2{,}8.10^{2}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Ag-102	$6,3.10^6$	$8,3.10^6$	$1,8.10^7$	$2,9.10^7$	$4,5.10^7$	$5,6.10^7$	2	$4,4.10^3$
Ag-103	$4,3.10^6$	$6,3.10^6$	$1,3.10^7$	$2,0.10^7$	$3,0.10^7$	$3,7.10^7$	2	$3,3.10^3$
Ag-104	$3,4.10^6$	$4,2.10^6$	$8,3.10^6$	$1,3.10^7$	$2,2.10^7$	$2,7.10^7$	2	$2,2.10^3$
Ag-104m	$4,2.10^6$	$5,9.10^6$	$1,3.10^7$	$2,0.10^7$	$3,2.10^7$	$3,8.10^7$	2	$3,1.10^3$
Ag-105	$2,2.10^5$	$2,8.10^5$	$4,8.10^5$	$7,7.10^5$	$1,0.10^6$	$1,2.10^6$	5	$1,4.10^2$
Ag-106	$6,7.10^6$	$1,0.10^7$	$2,2.10^7$	$3,4.10^7$	$5,3.10^7$	$6,3.10^7$	2	$5,3.10^3$
Ag-106m	$1,3.10^5$	$1,6.10^5$	$3,1.10^5$	$4,8.10^5$	$7,1.10^5$	$9,1.10^5$	4	$8,5.10^1$
Ag-108m	$1,1.10^4$	$1,1.10^4$	$1,6.10^4$	$2,3.10^4$	$2,6.10^4$	$2,7.10^4$	6	$3,3.10^0$
Ag-110m	$2,2.10^4$	$2,4.10^4$	$3,8.10^4$	$5,6.10^4$	$6,7.10^4$	$8,3.10^4$	5	$9,1.10^0$
Ag-111	$1,0.10^5$	$1,4.10^5$	$2,6.10^5$	$3,7.10^5$	$4,8.10^5$	$5,9.10^5$	5	$6,5.10^1$
Ag-112	$5,6.10^5$	$8,3.10^5$	$1,9.10^6$	$2,9.10^6$	$4,8.10^6$	$5,9.10^6$	2	$4,4.10^2$
Ag-115	$3,7.10^6$	$5,9.10^6$	$1,3.10^7$	$1,9.10^7$	$2,9.10^7$	$3,4.10^7$	2	$3,1.10^3$
Cd-104	$3,7.10^6$	$4,5.10^6$	$9,1.10^6$	$1,4.10^7$	$2,3.10^7$	$2,9.10^7$	2	$2,4.10^3$
Cd-107	$1,8.10^6$	$2,6.10^6$	$4,8.10^6$	$7,1.10^6$	$1,0.10^7$	$1,2.10^7$	4	$1,3.10^3$
Cd-109	$2,2.10^4$	$2,7.10^4$	$4,8.10^4$	$7,1.10^4$	$1,1.10^5$	$1,2.10^5$	4	$1,3.10^1$
Cd-113	$3,8.10^3$	$4,2.10^3$	$5,9.10^3$	$7,1.10^3$	$8,3.10^3$	$8,3.10^3$	6	$1,0.10^0$
Cd-113m	$3,3.10^3$	$3,7.10^3$	$5,6.10^3$	$7,7.10^3$	$9,1.10^3$	$9,1.10^3$	6	$1,1.10^0$
Cd-115	$1,4.10^5$	$2,0.10^5$	$3,8.10^5$	$5,6.10^5$	$7,7.10^5$	$9,1.10^5$	4	$9,9.10^1$
Cd-115m	$2,2.10^4$	$3,1.10^4$	$5,9.10^4$	$9,1.10^4$	$1,1.10^5$	$1,3.10^5$	5	$1,5.10^1$
Cd-117	$7,1.10^5$	$1,0.10^6$	$2,1.10^6$	$3,2.10^6$	$4,8.10^6$	$5,9.10^6$	2	$5,4.10^2$
Cd-117m	$6,7.10^5$	$9,1.10^5$	$1,8.10^6$	$2,6.10^6$	$3,8.10^6$	$4,8.10^6$	4	$4,7.10^2$
In-109	$3,0.10^6$	$3,8.10^6$	$7,7.10^6$	$1,2.10^7$	$1,9.10^7$	$2,4.10^7$	2	$2,0.10^3$
In-110	$1,0.10^6$	$1,2.10^6$	$2,3.10^6$	$3,7.10^6$	$6,3.10^6$	$7,7.10^6$	2	$6,3.10^2$
In-110m	$2,2.10^6$	$3,2.10^6$	$6,7.10^6$	$1,1.10^7$	$1,7.10^7$	$2,1.10^7$	2	$1,7.10^3$
In-111	$6,7.10^5$	$8,3.10^5$	$1,6.10^6$	$2,4.10^6$	$3,4.10^6$	$4,3.10^6$	4	$4,4.10^2$
In-112	$1,5.10^7$	$2,3.10^7$	$5,0.10^7$	$7,7.10^7$	$1,1.10^8$	$1,4.10^8$	2	$1,2.10^4$
In-113m	$6,3.10^6$	$9,1.10^6$	$1,8.10^7$	$2,8.10^7$	$4,2.10^7$	$5,0.10^7$	2	$4,8.10^3$
In-114m	$8,3.10^3$	$1,3.10^4$	$2,9.10^4$	$5,3.10^4$	$9,1.10^4$	$1,1.10^5$	2	$6,8.10^0$
In-115	$1,2.10^3$	$1,3.10^3$	$1,8.10^3$	$2,0.10^3$	$2,4.10^3$	$2,6.10^3$	6	$3,2.10^{-1}$
In-115m	$2,1.10^6$	$3,0.10^6$	$6,3.10^6$	$1,0.10^7$	$1,4.10^7$	$1,7.10^7$	2	$1,6.10^3$
In-116m	$2,8.10^6$	$3,7.10^6$	$7,7.10^6$	$1,2.10^7$	$1,8.10^7$	$2,2.10^7$	2	$1,9.10^3$
In-117	$4,3.10^6$	$6,3.10^6$	$1,3.10^7$	$2,0.10^7$	$2,9.10^7$	$3,4.10^7$	2	$3,3.10^3$
In-117m	$1,7.10^6$	$2,5.10^6$	$5,3.10^6$	$7,7.10^6$	$1,1.10^7$	$1,4.10^7$	2	$1,3.10^3$
In-119m	$5,6.10^6$	$9,1.10^6$	$2,0.10^7$	$3,1.10^7$	$5,0.10^7$	$5,9.10^7$	2	$4,8.10^3$
Sn-110	$6,7.10^5$	$9,1.10^5$	$2,0.10^6$	$3,1.10^6$	$5,3.10^6$	$6,3.10^6$	2	$4,8.10^2$
Sn-111	$9,1.10^6$	$1,3.10^7$	$2,6.10^7$	$4,0.10^7$	$6,3.10^7$	$7,7.10^7$	2	$6,6.10^3$
Sn-113	$7,7.10^4$	$1,0.10^5$	$1,7.10^5$	$2,5.10^5$	$3,1.10^5$	$3,7.10^5$	5	$4,3.10^1$
Sn-117m	$1,0.10^5$	$1,3.10^5$	$2,2.10^5$	$2,9.10^5$	$3,2.10^5$	$4,2.10^5$	5	$4,4.10^1$
Sn-119m	$1,0.10^5$	$1,3.10^5$	$2,1.10^5$	$3,2.10^5$	$3,8.10^5$	$4,5.10^5$	5	$5,3.10^1$
Sn-121	$6,7.10^5$	$9,1.10^5$	$2,0.10^6$	$2,8.10^6$	$3,4.10^6$	$4,3.10^6$	5	$4,7.10^2$
Sn-121m	$5,3.10^4$	$6,7.10^4$	$1,1.10^5$	$1,6.10^5$	$1,8.10^5$	$2,2.10^5$	5	$2,5.10^1$
Sn-123	$2,5.10^4$	$3,2.10^4$	$5,6.10^4$	$8,3.10^4$	$1,1.10^5$	$1,2.10^5$	5	$1,4.10^1$
Sn-123m	$4,3.10^6$	$6,7.10^6$	$1,4.10^7$	$2,2.10^7$	$3,1.10^7$	$3,7.10^7$	2	$3,5.10^3$
Sn-125	$4,8.10^4$	$6,7.10^4$	$1,3.10^5$	$2,0.10^5$	$2,8.10^5$	$3,2.10^5$	2	$3,5.10^1$
Sn-126	$8,3.10^3$	$1,0.10^4$	$1,6.10^4$	$2,4.10^4$	$3,0.10^4$	$3,6.10^4$	5	$4,2.10^0$
Sn-127	$1,0.10^6$	$1,4.10^6$	$2,7.10^6$	$4,2.10^6$	$6,3.10^6$	$7,7.10^6$	2	$7,1.10^2$
Sn-128	$1,3.10^6$	$1,8.10^6$	$3,7.10^6$	$5,9.10^6$	$9,1.10^6$	$1,1.10^7$	2	$9,6.10^2$
Sb-115	$8,3.10^6$	$1,2.10^7$	$2,4.10^7$	$3,8.10^7$	$5,9.10^7$	$7,1.10^7$	2	$6,1.10^3$
Sb-116	$8,3.10^6$	$1,2.10^7$	$2,4.10^7$	$3,8.10^7$	$6,3.10^7$	$7,7.10^7$	2	$6,2.10^3$
Sb-116m	$2,7.10^6$	$3,4.10^6$	$6,7.10^6$	$1,1.10^7$	$1,6.10^7$	$2,0.10^7$	2	$1,8.10^3$
Sb-117	$7,7.10^6$	$1,1.10^7$	$2,1.10^7$	$3,2.10^7$	$4,5.10^7$	$5,9.10^7$	2	$5,5.10^3$
Sb-118m	$1,1.10^6$	$1,3.10^6$	$2,4.10^6$	$4,0.10^6$	$6,7.10^6$	$8,3.10^6$	2	$6,7.10^2$
Sb-119	$2,4.10^6$	$3,4.10^6$	$7,1.10^6$	$1,2.10^7$	$2,2.10^7$	$2,8.10^7$	2	$1,8.10^3$
Sb-120m	$1,5.10^5$	$1,9.10^5$	$3,4.10^5$	$5,3.10^5$	$7,1.10^5$	$9,1.10^5$	4	$9,4.10^1$
Sb-120	$1,5.10^7$	$2,2.10^7$	$4,8.10^7$	$7,1.10^7$	$1,1.10^8$	$1,4.10^8$	2	$1,1.10^4$
Sb-122	$1,1.10^5$	$1,6.10^5$	$3,3.10^5$	$5,0.10^5$	$7,1.10^5$	$9,1.10^5$	2	$8,6.10^1$
Sb-124	$2,6.10^4$	$3,2.10^4$	$5,6.10^4$	$7,7.10^4$	$1,0.10^5$	$1,2.10^5$	5	$1,4.10^1$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Sb-124m	$2{,}2.10^{7}$	$3{,}0.10^{7}$	$6{,}3.10^{7}$	$1{,}0.10^{8}$	$1{,}4.10^{8}$	$1{,}7.10^{8}$	2	$1{,}6.10^{4}$
Sb-125	$2{,}4.10^{4}$	$2{,}6.10^{4}$	$4{,}2.10^{4}$	$6{,}3.10^{4}$	$7{,}1.10^{4}$	$8{,}3.10^{4}$	5	$9{,}8.10^{0}$
Sb-126	$5{,}3.10^{4}$	$6{,}7.10^{4}$	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$2{,}5.10^{5}$	$3{,}1.10^{5}$	5	$3{,}4.10^{1}$
Sb-126m	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}8.10^{7}$	$2{,}7.10^{7}$	$4{,}2.10^{7}$	$5{,}0.10^{7}$	2	$4{,}4.10^{3}$
Sb-127	$9{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}4.10^{5}$	$3{,}3.10^{5}$	$4{,}3.10^{5}$	$5{,}3.10^{5}$	4	$6{,}0.10^{1}$
Sb-128	$2{,}9.10^{5}$	$3{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	2	$2{,}0.10^{2}$
Sb-128m	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$2{,}3.10^{7}$	$3{,}6.10^{7}$	$5{,}6.10^{7}$	$6{,}7.10^{7}$	2	$5{,}6.10^{3}$
Sb-129	$4{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$3{,}3.10^{6}$	$4{,}0.10^{6}$	2	$3{,}5.10^{2}$
Sb-130	$2{,}2.10^{6}$	$3{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}6.10^{3}$
Sb-131	$2{,}6.10^{6}$	$3{,}6.10^{6}$	$7{,}1.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}3.10^{7}$	2	$1{,}9.10^{3}$
Te-116	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$3{,}0.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$7{,}9.10^{2}$
Te-116 (vapour)	$1{,}7.10^{6}$	$2{,}3.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	4	$1{,}1.10^{3}$
Te-121	$4{,}2.10^{5}$	$5{,}0.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}0.10^{6}$	$2{,}4.10^{6}$	4	$2{,}5.10^{2}$
Te-121 (vapour)	$3{,}3.10^{5}$	$4{,}2.10^{5}$	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}0.10^{6}$	4	$1{,}9.10^{2}$
Te-121m	$4{,}3.10^{4}$	$5{,}3.10^{4}$	$8{,}3.10^{4}$	$1{,}2.10^{5}$	$1{,}4.10^{5}$	$1{,}8.10^{5}$	5	$2{,}0.10^{1}$
Te-121m (vapour)	$2{,}9.10^{4}$	$3{,}7.10^{4}$	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}5.10^{5}$	$1{,}8.10^{5}$	4	$1{,}8.10^{1}$
Te-123	$9{,}1.10^{4}$	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}1.10^{5}$	$2{,}5.10^{5}$	$2{,}6.10^{5}$	6	$3{,}2.10^{1}$
Te-123 (vapour)	$3{,}6.10^{4}$	$4{,}0.10^{4}$	$5{,}3.10^{4}$	$6{,}7.10^{4}$	$7{,}7.10^{4}$	$8{,}3.10^{4}$	6	$1{,}0.10^{1}$
Te-123m	$5{,}0.10^{4}$	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}4.10^{5}$	$1{,}6.10^{5}$	$2{,}0.10^{5}$	5	$2{,}2.10^{1}$
Te-123m (vapour)	$4{,}0.10^{4}$	$5{,}6.10^{4}$	$1{,}0.10^{5}$	$1{,}8.10^{5}$	$2{,}9.10^{5}$	$3{,}4.10^{5}$	2	$2{,}9.10^{1}$
Te-125m	$5{,}9.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$1{,}7.10^{5}$	$1{,}9.10^{5}$	$2{,}4.10^{5}$	5	$2{,}6.10^{1}$
Te-125m (vapour)	$6{,}7.10^{4}$	$9{,}1.10^{4}$	$1{,}7.10^{5}$	$3{,}1.10^{5}$	$5{,}3.10^{5}$	$6{,}7.10^{5}$	2	$4{,}8.10^{1}$
Te-127	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$3{,}8.10^{6}$	$5{,}9.10^{6}$	$7{,}1.10^{6}$	2	$6{,}7.10^{2}$
Te-127 (vapour)	$1{,}6.10^{6}$	$2{,}3.10^{6}$	$4{,}3.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}3.10^{7}$	2	$1{,}2.10^{3}$
Te-127m	$2{,}4.10^{4}$	$3{,}0.10^{4}$	$5{,}0.10^{4}$	$7{,}1.10^{4}$	$8{,}3.10^{4}$	$1{,}0.10^{5}$	5	$1{,}1.10^{1}$
Te-127m (vapour)	$1{,}9.10^{4}$	$2{,}7.10^{4}$	$5{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}6.10^{5}$	$2{,}2.10^{5}$	2	$1{,}4.10^{1}$
Te-129	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}4.10^{7}$	$2{,}1.10^{7}$	$2{,}6.10^{7}$	2	$2{,}3.10^{3}$
Te-129 (vapour)	$4{,}0.10^{6}$	$5{,}9.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}3.10^{7}$	$2{,}7.10^{7}$	4	$2{,}9.10^{3}$
Te-129m	$2{,}6.10^{4}$	$3{,}4.10^{4}$	$5{,}9.10^{4}$	$8{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}3.10^{5}$	5	$1{,}4.10^{1}$
Te-129m (vapour)	$2{,}1.10^{4}$	$3{,}1.10^{4}$	$6{,}3.10^{4}$	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$2{,}7.10^{5}$	2	$1{,}6.10^{1}$
Te-131	$3{,}8.10^{6}$	$5{,}0.10^{6}$	$1{,}0.10^{7}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$3{,}6.10^{7}$	2	$2{,}6.10^{3}$
Te-131 (vapour)	$2{,}0.10^{6}$	$2{,}2.10^{6}$	$3{,}8.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}5.10^{7}$	2	$1{,}2.10^{3}$
Te-131m	$1{,}1.10^{5}$	$1{,}3.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	2	$6{,}9.10^{1}$
Te-131m (vapour)	$4{,}8.10^{4}$	$5{,}3.10^{4}$	$9{,}1.10^{4}$	$1{,}8.10^{5}$	$2{,}7.10^{5}$	$4{,}2.10^{5}$	2	$2{,}8.10^{1}$
Te-132	$4{,}5.10^{4}$	$5{,}6.10^{4}$	$1{,}2.10^{5}$	$2{,}4.10^{5}$	$3{,}8.10^{5}$	$5{,}0.10^{5}$	2	$2{,}9.10^{1}$
Te-132 (vapour)	$1{,}9.10^{4}$	$2{,}2.10^{4}$	$4{,}2.10^{4}$	$8{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}0.10^{5}$	2	$1{,}2.10^{1}$
Te-133	$4{,}2.10^{6}$	$4{,}8.10^{6}$	$1{,}0.10^{7}$	$2{,}2.10^{7}$	$3{,}6.10^{7}$	$5{,}0.10^{7}$	2	$2{,}5.10^{3}$
Te-133 (vapour)	$1{,}8.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}8.10^{7}$	2	$1{,}1.10^{3}$
Te-133m	$1{,}0.10^{6}$	$1{,}1.10^{6}$	$2{,}4.10^{6}$	$5{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$5{,}9.10^{2}$
Te-133m (vapour)	$4{,}3.10^{5}$	$5{,}0.10^{5}$	$9{,}1.10^{5}$	$2{,}0.10^{6}$	$3{,}0.10^{6}$	$4{,}5.10^{6}$	2	$2{,}6.10^{2}$
Te-134	$1{,}8.10^{6}$	$2{,}5.10^{6}$	$5{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$1{,}3.10^{3}$
Te-134 (vapour)	$1{,}5.10^{6}$	$1{,}8.10^{6}$	$3{,}3.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$9{,}6.10^{2}$
I-120	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$2{,}1.10^{6}$	$4{,}3.10^{6}$	$7{,}1.10^{6}$	$1{,}0.10^{7}$	2	$5{,}3.10^{2}$
I-120 (elemental iodine)	$3{,}3.10^{5}$	$4{,}2.10^{5}$	$7{,}7.10^{5}$	$1{,}6.10^{6}$	$2{,}3.10^{6}$	$3{,}3.10^{6}$	2	$2{,}2.10^{2}$
I-120 (methyl iodide)	$4{,}3.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$2{,}1.10^{6}$	$3{,}2.10^{6}$	$5{,}0.10^{6}$	2	$2{,}8.10^{2}$
I-120m	$1{,}2.10^{6}$	$1{,}4.10^{6}$	$3{,}0.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$7{,}6.10^{2}$
I-120m (elemental iodine)	$6{,}7.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$5{,}6.10^{6}$	2	$4{,}4.10^{2}$
I-120m (methyl iodide)	$1{,}0.10^{6}$	$1{,}1.10^{6}$	$2{,}2.10^{6}$	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	2	$6{,}0.10^{2}$
I-121	$4{,}3.10^{6}$	$4{,}8.10^{6}$	$9{,}1.10^{6}$	$1{,}7.10^{7}$	$2{,}6.10^{7}$	$3{,}7.10^{7}$	2	$2{,}5.10^{3}$
I-121 (elemental iodine)	$1{,}8.10^{6}$	$2{,}0.10^{6}$	$3{,}3.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	2	$1{,}0.10^{3}$
I-121 (methyl iodide)	$2{,}4.10^{6}$	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}8.10^{7}$	2	$1{,}4.10^{3}$
I-123	$1{,}1.10^{6}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	2	$6{,}7.10^{2}$
I-123 (elemental iodine)	$4{,}8.10^{5}$	$5{,}6.10^{5}$	$1{,}0.10^{6}$	$2{,}1.10^{6}$	$3{,}1.10^{6}$	$4{,}8.10^{6}$	2	$2{,}9.10^{2}$
I-123 (methyl iodide)	$6{,}3.10^{5}$	$7{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}8.10^{6}$	$4{,}2.10^{6}$	$6{,}7.10^{6}$	2	$3{,}8.10^{2}$
I-124	$2{,}1.10^{4}$	$2{,}2.10^{4}$	$4{,}5.10^{4}$	$9{,}1.10^{4}$	$1{,}5.10^{5}$	$2{,}3.10^{5}$	2	$1{,}2.10^{1}$
I-124 (elemental iodine)	$9{,}1.10^{3}$	$1{,}0.10^{4}$	$1{,}7.10^{4}$	$3{,}6.10^{4}$	$5{,}6.10^{4}$	$8{,}3.10^{4}$	2	$5{,}3.10^{0}$
I-124 (methyl iodide)	$1{,}2.10^{4}$	$1{,}3.10^{4}$	$2{,}2.10^{4}$	$4{,}5.10^{4}$	$7{,}1.10^{4}$	$1{,}1.10^{5}$	2	$6{,}6.10^{0}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
I-125	$5{,}0.10^4$	$4{,}3.10^4$	$6{,}7.10^4$	$9{,}1.10^4$	$1{,}4.10^5$	$2{,}0.10^5$	4	$1{,}6.10^1$
I-125 (elemental iodine)	$2{,}1.10^4$	$1{,}9.10^4$	$2{,}7.10^4$	$3{,}6.10^4$	$5{,}0.10^4$	$7{,}1.10^4$	4	$6{,}4.10^0$
I-125 (methyl iodide)	$2{,}7.10^4$	$2{,}5.10^4$	$3{,}4.10^4$	$4{,}5.10^4$	$6{,}3.10^4$	$9{,}1.10^4$	4	$8{,}1.10^0$
I-126	$1{,}2.10^4$	$1{,}2.10^4$	$2{,}2.10^4$	$4{,}2.10^4$	$6{,}7.10^4$	$1{,}0.10^5$	2	$6{,}3.10^0$
I-126 (elemental iodine)	$5{,}3.10^3$	$5{,}3.10^3$	$9{,}1.10^3$	$1{,}6.10^4$	$2{,}4.10^4$	$3{,}8.10^4$	2	$2{,}8.10^0$
I-126 (methyl iodide)	$6{,}7.10^3$	$6{,}7.10^3$	$1{,}1.10^4$	$2{,}1.10^4$	$3{,}1.10^4$	$5{,}0.10^4$	3	$3{,}5.10^0$
I-128	$5{,}3.10^6$	$8{,}3.10^6$	$1{,}9.10^7$	$2{,}9.10^7$	$4{,}3.10^7$	$5{,}0.10^7$	2	$4{,}4.10^3$
I-128 (elemental iodine)	$2{,}4.10^6$	$3{,}6.10^6$	$6{,}3.10^6$	$1{,}0.10^7$	$1{,}3.10^7$	$1{,}5.10^7$	4	$1{,}8.10^3$
I-128 (methyl iodide)	$6{,}7.10^6$	$8{,}3.10^6$	$1{,}6.10^7$	$3{,}3.10^7$	$5{,}3.10^7$	$7{,}7.10^7$	2	$4{,}4.10^3$
I-129	$1{,}4.10^4$	$1{,}2.10^4$	$1{,}6.10^4$	$1{,}5.10^4$	$2{,}2.10^4$	$2{,}8.10^4$	4	$2{,}7.10^0$
I-129 (elemental iodine)	$5{,}9.10^3$	$5{,}0.10^3$	$6{,}3.10^3$	$5{,}9.10^3$	$7{,}7.10^3$	$1{,}0.10^4$	4	$1{,}1.10^0$
I-129 (methyl iodide)	$7{,}7.10^3$	$6{,}7.10^3$	$8{,}3.10^3$	$7{,}7.10^3$	$1{,}0.10^4$	$1{,}4.10^4$	4	$1{,}4.10^0$
I-130	$1{,}2.10^5$	$1{,}4.10^5$	$2{,}9.10^5$	$6{,}3.10^5$	$1{,}0.10^6$	$1{,}5.10^6$	2	$7{,}1.10^1$
I-130 (elemental iodine)	$5{,}3.10^4$	$5{,}9.10^4$	$1{,}1.10^5$	$2{,}3.10^5$	$3{,}6.10^5$	$5{,}3.10^5$	2	$3{,}1.10^1$
I-130 (methyl iodide)	$6{,}7.10^4$	$7{,}7.10^4$	$1{,}4.10^5$	$3{,}0.10^5$	$4{,}5.10^5$	$7{,}1.10^5$	2	$4{,}0.10^1$
I-131	$1{,}4.10^4$	$1{,}4.10^4$	$2{,}7.10^4$	$5{,}3.10^4$	$9{,}1.10^4$	$1{,}4.10^5$	2	$7{,}3.10^0$
I-131 (elemental iodine)	$5{,}9.10^3$	$6{,}3.10^3$	$1{,}1.10^4$	$2{,}1.10^4$	$3{,}2.10^4$	$5{,}0.10^4$	2	$3{,}3.10^0$
I-131 (methyl iodide)	$7{,}7.10^3$	$7{,}7.10^3$	$1{,}4.10^4$	$2{,}7.10^4$	$4{,}2.10^4$	$6{,}7.10^4$	2	$4{,}0.10^0$
I-132	$9{,}1.10^5$	$1{,}0.10^6$	$2{,}2.10^6$	$2{,}9.10^6$	$7{,}1.10^6$	$9{,}1.10^6$	4	$5{,}3.10^2$
I-132 (elemental iodine)	$3{,}6.10^5$	$4{,}3.10^5$	$7{,}7.10^5$	$1{,}6.10^6$	$2{,}3.10^6$	$3{,}2.10^6$	2	$2{,}3.10^2$
I-132 (methyl iodide)	$5{,}0.10^5$	$5{,}6.10^5$	$1{,}1.10^6$	$2{,}3.10^6$	$3{,}4.10^6$	$5{,}3.10^6$	2	$2{,}9.10^2$
I-132m	$1{,}0.10^6$	$1{,}2.10^6$	$2{,}5.10^6$	$5{,}3.10^6$	$8{,}3.10^6$	$1{,}1.10^7$	2	$6{,}3.10^2$
I-132m (elemental iodine)	$4{,}2.10^5$	$4{,}8.10^5$	$9{,}1.10^5$	$1{,}8.10^6$	$2{,}6.10^6$	$3{,}7.10^6$	2	$2{,}5.10^2$
I-132m (methyl iodide)	$5{,}6.10^5$	$6{,}3.10^5$	$1{,}2.10^6$	$2{,}6.10^6$	$4{,}0.10^6$	$6{,}3.10^6$	2	$3{,}3.10^2$
I-133	$5{,}3.10^4$	$5{,}6.10^4$	$1{,}2.10^5$	$2{,}6.10^5$	$4{,}5.10^5$	$6{,}7.10^5$	2	$2{,}9.10^1$
I-133 (elemental iodine)	$2{,}2.10^4$	$2{,}4.10^4$	$4{,}8.10^4$	$1{,}0.10^5$	$1{,}6.10^5$	$2{,}5.10^5$	2	$1{,}3.10^1$
I-133 (methyl iodide)	$2{,}9.10^4$	$3{,}1.10^4$	$5{,}9.10^4$	$1{,}3.10^5$	$2{,}0.10^5$	$3{,}2.10^5$	2	$1{,}6.10^1$
I-134	$2{,}1.10^6$	$2{,}7.10^6$	$5{,}6.10^6$	$9{,}1.10^6$	$1{,}5.10^7$	$1{,}8.10^7$	2	$1{,}4.10^3$
I-134 (elemental iodine)	$1{,}1.10^6$	$1{,}4.10^6$	$2{,}6.10^6$	$4{,}5.10^6$	$6{,}3.10^6$	$6{,}7.10^6$	2	$7{,}6.10^2$
I-134 (methyl iodide)	$2{,}0.10^6$	$2{,}3.10^6$	$4{,}3.10^6$	$9{,}1.10^6$	$1{,}4.10^7$	$2{,}0.10^7$	2	$1{,}2.10^3$
I-135	$2{,}4.10^5$	$2{,}7.10^5$	$5{,}9.10^5$	$1{,}3.10^6$	$2{,}1.10^6$	$3{,}1.10^6$	2	$1{,}4.10^2$
I-135 (elemental iodine)	$1{,}0.10^5$	$1{,}2.10^5$	$2{,}2.10^5$	$4{,}8.10^5$	$7{,}1.10^5$	$1{,}1.10^6$	2	$6{,}2.10^1$
I-135 (methyl iodide)	$1{,}3.10^5$	$1{,}5.10^5$	$2{,}9.10^5$	$6{,}3.10^5$	$9{,}1.10^5$	$1{,}5.10^6$	2	$7{,}9.10^1$
Cs-125	$4{,}8.10^6$	$7{,}1.10^6$	$1{,}5.10^7$	$2{,}3.10^7$	$3{,}6.10^7$	$4{,}3.10^7$	2	$3{,}8.10^3$
Cs-127	$3{,}3.10^6$	$4{,}3.10^6$	$8{,}3.10^6$	$1{,}3.10^7$	$2{,}1.10^7$	$2{,}6.10^7$	2	$2{,}3.10^3$
Cs-129	$1{,}6.10^6$	$2{,}0.10^6$	$4{,}0.10^6$	$6{,}3.10^6$	$1{,}0.10^7$	$1{,}3.10^7$	2	$1{,}1.10^3$
Cs-130	$7{,}1.10^6$	$1{,}1.10^7$	$2{,}4.10^7$	$3{,}8.10^7$	$5{,}9.10^7$	$7{,}1.10^7$	2	$5{,}8.10^3$
Cs-131	$2{,}6.10^6$	$3{,}6.10^6$	$7{,}1.10^6$	$1{,}1.10^7$	$1{,}7.10^7$	$2{,}1.10^7$	2	$1{,}9.10^3$
Cs-132	$5{,}0.10^5$	$6{,}3.10^5$	$1{,}1.10^6$	$1{,}8.10^6$	$2{,}6.10^6$	$3{,}3.10^6$	4	$3{,}2.10^2$
Cs-134	$1{,}4.10^4$	$1{,}6.10^4$	$2{,}4.10^4$	$3{,}6.10^4$	$4{,}3.10^4$	$1{,}1.10^5$	5	$6{,}0.10^0$
Cs-134m	$2{,}8.10^6$	$4{,}0.10^6$	$7{,}7.10^6$	$1{,}1.10^7$	$1{,}4.10^7$	$1{,}7.10^7$	5	$1{,}9.10^3$
Cs-135	$3{,}7.10^4$	$4{,}2.10^4$	$6{,}3.10^4$	$9{,}1.10^4$	$1{,}1.10^5$	$1{,}2.10^5$	6	$1{,}4.10^1$
Cs-135m	$8{,}3.10^6$	$1{,}0.10^7$	$1{,}9.10^7$	$3{,}0.10^7$	$5{,}0.10^7$	$6{,}3.10^7$	2	$5{,}3.10^3$
Cs-136	$6{,}7.10^4$	$9{,}1.10^4$	$1{,}7.10^5$	$2{,}4.10^5$	$2{,}9.10^5$	$3{,}6.10^5$	5	$3{,}9.10^1$
Cs-137	$9{,}1.10^3$	$1{,}0.10^4$	$1{,}4.10^4$	$2{,}1.10^4$	$2{,}4.10^4$	$2{,}6.10^4$	6	$3{,}2.10^0$
Cs-138	$2{,}4.10^6$	$3{,}6.10^6$	$7{,}7.10^6$	$1{,}2.10^7$	$2{,}0.10^7$	$2{,}3.10^7$	2	$1{,}9.10^3$
Ba-126	$9{,}1.10^5$	$1{,}4.10^6$	$3{,}0.10^6$	$4{,}8.10^6$	$7{,}7.10^6$	$9{,}1.10^6$	2	$7{,}3.10^2$
Ba-128	$8{,}3.10^4$	$1{,}2.10^5$	$2{,}5.10^5$	$3{,}8.10^5$	$6{,}3.10^5$	$7{,}1.10^5$	2	$6{,}3.10^1$
Ba-131	$2{,}5.10^5$	$3{,}2.10^5$	$5{,}6.10^5$	$7{,}7.10^5$	$9{,}1.10^5$	$1{,}1.10^6$	5	$1{,}2.10^2$
Ba-131m	$2{,}0.10^7$	$2{,}9.10^7$	$5{,}6.10^7$	$8{,}3.10^7$	$1{,}1.10^8$	$1{,}3.10^8$	5	$1{,}4.10^4$
Ba-133	$3{,}1.10^4$	$3{,}4.10^4$	$5{,}0.10^4$	$7{,}7.10^4$	$9{,}1.10^4$	$1{,}0.10^5$	6	$1{,}2.10^1$
Ba-133m	$3{,}2.10^5$	$4{,}2.10^5$	$9{,}1.10^5$	$1{,}3.10^6$	$1{,}7.10^6$	$2{,}2.10^6$	2	$2{,}2.10^2$
Ba-135m	$3{,}7.10^5$	$5{,}3.10^5$	$1{,}1.10^6$	$1{,}7.10^6$	$2{,}2.10^6$	$2{,}8.10^6$	2	$2{,}8.10^2$
Ba-139	$1{,}8.10^6$	$2{,}8.10^6$	$6{,}3.10^6$	$9{,}1.10^6$	$1{,}4.10^7$	$1{,}7.10^7$	2	$1{,}5.10^3$
Ba-140	$3{,}4.10^4$	$4{,}5.10^4$	$8{,}3.10^4$	$1{,}2.10^5$	$1{,}4.10^5$	$1{,}7.10^5$	5	$1{,}9.10^1$
Ba-141	$3{,}1.10^6$	$4{,}8.10^6$	$1{,}0.10^7$	$1{,}6.10^7$	$2{,}5.10^7$	$2{,}9.10^7$	2	$2{,}5.10^3$
Ba-142	$5{,}3.10^6$	$7{,}7.10^6$	$1{,}6.10^7$	$2{,}5.10^7$	$3{,}8.10^7$	$4{,}5.10^7$	2	$4{,}0.10^3$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
La-131	$5,6.10^6$	$7,7.10^6$	$1,6.10^7$	$2,4.10^7$	$3,6.10^7$	$4,3.10^7$	2	$4,0.10^3$
La-132	$6,7.10^5$	$9,1.10^5$	$1,9.10^6$	$2,9.10^6$	$5,0.10^6$	$6,3.10^6$	2	$4,8.10^2$
La-135	$7,7.10^6$	$1,0.10^7$	$2,0.10^7$	$3,3.10^7$	$5,9.10^7$	$7,1.10^7$	2	$5,3.10^3$
La-137	$4,0.10^4$	$4,3.10^4$	$6,7.10^4$	$9,1.10^4$	$1,1.10^5$	$1,1.10^5$	6	$1,4.10^1$
La-138	$2,7.10^3$	$2,9.10^3$	$4,2.10^3$	$5,6.10^3$	$6,3.10^3$	$6,7.10^3$	6	$8,2.10^{-1}$
La-140	$1,1.10^5$	$1,6.10^5$	$3,2.10^5$	$5,0.10^5$	$7,7.10^5$	$9,1.10^5$	2	$8,4.10^1$
La-141	$7,1.10^5$	$1,1.10^6$	$2,3.10^6$	$3,6.10^6$	$5,6.10^6$	$6,7.10^6$	2	$5,7.10^2$
La-142	$1,2.10^6$	$1,8.10^6$	$3,7.10^6$	$5,9.10^6$	$9,1.10^6$	$1,1.10^7$	2	$9,2.10^2$
La-143	$4,8.10^6$	$7,7.10^6$	$1,7.10^7$	$2,6.10^7$	$4,0.10^7$	$4,8.10^7$	2	$4,0.10^3$
Ce-134	$8,3.10^4$	$1,3.10^5$	$2,6.10^5$	$4,0.10^5$	$6,3.10^5$	$7,7.10^5$	2	$6,6.10^1$
Ce-135	$2,7.10^5$	$3,6.10^5$	$7,1.10^5$	$1,1.10^6$	$1,6.10^6$	$2,0.10^6$	2	$1,9.10^2$
Ce-137	$9,1.10^6$	$1,3.10^7$	$2,7.10^7$	$4,3.10^7$	$7,7.10^7$	$1,0.10^8$	2	$6,7.10^3$
Ce-137m	$3,0.10^5$	$4,3.10^5$	$9,1.10^5$	$1,4.10^6$	$1,8.10^6$	$2,3.10^6$	2	$2,3.10^2$
Ce-139	$9,1.10^4$	$1,2.10^5$	$2,2.10^5$	$3,6.10^5$	$4,2.10^5$	$5,3.10^5$	5	$5,7.10^1$
Ce-141	$6,3.10^4$	$8,3.10^4$	$1,4.10^5$	$1,9.10^5$	$2,1.10^5$	$2,6.10^5$	5	$2,9.10^1$
Ce-143	$1,7.10^5$	$2,4.10^5$	$4,8.10^5$	$7,1.10^5$	$1,0.10^6$	$1,2.10^6$	4	$1,3.10^2$
Ce-144	$2,8.10^3$	$3,7.10^3$	$7,1.10^3$	$1,3.10^4$	$1,7.10^4$	$1,9.10^4$	2	$1,9.10^0$
Pr-136	$7,7.10^6$	$1,1.10^7$	$2,3.10^7$	$3,7.10^7$	$5,9.10^7$	$7,1.10^7$	2	$5,8.10^3$
Pr-137	$5,3.10^6$	$7,7.10^6$	$1,6.10^7$	$2,5.10^7$	$4,0.10^7$	$4,8.10^7$	2	$4,0.10^3$
Pr-138m	$1,7.10^6$	$2,1.10^6$	$4,2.10^6$	$6,7.10^6$	$1,1.10^7$	$1,4.10^7$	2	$1,1.10^3$
Pr-139	$6,3.10^6$	$8,3.10^6$	$1,8.10^7$	$2,7.10^7$	$4,2.10^7$	$5,0.10^7$	2	$4,4.10^3$
Pr-142	$1,8.10^5$	$2,7.10^5$	$5,9.10^5$	$9,1.10^5$	$1,5.10^6$	$1,8.10^6$	2	$1,4.10^2$
Pr-142m	$1,4.10^7$	$2,1.10^7$	$4,5.10^7$	$7,1.10^7$	$1,2.10^8$	$1,4.10^8$	2	$1,1.10^4$
Pr-143	$7,7.10^4$	$1,1.10^5$	$2,0.10^5$	$2,8.10^5$	$3,3.10^5$	$4,2.10^5$	5	$4,6.10^1$
Pr-144	$5,3.10^6$	$8,3.10^6$	$1,9.10^7$	$2,9.10^7$	$4,8.10^7$	$5,6.10^7$	2	$4,4.10^3$
Pr-145	$6,3.10^5$	$9,1.10^5$	$2,0.10^6$	$3,1.10^6$	$5,0.10^6$	$5,9.10^6$	2	$4,8.10^2$
Pr-147	$6,3.10^6$	$9,1.10^6$	$2,0.10^7$	$3,0.10^7$	$4,5.10^7$	$5,6.10^7$	2	$4,8.10^3$
Nd-136	$2,1.10^6$	$3,0.10^6$	$6,3.10^6$	$1,0.10^7$	$1,5.10^7$	$1,9.10^7$	2	$1,6.10^3$
Nd-138	$4,2.10^5$	$5,6.10^5$	$1,3.10^6$	$2,0.10^6$	$3,3.10^6$	$4,0.10^6$	2	$2,9.10^2$
Nd-139	$1,1.10^7$	$1,6.10^7$	$3,2.10^7$	$5,0.10^7$	$7,7.10^7$	$1,0.10^8$	2	$8,2.10^3$
Nd-139m	$8,3.10^5$	$1,1.10^6$	$2,2.10^6$	$3,3.10^6$	$5,3.10^6$	$6,7.10^6$	2	$5,8.10^2$
Nd-141	$2,3.10^7$	$3,1.10^7$	$6,3.10^7$	$1,0.10^8$	$1,6.10^8$	$2,0.10^8$	2	$1,6.10^4$
Nd-147	$8,3.10^4$	$1,2.10^5$	$2,0.10^5$	$2,9.10^5$	$3,3.10^5$	$4,2.10^5$	5	$4,6.10^1$
Nd-149	$1,4.10^6$	$2,1.10^6$	$4,3.10^6$	$6,7.10^6$	$9,1.10^6$	$1,1.10^7$	2	$1,1.10^3$
Nd-151	$6,7.10^6$	$1,0.10^7$	$2,1.10^7$	$3,2.10^7$	$4,8.10^7$	$5,9.10^7$	2	$5,3.10^3$
Pm-141	$6,7.10^6$	$1,0.10^7$	$2,3.10^7$	$3,6.10^7$	$5,6.10^7$	$6,7.10^7$	2	$5,4.10^3$
Pm-143	$1,6.10^5$	$1,9.10^5$	$3,0.10^5$	$4,5.10^5$	$5,9.10^5$	$6,7.10^5$	5	$8,1.10^1$
Pm-144	$3,2.10^4$	$3,6.10^4$	$5,6.10^4$	$8,3.10^4$	$1,1.10^5$	$1,2.10^5$	5	$1,5.10^1$
Pm-145	$9,1.10^4$	$1,0.10^5$	$1,6.10^5$	$2,3.10^5$	$2,7.10^5$	$2,8.10^5$	6	$3,4.10^1$
Pm-146	$1,6.10^4$	$1,7.10^4$	$2,6.10^4$	$3,8.10^4$	$4,5.10^4$	$4,8.10^4$	6	$5,9.10^0$
Pm-147	$4,8.10^4$	$5,6.10^4$	$9,1.10^4$	$1,4.10^5$	$1,7.10^5$	$2,0.10^5$	5	$2,4.10^1$
Pm-148	$6,7.10^4$	$9,1.10^4$	$1,8.10^5$	$2,7.10^5$	$3,8.10^5$	$4,5.10^5$	2	$4,8.10^1$
Pm-148m	$4,0.10^4$	$5,0.10^4$	$8,3.10^4$	$1,2.10^5$	$1,4.10^5$	$1,8.10^5$	5	$1,9.10^1$
Pm-149	$1,9.10^5$	$2,8.10^5$	$5,6.10^5$	$8,3.10^5$	$1,1.10^6$	$1,4.10^6$	2	$1,5.10^2$
Pm-150	$8,3.10^5$	$1,2.10^6$	$2,6.10^6$	$4,0.10^6$	$6,3.10^6$	$7,7.10^6$	2	$6,4.10^2$
Pm-151	$2,9.10^5$	$3,8.10^5$	$7,7.10^5$	$1,2.10^6$	$1,8.10^6$	$2,2.10^6$	2	$2,0.10^2$
Sm-141	$6,7.10^6$	$1,0.10^7$	$2,1.10^7$	$3,4.10^7$	$5,6.10^7$	$6,7.10^7$	2	$5,3.10^3$
Sm-141m	$3,3.10^6$	$4,8.10^6$	$1,0.10^7$	$1,6.10^7$	$2,6.10^7$	$3,1.10^7$	2	$2,5.10^3$
Sm-142	$1,3.10^6$	$2,1.10^6$	$4,5.10^6$	$7,1.10^6$	$1,2.10^7$	$1,4.10^7$	2	$1,1.10^3$
Sm-145	$1,2.10^5$	$1,5.10^5$	$2,5.10^5$	$4,0.10^5$	$5,3.10^5$	$6,3.10^5$	4	$7,1.10^1$
Sm-146	$3,7.10^1$	$3,8.10^1$	$5,9.10^1$	$8,3.10^1$	$9,1.10^1$	$9,1.10^1$	6	$1,1.10^{-2}$
Sm-147	$4,0.10^1$	$4,3.10^1$	$6,3.10^1$	$9,1.10^1$	$1,0.10^2$	$1,0.10^2$	6	$1,3.10^{-2}$
Sm-151	$9,1.10^4$	$1,0.10^5$	$1,5.10^5$	$2,2.10^5$	$2,5.10^5$	$2,5.10^5$	6	$3,1.10^1$
Sm-153	$2,4.10^5$	$3,4.10^5$	$6,7.10^5$	$1,0.10^6$	$1,3.10^6$	$1,6.10^6$	5	$1,7.10^2$
Sm-155	$6,7.10^6$	$1,0.10^7$	$2,3.10^7$	$3,4.10^7$	$5,0.10^7$	$5,9.10^7$	2	$5,3.10^3$
Sm-156	$6,3.10^5$	$9,1.10^5$	$1,7.10^6$	$2,9.10^6$	$3,7.10^6$	$4,5.10^6$	2	$4,8.10^2$
Eu-145	$2,8.10^5$	$3,4.10^5$	$6,3.10^5$	$1,0.10^6$	$1,5.10^6$	$1,8.10^6$	4	$1,8.10^2$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Eu-146	$1,8.10^5$	$2,3.10^5$	$4,2.10^5$	$6,7.10^5$	$1,0.10^6$	$1,3.10^6$	4	$1,2.10^2$
Eu-147	$2,0.10^5$	$2,7.10^5$	$4,5.10^5$	$6,3.10^5$	$7,7.10^5$	$9,1.10^5$	5	$1,1.10^2$
Eu-148	$7,1.10^4$	$8,3.10^4$	$1,5.10^5$	$2,2.10^5$	$3,1.10^5$	$3,8.10^5$	4	$3,9.10^1$
Eu-149	$6,3.10^5$	$7,7.10^5$	$1,4.10^6$	$2,1.10^6$	$2,9.10^6$	$3,4.10^6$	4	$3,8.10^2$
Eu-150	$9,1.10^3$	$9,1.10^3$	$1,3.10^4$	$1,8.10^4$	$1,9.10^4$	$1,9.10^4$	6	$2,3.10^0$
Eu-150m	$6,3.10^5$	$9,1.10^5$	$1,9.10^6$	$2,9.10^6$	$4,3.10^6$	$5,3.10^6$	2	$4,8.10^2$
Eu-152	$9,1.10^3$	$1,0.10^4$	$1,4.10^4$	$2,0.10^4$	$2,3.10^4$	$2,4.10^4$	6	$2,9.10^0$
Eu-152m	$5,3.10^5$	$7,7.10^5$	$1,5.10^6$	$2,4.10^6$	$4,2.10^6$	$4,5.10^6$	2	$4,0.10^2$
Eu-154	$6,3.10^3$	$6,7.10^3$	$1,0.10^4$	$1,5.10^4$	$1,8.10^4$	$1,9.10^4$	6	$2,3.10^0$
Eu-155	$3,8.10^4$	$4,3.10^4$	$7,1.10^4$	$1,1.10^5$	$1,3.10^5$	$1,4.10^5$	6	$1,8.10^1$
Eu-156	$5,3.10^4$	$7,1.10^4$	$1,3.10^5$	$1,9.10^5$	$2,4.10^5$	$2,9.10^5$	5	$3,3.10^1$
Eu-157	$4,0.10^5$	$5,3.10^5$	$1,1.10^6$	$1,7.10^6$	$2,9.10^6$	$3,6.10^6$	2	$2,8.10^2$
Eu-158	$2,3.10^6$	$3,4.10^6$	$7,7.10^6$	$1,2.10^7$	$1,8.10^7$	$2,1.10^7$	2	$1,8.10^3$
Gd-145	$5,6.10^6$	$7,7.10^6$	$1,6.10^7$	$2,6.10^7$	$4,2.10^7$	$5,0.10^7$	2	$4,0.10^3$
Gd-146	$3,4.10^4$	$4,3.10^4$	$7,7.10^4$	$1,1.10^5$	$1,3.10^5$	$1,6.10^5$	5	$1,7.10^1$
Gd-147	$3,6.10^5$	$4,5.10^5$	$9,1.10^5$	$1,3.10^6$	$2,0.10^6$	$2,5.10^6$	4	$2,4.10^2$
Gd-148	$1,2.10^1$	$1,3.10^1$	$2,1.10^1$	$3,1.10^1$	$3,8.10^1$	$3,8.10^1$	6	$4,7.10^{-3}$
Gd-149	$2,8.10^5$	$3,3.10^5$	$6,7.10^5$	$9,1.10^5$	$1,1.10^6$	$1,4.10^6$	5	$1,5.10^2$
Gd-151	$1,6.10^5$	$2,0.10^5$	$4,0.10^5$	$6,7.10^5$	$1,0.10^6$	$1,2.10^6$	2	$1,1.10^2$
Gd-152	$1,7.10^1$	$1,9.10^1$	$2,9.10^1$	$4,2.10^1$	$5,3.10^1$	$5,3.10^1$	6	$6,5.10^{-3}$
Gd-153	$6,7.10^4$	$8,3.10^4$	$1,5.10^5$	$2,6.10^5$	$4,0.10^5$	$4,8.10^5$	2	$4,4.10^1$
Gd-159	$4,5.10^5$	$6,7.10^5$	$1,4.10^6$	$2,0.10^6$	$2,9.10^6$	$3,7.10^6$	2	$3,5.10^2$
Tb-147	$1,5.10^6$	$2,1.10^6$	$4,3.10^6$	$6,7.10^6$	$1,1.10^7$	$1,3.10^7$	2	$1,1.10^3$
Tb-149	$4,8.10^4$	$6,7.10^4$	$1,0.10^5$	$1,5.10^5$	$1,7.10^5$	$2,0.10^5$	5	$2,4.10^1$
Tb-150	$1,0.10^6$	$1,4.10^6$	$2,9.10^6$	$4,5.10^6$	$7,7.10^6$	$9,1.10^6$	2	$7,1.10^2$
Tb-151	$6,3.10^5$	$8,3.10^5$	$1,6.10^6$	$2,4.10^6$	$3,6.10^6$	$4,3.10^6$	4	$4,3.10^2$
Tb-153	$7,1.10^5$	$1,0.10^6$	$1,9.10^6$	$2,8.10^6$	$4,3.10^6$	$5,3.10^6$	4	$5,0.10^2$
Tb-154	$3,7.10^5$	$4,8.10^5$	$9,1.10^5$	$1,4.10^6$	$2,2.10^6$	$2,8.10^6$	2	$2,5.10^2$
Tb-155	$7,1.10^5$	$1,0.10^6$	$1,8.10^6$	$2,9.10^6$	$3,7.10^6$	$4,5.10^6$	5	$5,1.10^2$
Tb-156	$1,4.10^5$	$1,9.10^5$	$3,3.10^5$	$5,0.10^5$	$6,7.10^5$	$8,3.10^5$	4	$8,9.10^1$
Tb-156m l	$9,1.10^5$	$1,1.10^6$	$2,1.10^6$	$3,0.10^6$	$3,7.10^6$	$4,8.10^6$	5	$5,1.10^2$
Tb-156m s	$1,6.10^6$	$2,2.10^6$	$4,2.10^6$	$5,9.10^6$	$8,3.10^6$	$1,0.10^7$	4	$1,1.10^3$
Tb-157	$3,1.10^5$	$3,3.10^5$	$5,0.10^5$	$7,1.10^5$	$8,3.10^5$	$8,3.10^5$	6	$1,0.10^2$
Tb-158	$9,1.10^3$	$1,0.10^4$	$1,4.10^4$	$2,0.10^4$	$2,1.10^4$	$2,2.10^4$	6	$2,7.10^0$
Tb-160	$3,1.10^4$	$4,0.10^4$	$6,7.10^4$	$1,0.10^5$	$1,2.10^5$	$1,4.10^5$	5	$1,6.10^1$
Tb-161	$1,5.10^5$	$2,1.10^5$	$3,8.10^5$	$5,3.10^5$	$6,3.10^5$	$7,7.10^5$	5	$8,6.10^1$
Dy-155	$1,8.10^6$	$2,3.10^6$	$4,3.10^6$	$6,7.10^6$	$1,0.10^7$	$1,3.10^7$	4	$1,2.10^3$
Dy-157	$4,2.10^6$	$5,3.10^6$	$1,0.10^7$	$1,6.10^7$	$2,6.10^7$	$3,3.10^7$	2	$2,8.10^3$
Dy-159	$4,8.10^5$	$5,9.10^5$	$1,0.10^6$	$1,7.10^6$	$2,3.10^6$	$2,7.10^6$	4	$3,0.10^2$
Dy-165	$1,9.10^6$	$2,9.10^6$	$6,3.10^6$	$9,1.10^6$	$1,4.10^7$	$1,7.10^7$	2	$1,5.10^3$
Dy-166	$8,3.10^4$	$1,2.10^5$	$2,3.10^5$	$3,3.10^5$	$4,3.10^5$	$5,3.10^5$	4	$6,0.10^1$
Ho-155	$5,9.10^6$	$8,3.10^6$	$1,7.10^7$	$2,7.10^7$	$4,2.10^7$	$5,0.10^7$	2	$4,4.10^3$
Ho-157	$2,9.10^7$	$4,0.10^7$	$7,7.10^7$	$1,3.10^8$	$2,0.10^8$	$2,4.10^8$	2	$2,1.10^4$
Ho-159	$2,2.10^7$	$3,0.10^7$	$5,9.10^7$	$9,1.10^7$	$1,3.10^8$	$1,6.10^8$	2	$1,6.10^4$
Ho-161	$1,8.10^7$	$2,5.10^7$	$5,0.10^7$	$8,3.10^7$	$1,3.10^8$	$1,7.10^8$	2	$1,3.10^4$
Ho-162	$4,8.10^7$	$6,7.10^7$	$1,4.10^8$	$2,1.10^8$	$2,9.10^8$	$3,6.10^8$	2	$3,5.10^4$
Ho-162m	$6,7.10^6$	$9,1.10^6$	$1,7.10^7$	$2,6.10^7$	$3,8.10^7$	$4,8.10^7$	4	$4,7.10^3$
Ho-164	$1,5.10^7$	$2,2.10^7$	$4,8.10^7$	$7,1.10^7$	$1,0.10^8$	$1,2.10^8$	2	$1,2.10^4$
Ho-164m	$1,1.10^7$	$1,7.10^7$	$3,3.10^7$	$5,0.10^7$	$7,7.10^7$	$8,3.10^7$	2	$8,9.10^3$
Ho-166	$1,7.10^5$	$2,5.10^5$	$5,3.10^5$	$8,3.10^5$	$1,3.10^6$	$1,5.10^6$	2	$1,3.10^2$
Ho-166m	$3,8.10^3$	$4,0.10^3$	$5,6.10^3$	$7,7.10^3$	$8,3.10^3$	$8,3.10^3$	6	$1,0.10^0$
Ho-167	$1,9.10^6$	$2,8.10^6$	$5,6.10^6$	$8,3.10^6$	$1,1.10^7$	$1,4.10^7$	2	$1,5.10^3$
Er-161	$2,6.10^6$	$3,4.10^6$	$6,7.10^6$	$1,1.10^7$	$1,7.10^7$	$2,1.10^7$	2	$1,8.10^3$
Er-165	$1,4.10^7$	$1,9.10^7$	$3,8.10^7$	$6,3.10^7$	$1,0.10^8$	$1,3.10^8$	2	$9,9.10^3$
Er-169	$2,1.10^5$	$2,9.10^5$	$5,0.10^5$	$6,7.10^5$	$7,7.10^5$	$1,0.10^6$	5	$1,1.10^2$
Er-171	$5,6.10^5$	$8,3.10^5$	$1,7.10^6$	$2,6.10^6$	$3,7.10^6$	$4,5.10^6$	2	$4,4.10^2$
Er-172	$1,5.10^5$	$2,1.10^5$	$4,0.10^5$	$5,9.10^5$	$7,1.10^5$	$9,1.10^5$	5	$9,8.10^1$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Tm-162	$7{,}7.10^{6}$	$1{,}0.10^{7}$	$2{,}1.10^{7}$	$3{,}3.10^{7}$	$5{,}3.10^{7}$	$6{,}3.10^{7}$	2	$5{,}5.10^{3}$
Tm-166	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$4{,}5.10^{6}$	$5{,}9.10^{6}$	2	$5{,}3.10^{2}$
Tm-167	$1{,}8.10^{5}$	$2{,}4.10^{5}$	$4{,}3.10^{5}$	$5{,}9.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	5	$9{,}8.10^{1}$
Tm-170	$2{,}8.10^{4}$	$3{,}6.10^{4}$	$6{,}3.10^{4}$	$9{,}1.10^{4}$	$1{,}2.10^{5}$	$1{,}4.10^{5}$	5	$1{,}6.10^{1}$
Tm-171	$1{,}5.10^{5}$	$1{,}8.10^{5}$	$2{,}9.10^{5}$	$5{,}0.10^{5}$	$6{,}3.10^{5}$	$7{,}1.10^{5}$	5	$8{,}6.10^{1}$
Tm-172	$1{,}2.10^{5}$	$1{,}7.10^{5}$	$3{,}4.10^{5}$	$5{,}3.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$9{,}1.10^{1}$
Tm-173	$6{,}7.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$3{,}0.10^{6}$	$4{,}5.10^{6}$	$5{,}6.10^{6}$	2	$5{,}3.10^{2}$
Tm-175	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$2{,}0.10^{7}$	$3{,}0.10^{7}$	$4{,}5.10^{7}$	$5{,}6.10^{7}$	2	$4{,}8.10^{3}$
Yb-162	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$2{,}5.10^{7}$	$3{,}8.10^{7}$	$5{,}9.10^{7}$	$7{,}1.10^{7}$	2	$6{,}4.10^{3}$
Yb-166	$2{,}0.10^{5}$	$2{,}7.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	4	$1{,}4.10^{2}$
Yb-167	$2{,}2.10^{7}$	$3{,}1.10^{7}$	$5{,}9.10^{7}$	$9{,}1.10^{7}$	$1{,}2.10^{8}$	$1{,}4.10^{8}$	4	$1{,}6.10^{4}$
Yb-169	$7{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$2{,}4.10^{5}$	$2{,}7.10^{5}$	$3{,}3.10^{5}$	5	$3{,}7.10^{1}$
Yb-175	$2{,}7.10^{5}$	$3{,}7.10^{5}$	$6{,}7.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	5	$1{,}5.10^{2}$
Yb-177	$1{,}9.10^{6}$	$2{,}9.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}4.10^{7}$	4	$1{,}5.10^{3}$
Yb-1778	$1{,}6.10^{6}$	$2{,}4.10^{6}$	$5{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}3.10^{7}$	2	$1{,}3.10^{3}$
Lu-169	$4{,}2.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}1.10^{6}$	$2{,}6.10^{6}$	4	$2{,}7.10^{2}$
Lu-170	$2{,}2.10^{5}$	$2{,}9.10^{5}$	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	4	$1{,}5.10^{2}$
Lu-171	$2{,}0.10^{5}$	$2{,}6.10^{5}$	$4{,}8.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	5	$1{,}2.10^{2}$
Lu-172	$1{,}1.10^{5}$	$1{,}4.10^{5}$	$2{,}5.10^{5}$	$3{,}6.10^{5}$	$5{,}0.10^{5}$	$6{,}3.10^{5}$	4	$6{,}4.10^{1}$
Lu-173	$1{,}0.10^{5}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$2{,}8.10^{5}$	$3{,}4.10^{5}$	$4{,}2.10^{5}$	5	$4{,}7.10^{1}$
Lu-174	$5{,}9.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}7.10^{5}$	$2{,}0.10^{5}$	$2{,}4.10^{5}$	5	$2{,}8.10^{1}$
Lu-174m	$5{,}0.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}0.10^{5}$	$2{,}4.10^{5}$	5	$2{,}7.10^{1}$
Lu-176	$5{,}6.10^{3}$	$5{,}9.10^{3}$	$9{,}1.10^{3}$	$1{,}3.10^{4}$	$1{,}4.10^{4}$	$1{,}4.10^{4}$	6	$1{,}8.10^{0}$
Lu-176m	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$3{,}3.10^{6}$	$5{,}0.10^{6}$	$8{,}3.10^{6}$	$8{,}3.10^{6}$	2	$8{,}5.10^{2}$
Lu-177	$1{,}8.10^{5}$	$2{,}4.10^{5}$	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	5	$9{,}1.10^{1}$
Lu-177m	$1{,}5.10^{5}$	$1{,}9.10^{4}$	$3{,}1.10^{4}$	$4{,}3.10^{4}$	$5{,}0.10^{4}$	$6{,}3.10^{4}$	5	$6{,}8.10^{0}$
Lu-178	$4{,}2.10^{6}$	$6{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}2.10^{7}$	$3{,}3.10^{7}$	$3{,}8.10^{7}$	2	$3{,}5.10^{3}$
Lu-178m	$3{,}7.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}5.10^{7}$	$3{,}0.10^{7}$	2	$2{,}8.10^{3}$
Lu-179	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$3{,}1.10^{6}$	$4{,}8.10^{6}$	$7{,}7.10^{6}$	$8{,}3.10^{6}$	2	$7{,}7.10^{2}$
Hf-170	$4{,}5.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}6.10^{6}$	$3{,}1.10^{6}$	4	$3{,}1.10^{2}$
Hf-172	$6{,}7.10^{3}$	$7{,}7.10^{3}$	$1{,}3.10^{4}$	$2{,}0.10^{4}$	$2{,}9.10^{4}$	$3{,}1.10^{4}$	4	$3{,}6.10^{0}$
Hf-173	$9{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}3.10^{6}$	$3{,}4.10^{6}$	$5{,}0.10^{6}$	$6{,}3.10^{6}$	4	$6{,}2.10^{2}$
Hf-175	$1{,}7.10^{5}$	$2{,}2.10^{5}$	$3{,}8.10^{5}$	$5{,}6.10^{5}$	$7{,}1.10^{5}$	$8{,}3.10^{5}$	5	$9{,}8.10^{1}$
Hf-177m	$1{,}5.10^{6}$	$2{,}1.10^{6}$	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$1{,}1.10^{3}$
Hf-178m	$1{,}6.10^{3}$	$1{,}7.10^{3}$	$2{,}5.10^{3}$	$3{,}2.10^{3}$	$3{,}7.10^{3}$	$3{,}8.10^{3}$	6	$4{,}7.10^{-1}$
Hf-179m	$5{,}9.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$1{,}8.10^{5}$	$2{,}1.10^{5}$	$2{,}6.10^{5}$	5	$2{,}9.10^{1}$
Hf-180m	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$2{,}8.10^{6}$	$4{,}2.10^{6}$	$5{,}9.10^{6}$	$7{,}7.10^{6}$	4	$7{,}4.10^{2}$
Hf-181	$4{,}5.10^{4}$	$5{,}9.10^{4}$	$1{,}0.10^{5}$	$1{,}4.10^{5}$	$1{,}6.10^{5}$	$2{,}0.10^{5}$	5	$2{,}2.10^{1}$
Hf-182	$1{,}5.10^{3}$	$1{,}6.10^{3}$	$2{,}3.10^{3}$	$2{,}8.10^{3}$	$3{,}2.10^{3}$	$3{,}2.10^{3}$	6	$4{,}0.10^{-1}$
Hf-182m	$3{,}1.10^{6}$	$4{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}8.10^{7}$	$2{,}2.10^{7}$	2	$2{,}3.10^{3}$
Hf-183	$2{,}3.10^{6}$	$3{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}8.10^{3}$
Hf-184	$3{,}8.10^{5}$	$5{,}6.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}5.10^{6}$	$3{,}0.10^{6}$	2	$2{,}9.10^{2}$
Ta-172	$3{,}4.10^{6}$	$5{,}0.10^{6}$	$1{,}0.10^{7}$	$1{,}6.10^{7}$	$2{,}4.10^{7}$	$2{,}9.10^{7}$	2	$2{,}6.10^{3}$
Ta-173	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$3{,}1.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$8{,}1.10^{2}$
Ta-174	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}3.10^{7}$	2	$2{,}3.10^{3}$
Ta-175	$1{,}1.10^{6}$	$1{,}4.10^{6}$	$2{,}6.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$7{,}7.10^{6}$	4	$7{,}1.10^{2}$
Ta-176	$7{,}1.10^{5}$	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$2{,}6.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	4	$4{,}7.10^{2}$
Ta-177	$1{,}4.10^{6}$	$2{,}0.10^{6}$	$3{,}7.10^{6}$	$5{,}9.10^{6}$	$7{,}7.10^{6}$	$9{,}1.10^{6}$	4	$1{,}1.10^{3}$
Ta-178	$2{,}2.10^{6}$	$2{,}9.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	4	$1{,}5.10^{3}$
Ta-179	$4{,}2.10^{5}$	$4{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}6.10^{6}$	$1{,}8.10^{6}$	5	$2{,}1.10^{2}$
Ta-180	$1{,}4.10^{4}$	$1{,}5.10^{4}$	$2{,}2.10^{4}$	$3{,}2.10^{4}$	$3{,}6.10^{4}$	$3{,}8.10^{4}$	6	$4{,}7.10^{0}$
Ta-180m	$3{,}0.10^{6}$	$4{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}3.10^{7}$	4	$2{,}3.10^{3}$
Ta-182	$2{,}4.10^{4}$	$2{,}9.10^{4}$	$4{,}8.10^{4}$	$6{,}7.10^{4}$	$7{,}7.10^{4}$	$1{,}0.10^{5}$	5	$1{,}1.10^{1}$
Ta-182m	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}9.10^{7}$	$2{,}8.10^{7}$	$4{,}0.10^{7}$	$4{,}8.10^{7}$	2	$4{,}8.10^{3}$
Ta-183	$9{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}2.10^{5}$	$3{,}1.10^{5}$	$3{,}7.10^{5}$	$4{,}8.10^{5}$	5	$5{,}1.10^{1}$
Ta-184	$2{,}9.10^{5}$	$4{,}2.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$2{,}2.10^{2}$
Ta-185	$2{,}5.10^{6}$	$3{,}8.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}8.10^{7}$	$2{,}1.10^{7}$	2	$2{,}0.10^{3}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Ta-186	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$2{,}0.10^{7}$	$3{,}1.10^{7}$	$4{,}8.10^{7}$	$5{,}6.10^{7}$	2	$4{,}8.10^{3}$
W-176	$3{,}0.10^{6}$	$3{,}7.10^{6}$	$7{,}1.10^{6}$	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$2{,}4.10^{7}$	2	$1{,}9.10^{3}$
W-177	$5{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$3{,}3.10^{7}$	$4{,}2.10^{7}$	2	$3{,}3.10^{3}$
W-178	$1{,}4.10^{6}$	$1{,}9.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$9{,}7.10^{2}$
W-179	$1{,}1.10^{8}$	$1{,}5.10^{8}$	$3{,}0.10^{8}$	$5{,}0.10^{8}$	$8{,}3.10^{8}$	$1{,}1.10^{9}$	2	$7{,}7.10^{4}$
W-181	$4{,}0.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}8.10^{7}$	$3{,}1.10^{7}$	$3{,}7.10^{7}$	2	$2{,}8.10^{3}$
W-185	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$2{,}3.10^{6}$	$3{,}7.10^{6}$	$7{,}1.10^{6}$	$8{,}3.10^{6}$	2	$5{,}3.10^{2}$
W-187	$5{,}0.10^{5}$	$6{,}7.10^{5}$	$1{,}4.10^{6}$	$2{,}3.10^{6}$	$4{,}3.10^{6}$	$5{,}3.10^{6}$	2	$3{,}5.10^{2}$
W-188	$1{,}4.10^{5}$	$2{,}0.10^{5}$	$4{,}5.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$1{,}8.10^{6}$	2	$1{,}1.10^{2}$
Re-177	$9{,}1.10^{6}$	$1{,}3.10^{7}$	$2{,}6.10^{7}$	$4{,}0.10^{7}$	$5{,}9.10^{7}$	$7{,}1.10^{7}$	2	$6{,}7.10^{3}$
Re-178	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$2{,}6.10^{7}$	$3{,}8.10^{7}$	$5{,}9.10^{7}$	$7{,}1.10^{7}$	2	$6{,}2.10^{3}$
Re-181	$4{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$3{,}2.10^{6}$	$4{,}0.10^{6}$	2	$3{,}5.10^{2}$
Re-182	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}9.10^{5}$	$4{,}5.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	4	$8{,}1.10^{1}$
Re-182m	$7{,}1.10^{5}$	$9{,}1.10^{5}$	$1{,}8.10^{6}$	$2{,}8.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	2	$4{,}8.10^{2}$
Re-184	$1{,}1.10^{5}$	$1{,}5.10^{5}$	$2{,}5.10^{5}$	$3{,}6.10^{5}$	$4{,}2.10^{5}$	$5{,}3.10^{5}$	5	$5{,}7.10^{1}$
Re-184m	$3{,}4.10^{4}$	$4{,}5.10^{4}$	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}2.10^{5}$	$1{,}5.10^{5}$	5	$1{,}7.10^{1}$
Re-186	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$3{,}6.10^{5}$	$5{,}6.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$9{,}2.10^{1}$
Re-186m	$1{,}7.10^{4}$	$2{,}2.10^{4}$	$3{,}7.10^{4}$	$5{,}6.10^{4}$	$7{,}1.10^{4}$	$8{,}3.10^{4}$	5	$9{,}8.10^{0}$
Re-187	$1{,}8.10^{7}$	$2{,}4.10^{7}$	$5{,}0.10^{7}$	$8{,}3.10^{7}$	$1{,}3.10^{8}$	$1{,}6.10^{8}$	2	$1{,}3.10^{4}$
Re-188	$1{,}5.10^{5}$	$2{,}3.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}2.10^{2}$
Re-188m	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$2{,}5.10^{7}$	$3{,}7.10^{7}$	$6{,}3.10^{7}$	$7{,}7.10^{7}$	2	$5{,}8.10^{3}$
Re-189	$2{,}6.10^{5}$	$3{,}8.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}8.10^{6}$	$2{,}3.10^{6}$	2	$2{,}0.10^{2}$
Os-180	$9{,}1.10^{6}$	$1{,}2.10^{7}$	$2{,}4.10^{7}$	$3{,}8.10^{7}$	$5{,}6.10^{7}$	$6{,}7.10^{7}$	2	$6{,}4.10^{3}$
Os-181	$2{,}1.10^{6}$	$2{,}8.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$1{,}5.10^{3}$
Os-182	$3{,}8.10^{5}$	$5{,}0.10^{5}$	$1{,}0.10^{6}$	$1{,}4.10^{6}$	$2{,}1.10^{6}$	$2{,}6.10^{6}$	4	$2{,}6.10^{2}$
Os-185	$1{,}4.10^{5}$	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$4{,}2.10^{5}$	$5{,}3.10^{5}$	$6{,}3.10^{5}$	5	$7{,}2.10^{1}$
Os-189m	$1{,}5.10^{7}$	$2{,}3.10^{7}$	$5{,}3.10^{7}$	$8{,}3.10^{7}$	$1{,}6.10^{8}$	$1{,}9.10^{8}$	2	$1{,}2.10^{4}$
Os-191	$1{,}1.10^{5}$	$1{,}5.10^{5}$	$2{,}6.10^{5}$	$3{,}7.10^{5}$	$4{,}3.10^{5}$	$5{,}3.10^{5}$	5	$6{,}0.10^{1}$
Os-191m	$1{,}2.10^{6}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$4{,}2.10^{6}$	$5{,}0.10^{6}$	$6{,}3.10^{6}$	5	$6{,}8.10^{2}$
Os-193	$2{,}5.10^{5}$	$3{,}7.10^{5}$	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$1{,}9.10^{6}$	2	$1{,}9.10^{2}$
Os-194	$3{,}8.10^{3}$	$4{,}2.10^{3}$	$6{,}3.10^{3}$	$9{,}1.10^{3}$	$1{,}1.10^{4}$	$1{,}2.10^{4}$	6	$1{,}5.10^{0}$
Ir-182	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$3{,}4.10^{7}$	$4{,}2.10^{7}$	2	$3{,}5.10^{3}$
Ir-184	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$2{,}9.10^{6}$	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$8{,}3.10^{6}$	2	$8{,}0.10^{2}$
Ir-185	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$5{,}3.10^{6}$	4	$5{,}3.10^{2}$
Ir-186	$4{,}3.10^{5}$	$5{,}6.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}5.10^{6}$	$3{,}1.10^{6}$	2	$2{,}9.10^{2}$
Ir-186m	$2{,}9.10^{6}$	$4{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}9.10^{7}$	$2{,}3.10^{7}$	2	$2{,}1.10^{3}$
Ir-187	$1{,}7.10^{6}$	$2{,}2.10^{6}$	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$1{,}2.10^{3}$
Ir-188	$3{,}6.10^{5}$	$4{,}5.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	4	$2{,}3.10^{2}$
Ir-189	$3{,}3.10^{5}$	$4{,}5.10^{5}$	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	$1{,}7.10^{6}$	5	$1{,}9.10^{2}$
Ir-190	$9{,}1.10^{4}$	$1{,}1.10^{5}$	$2{,}1.10^{5}$	$2{,}9.10^{5}$	$3{,}3.10^{5}$	$4{,}2.10^{5}$	5	$4{,}6.10^{1}$
Ir-190m [1]	$1{,}6.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$1{,}1.10^{3}$
Ir-190m s	$1{,}8.10^{7}$	$2{,}2.10^{7}$	$4{,}5.10^{7}$	$6{,}3.10^{7}$	$7{,}7.10^{7}$	$1{,}0.10^{8}$	5	$1{,}1.10^{4}$
Ir-192	$3{,}6.10^{4}$	$4{,}5.10^{4}$	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}2.10^{5}$	$1{,}5.10^{5}$	5	$1{,}7.10^{1}$
Ir-192m	$1{,}1.10^{4}$	$1{,}1.10^{4}$	$1{,}5.10^{4}$	$2{,}2.10^{4}$	$2{,}5.10^{4}$	$2{,}6.10^{4}$	6	$3{,}2.10^{0}$
Ir-193m	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$4{,}2.10^{5}$	$5{,}6.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	5	$8{,}6.10^{1}$
Ir-194	$1{,}8.10^{5}$	$2{,}7.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$1{,}8.10^{6}$	2	$1{,}4.10^{2}$
Ir-194m	$2{,}0.10^{4}$	$2{,}4.10^{4}$	$3{,}8.10^{4}$	$5{,}6.10^{4}$	$6{,}7.10^{4}$	$7{,}7.10^{4}$	5	$9{,}1.10^{0}$
Ir-195	$1{,}8.10^{6}$	$2{,}6.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$1{,}4.10^{3}$
Ir-195m	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$2{,}3.10^{6}$	$3{,}4.10^{6}$	$5{,}0.10^{6}$	$5{,}9.10^{6}$	2	$5{,}8.10^{2}$
Pt-186	$3{,}3.10^{6}$	$4{,}2.10^{6}$	$8{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}4.10^{7}$	$3{,}0.10^{7}$	2	$2{,}2.10^{3}$
Pt-188	$2{,}8.10^{5}$	$3{,}7.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$2{,}4.10^{6}$	2	$1{,}9.10^{2}$
Pt-189	$2{,}6.10^{6}$	$3{,}4.10^{6}$	$7{,}1.10^{6}$	$1{,}2.10^{7}$	$2{,}1.10^{7}$	$2{,}6.10^{7}$	2	$1{,}8.10^{3}$
Pt-191	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}7.10^{6}$	$4{,}3.10^{6}$	$7{,}7.10^{6}$	$9{,}1.10^{6}$	2	$6{,}7.10^{2}$
Pt-193	$4{,}5.10^{6}$	$6{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$4{,}0.10^{7}$	$4{,}8.10^{7}$	2	$3{,}3.10^{3}$
Pt-193m	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$2{,}2.10^{6}$	$3{,}7.10^{6}$	$7{,}1.10^{6}$	$8{,}3.10^{6}$	2	$5{,}3.10^{2}$
Pt-195m	$4{,}5.10^{5}$	$6{,}7.10^{5}$	$1{,}6.10^{6}$	$2{,}6.10^{6}$	$4{,}8.10^{6}$	$5{,}6.10^{6}$	2	$3{,}5.10^{2}$
Pt-197	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$3{,}2.10^{6}$	$5{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$7{,}2.10^{2}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Pt-197m	$3,6.10^6$	$5,6.10^6$	$1,3.10^7$	$2,0.10^7$	$3,6.10^7$	$4,2.10^7$	2	$2,9.10^3$
Pt-199	$7,7.10^6$	$1,2.10^7$	$2,8.10^7$	$4,3.10^7$	$7,1.10^7$	$8,3.10^7$	2	$6,3.10^3$
Pt-200	$3,8.10^5$	$5,9.10^5$	$1,4.10^6$	$2,0.10^6$	$3,8.10^6$	$4,5.10^6$	2	$3,1.10^2$
Au-193	$1,3.10^6$	$1,7.10^6$	$3,3.10^6$	$5,0.10^6$	$6,7.10^6$	$8,3.10^6$	2	$8,9.10^2$
Au-194	$5,9.10^5$	$7,1.10^5$	$1,4.10^6$	$2,1.10^6$	$3,3.10^6$	$4,2.10^6$	2	$3,8.10^2$
Au-195	$1,2.10^5$	$1,5.10^5$	$2,6.10^5$	$3,8.10^5$	$4,8.10^5$	$5,9.10^5$	5	$6,5.10^1$
Au-198	$1,9.10^5$	$2,3.10^5$	$5,0.10^5$	$7,1.10^5$	$9,1.10^5$	$1,2.10^6$	2	$1,2.10^2$
Au-198m	$1,1.10^5$	$1,4.10^5$	$2,5.10^5$	$3,4.10^5$	$4,0.10^5$	$5,0.10^5$	5	$5,5.10^1$
Au-199	$2,6.10^5$	$3,6.10^5$	$6,3.10^5$	$8,3.10^5$	$1,0.10^6$	$1,3.10^6$	5	$1,4.10^2$
Au-200	$2,9.10^6$	$4,8.10^6$	$1,0.10^7$	$1,6.10^7$	$2,4.10^7$	$2,9.10^7$	2	$2,5.10^3$
Au-200m	$2,0.10^5$	$2,6.10^5$	$5,0.10^5$	$7,7.10^5$	$1,1.10^6$	$1,4.10^6$	2	$1,3.10^2$
Au-201	$6,7.10^6$	$1,0.10^7$	$2,2.10^7$	$3,3.10^7$	$4,8.10^7$	$5,9.10^7$	2	$5,3.10^3$
Hg-193 (organic)	$4,5.10^6$	$5,6.10^6$	$1,2.10^7$	$2,0.10^7$	$3,4.10^7$	$4,2.10^7$	2	$2,9.10^3$
Hg-193 (inorganic)	$1,9.10^6$	$2,6.10^6$	$5,3.10^6$	$7,7.10^6$	$1,1.10^7$	$1,3.10^7$	4	$1,4.10^3$
Hg-193 (vapour)	$2,4.10^5$	$2,9.10^5$	$4,5.10^5$	$6,3.10^5$	$8,3.10^5$	$9,1.10^5$	4	$1,1.10^2$
Hg-193m (organic)	$1,2.10^6$	$1,3.10^6$	$2,7.10^6$	$4,5.10^6$	$7,7.10^6$	$1,0.10^7$	2	$6,9.10^2$
Hg-193m (inorganic)	$5,3.10^5$	$7,1.10^5$	$1,4.10^6$	$2,1.10^6$	$3,1.10^6$	$3,8.10^6$	2	$3,8.10^2$
Hg-193m (vapour)	$8,3.10^4$	$1,1.10^5$	$1,6.10^5$	$2,2.10^5$	$2,9.10^5$	$3,2.10^5$	4	$4,0.10^1$
Hg-194 (organic)	$2,0.10^4$	$2,7.10^4$	$4,2.10^4$	$5,3.10^4$	$6,7.10^4$	$7,1.10^4$	6	$8,8.10^0$
Hg-194 (inorganic)	$3,1.10^4$	$3,4.10^4$	$5,0.10^4$	$6,3.10^4$	$7,1.10^4$	$7,7.10^4$	6	$9,5.10^0$
Hg-194 (vapour)	$1,1.10^4$	$1,2.10^4$	$1,6.10^4$	$2,0.10^4$	$2,3.10^4$	$2,5.10^4$	6	$3,1.10^0$
Hg-195 (organic)	$5,0.10^6$	$5,6.10^6$	$1,2.10^7$	$2,0.10^7$	$3,6.10^7$	$4,3.10^7$	2	$2,9.10^3$
Hg-195 (inorganic)	$1,9.10^6$	$2,6.10^6$	$5,0.10^6$	$7,7.10^6$	$1,1.10^7$	$1,4.10^7$	2	$1,3.10^3$
Hg-195 (vapour)	$1,9.10^5$	$2,3.10^5$	$3,6.10^5$	$4,8.10^5$	$6,3.10^5$	$7,1.10^5$	4	$8,5.10^1$
Hg-195m (organic)	$9,1.10^5$	$1,0.10^6$	$2,3.10^6$	$3,7.10^6$	$7,1.10^6$	$8,3.10^6$	2	$5,4.10^2$
Hg-195m (inorganic)	$2,7.10^5$	$3,8.10^5$	$7,1.10^5$	$1,2.10^6$	$1,5.10^6$	$1,9.10^6$	2	$2,0.10^2$
Hg-195m (vapour)	$3,3.10^4$	$4,0.10^4$	$6,3.10^4$	$8,3.10^4$	$1,1.10^5$	$1,2.10^5$	4	$1,5.10^1$
Hg-197 (organic)	$2,1.10^6$	$2,5.10^6$	$5,6.10^6$	$9,1.10^6$	$1,7.10^7$	$2,1.10^7$	2	$1,3.10^3$
Hg-197 (inorganic)	$5,9.10^5$	$8,3.10^5$	$1,5.10^6$	$2,2.10^6$	$2,6.10^6$	$3,3.10^6$	5	$3,6.10^2$
Hg-197 (vapour)	$6,3.10^4$	$7,7.10^4$	$1,2.10^5$	$1,6.10^5$	$2,1.10^5$	$2,3.10^5$	6	$2,8.10^1$
Hg-197m (organic)	$1,1.10^6$	$1,3.10^6$	$2,9.10^6$	$4,8.10^6$	$9,1.10^6$	$1,0.10^7$	2	$6,7.10^2$
Hg-197m (inorganic)	$2,9.10^5$	$4,0.10^5$	$9,1.10^5$	$1,2.10^6$	$1,5.10^6$	$1,9.10^6$	5	$2,0.10^2$
Hg-197m (vapour)	$4,8.10^4$	$5,9.10^4$	$9,1.10^4$	$1,2.10^5$	$1,6.10^5$	$1,7.10^5$	6	$2,1.10^1$
Hg-199m (organic)	$7,1.10^6$	$1,0.10^7$	$2,4.10^7$	$3,7.10^7$	$5,9.10^7$	$6,7.10^7$	2	$5,5.10^3$
Hg-199m (inorganic)	$4,0.10^6$	$5,9.10^6$	$1,3.10^7$	$1,9.10^7$	$2,6.10^7$	$3,1.10^7$	2	$3,1.10^3$
Hg-199m (vapour)	$1,5.10^6$	$1,9.10^6$	$2,9.10^6$	$4,0.10^6$	$5,3.10^6$	$5,6.10^6$	6	$6,9.10^2$
Hg-203 (organic)	$1,8.10^5$	$2,7.10^5$	$5,9.10^5$	$9,1.10^5$	$1,5.10^6$	$1,8.10^6$	2	$1,4.10^2$
Hg-203 (inorganic)	$1,0.10^5$	$1,3.10^5$	$2,1.10^5$	$2,9.10^5$	$3,3.10^5$	$4,2.10^5$	5	$4,6.10^1$
Hg-203 (vapour)	$3,3.10^4$	$4,3.10^4$	$6,7.10^4$	$1,0.10^5$	$1,3.10^5$	$1,4.10^5$	6	$1,8.10^1$
Tl-194	$2,8.10^7$	$3,3.10^7$	$6,7.10^7$	$1,1.10^8$	$1,8.10^8$	$2,3.10^8$	2	$1,8.10^4$
Tl-194m	$5,9.10^6$	$8,3.10^6$	$1,6.10^7$	$2,6.10^7$	$4,3.10^7$	$5,3.10^7$	2	$4,4.10^3$
Tl-195	$7,7.10^6$	$1,0.10^7$	$1,9.10^7$	$3,1.10^7$	$5,3.10^7$	$6,7.10^7$	2	$5,3.10^3$
Tl-197	$7,7.10^6$	$1,0.10^7$	$2,1.10^7$	$3,4.10^7$	$5,9.10^7$	$7,1.10^7$	2	$5,4.10^3$
Tl-198	$2,1.10^6$	$2,5.10^6$	$4,8.10^6$	$7,7.10^6$	$1,3.10^7$	$1,7.10^7$	2	$1,3.10^3$
Tl-198m	$3,1.10^6$	$4,0.10^6$	$8,3.10^6$	$1,3.10^7$	$2,2.10^7$	$2,7.10^7$	2	$2,1.10^3$
Tl-199	$5,9.10^6$	$7,7.10^6$	$1,6.10^7$	$2,6.10^7$	$4,3.10^7$	$5,3.10^7$	2	$4,0.10^3$
Tl-200	$1,0.10^6$	$1,1.10^6$	$2,2.10^6$	$3,6.10^6$	$6,3.10^6$	$7,7.10^6$	2	$6,0.10^2$
Tl-201	$2,2.10^6$	$3,0.10^6$	$6,7.10^6$	$1,1.10^7$	$1,9.10^7$	$2,3.10^7$	2	$1,6.10^3$
Tl-202	$6,7.10^5$	$8,3.10^5$	$1,7.10^6$	$2,6.10^6$	$4,3.10^6$	$5,3.10^6$	2	$4,4.10^2$
Tl-204	$2,0.10^5$	$3,0.10^5$	$6,7.10^5$	$1,1.10^6$	$2,1.10^6$	$2,6.10^6$	2	$1,6.10^2$
Pb-195m	$4,8.10^6$	$6,7.10^6$	$1,4.10^7$	$2,1.10^7$	$3,1.10^7$	$3,7.10^7$	2	$3,5.10^3$
Pb-198	$1,9.10^6$	$2,4.10^6$	$4,5.10^6$	$7,1.10^6$	$1,1.10^7$	$1,4.10^7$	2	$1,3.10^3$
Pb-199	$3,4.10^6$	$4,3.10^6$	$8,3.10^6$	$1,4.10^7$	$2,1.10^7$	$2,7.10^7$	2	$2,3.10^3$
Pb-200	$4,2.10^5$	$5,6.10^5$	$1,1.10^6$	$1,6.10^6$	$2,3.10^6$	$2,9.10^6$	4	$2,9.10^2$
Pb-201	$1,1.10^6$	$1,5.10^6$	$2,9.10^6$	$4,5.10^6$	$6,7.10^6$	$8,3.10^6$	2	$7,9.10^2$
Pb-202	$3,6.10^4$	$3,6.10^4$	$5,0.10^4$	$7,1.10^4$	$5,6.10^4$	$8,3.10^4$	5	$7,6.10^0$
Pb-202m	$1,4.10^6$	$1,7.10^6$	$3,3.10^6$	$5,3.10^6$	$7,7.10^6$	$1,0.10^7$	2	$9,1.10^2$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Pb-203	$6{,}7.10^{5}$	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$2{,}6.10^{6}$	$3{,}6.10^{6}$	$4{,}5.10^{6}$	4	$4{,}7.10^{2}$
Pb-205	$3{,}4.10^{5}$	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}2.10^{6}$	6	$1{,}5.10^{2}$
Pb-209	$2{,}3.10^{6}$	$3{,}4.10^{6}$	$7{,}1.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	4	$1{,}8.10^{3}$
Pb-210	$5{,}6.10^{1}$	$5{,}6.10^{1}$	$9{,}1.10^{1}$	$1{,}4.10^{2}$	$1{,}7.10^{2}$	$1{,}8.10^{2}$	6	$2{,}2.10^{-2}$
Pb-211	$1{,}5.10^{4}$	$2{,}1.10^{4}$	$3{,}7.10^{4}$	$5{,}0.10^{4}$	$6{,}7.10^{4}$	$8{,}3.10^{4}$	4	$8{,}9.10^{0}$
Pb-212	$1{,}5.10^{3}$	$2{,}0.10^{3}$	$3{,}0.10^{3}$	$4{,}0.10^{3}$	$4{,}2.10^{3}$	$5{,}3.10^{3}$	5	$5{,}7.10^{-1}$
Pb-214	$1{,}4.10^{4}$	$2{,}0.10^{4}$	$3{,}6.10^{4}$	$4{,}8.10^{4}$	$6{,}7.10^{4}$	$6{,}7.10^{4}$	6	$8{,}2.10^{0}$
Bi-200	$4{,}0.10^{6}$	$5{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}6.10^{7}$	$2{,}4.10^{7}$	$3{,}0.10^{7}$	2	$2{,}8.10^{3}$
Bi-201	$1{,}8.10^{6}$	$2{,}4.10^{6}$	$5{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$1{,}3.10^{3}$
Bi-202	$2{,}4.10^{6}$	$2{,}9.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}5.10^{3}$
Bi-203	$5{,}0.10^{5}$	$6{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$3{,}8.10^{6}$	2	$3{,}3.10^{2}$
Bi-205	$1{,}8.10^{5}$	$2{,}3.10^{5}$	$4{,}0.10^{5}$	$6{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	4	$1{,}1.10^{2}$
Bi-206	$1{,}0.10^{5}$	$1{,}3.10^{5}$	$2{,}3.10^{5}$	$3{,}4.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	4	$6{,}2.10^{1}$
Bi-207	$4{,}3.10^{4}$	$5{,}0.10^{4}$	$8{,}3.10^{4}$	$1{,}2.10^{5}$	$1{,}5.10^{5}$	$1{,}8.10^{5}$	5	$2{,}1.10^{1}$
Bi-210	$2{,}6.10^{3}$	$3{,}3.10^{3}$	$5{,}3.10^{3}$	$7{,}7.10^{3}$	$9{,}1.10^{3}$	$1{,}1.10^{4}$	5	$1{,}2.10^{0}$
Bi-210m	$6{,}7.10^{1}$	$9{,}1.10^{1}$	$1{,}4.10^{2}$	$2{,}1.10^{2}$	$2{,}4.10^{2}$	$2{,}9.10^{2}$	5	$3{,}3.10^{-2}$
Bi-212	$6{,}3.10^{3}$	$9{,}1.10^{3}$	$1{,}7.10^{4}$	$2{,}3.10^{4}$	$2{,}6.10^{4}$	$3{,}2.10^{4}$	5	$3{,}6.10^{0}$
Bi-213	$6{,}3.10^{3}$	$8{,}3.10^{3}$	$1{,}7.10^{4}$	$2{,}3.10^{4}$	$2{,}8.10^{4}$	$3{,}3.10^{4}$	5	$3{,}8.10^{0}$
Bi-214	$1{,}1.10^{4}$	$1{,}6.10^{4}$	$3{,}2.10^{4}$	$4{,}5.10^{4}$	$5{,}9.10^{4}$	$7{,}1.10^{4}$	5	$8{,}1.10^{0}$
Po-203	$3{,}6.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$2{,}2.10^{7}$	$2{,}8.10^{7}$	2	$2{,}4.10^{3}$
Po-205	$2{,}4.10^{6}$	$3{,}1.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}4.10^{7}$	4	$1{,}5.10^{3}$
Po-207	$1{,}5.10^{6}$	$1{,}9.10^{6}$	$3{,}7.10^{6}$	$5{,}9.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$9{,}9.10^{2}$
Po-210	$5{,}6.10^{1}$	$7{,}1.10^{1}$	$1{,}2.10^{2}$	$1{,}7.10^{2}$	$2{,}0.10^{2}$	$2{,}3.10^{2}$	5	$2{,}7.10^{-2}$
At-207	$1{,}1.10^{5}$	$1{,}5.10^{5}$	$2{,}3.10^{5}$	$3{,}2.10^{5}$	$3{,}4.10^{5}$	$4{,}3.10^{5}$	5	$4{,}7.10^{1}$
At-211	$1{,}9.10^{3}$	$2{,}7.10^{3}$	$5{,}3.10^{3}$	$7{,}1.10^{3}$	$7{,}7.10^{3}$	$9{,}1.10^{3}$	5	$1{,}1.10^{0}$
Fr-222	$1{,}1.10^{4}$	$1{,}6.10^{4}$	$3{,}3.10^{4}$	$4{,}8.10^{4}$	$6{,}3.10^{4}$	$7{,}1.10^{4}$	2	$8{,}4.10^{0}$
Fr-223	$9{,}1.10^{4}$	$1{,}4.10^{5}$	$3{,}1.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}1.10^{6}$	2	$7{,}2.10^{1}$
Ra-223	$3{,}1.10^{1}$	$4{,}2.10^{1}$	$6{,}7.10^{1}$	$9{,}1.10^{1}$	$9{,}1.10^{1}$	$1{,}1.10^{2}$	5	$1{,}2.10^{-2}$
Ra-224	$8{,}3.10^{1}$	$1{,}1.10^{2}$	$1{,}7.10^{2}$	$2{,}3.10^{2}$	$2{,}4.10^{2}$	$2{,}9.10^{2}$	5	$3{,}3.10^{-2}$
Ra-225	$3{,}6.10^{1}$	$4{,}5.10^{1}$	$7{,}1.10^{1}$	$1{,}0.10^{2}$	$1{,}0.10^{2}$	$1{,}3.10^{2}$	5	$1{,}4.10^{-2}$
Ra-226	$2{,}9.10^{1}$	$3{,}4.10^{1}$	$5{,}3.10^{1}$	$8{,}3.10^{1}$	$1{,}0.10^{2}$	$1{,}1.10^{2}$	6	$1{,}3.10^{-2}$
Ra-227	$6{,}7.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	$1{,}9.10^{6}$	$2{,}2.10^{6}$	5	$2{,}6.10^{2}$
Ra-228	$2{,}0.10^{1}$	$2{,}1.10^{1}$	$3{,}1.10^{1}$	$5{,}0.10^{1}$	$6{,}3.10^{1}$	$6{,}3.10^{1}$	6	$7{,}7.10^{-3}$
Ac-224	$2{,}2.10^{3}$	$2{,}9.10^{3}$	$4{,}5.10^{3}$	$5{,}9.10^{3}$	$6{,}3.10^{3}$	$7{,}7.10^{3}$	5	$8{,}6.10^{-1}$
Ac-225	$3{,}2.10^{1}$	$4{,}3.10^{1}$	$6{,}7.10^{1}$	$9{,}1.10^{1}$	$9{,}1.10^{1}$	$1{,}2.10^{2}$	5	$1{,}2.10^{-2}$
Ac-226	$2{,}1.10^{2}$	$2{,}9.10^{2}$	$4{,}3.10^{2}$	$5{,}9.10^{2}$	$6{,}3.10^{2}$	$7{,}7.10^{2}$	5	$8{,}6.10^{-2}$
Ac-227	$5{,}9.10^{-1}$	$6{,}3.10^{-1}$	$1{,}0.10^{0}$	$1{,}4.10^{0}$	$1{,}8.10^{0}$	$1{,}8.10^{0}$	6	$2{,}2.10^{-4}$
Ac-228	$5{,}6.10^{3}$	$6{,}3.10^{3}$	$1{,}0.10^{4}$	$1{,}8.10^{4}$	$3{,}4.10^{4}$	$4{,}0.10^{4}$	4	$3{,}1.10^{0}$
Th-226	$3{,}2.10^{3}$	$4{,}5.10^{3}$	$8{,}3.10^{3}$	$1{,}1.10^{4}$	$1{,}3.10^{4}$	$1{,}6.10^{4}$	5	$1{,}8.10^{0}$
Th-227	$2{,}6.10^{1}$	$3{,}3.10^{1}$	$5{,}3.10^{1}$	$7{,}1.10^{1}$	$7{,}7.10^{1}$	$1{,}0.10^{2}$	5	$1{,}1.10^{-2}$
Th-228	$5{,}6.10^{0}$	$6{,}7.10^{0}$	$1{,}2.10^{1}$	$1{,}8.10^{1}$	$2{,}1.10^{1}$	$2{,}5.10^{1}$	5	$2{,}9.10^{-3}$
Th-229	$1{,}9.10^{0}$	$2{,}0.10^{0}$	$2{,}8.10^{0}$	$3{,}4.10^{0}$	$4{,}2.10^{0}$	$4{,}2.10^{0}$	6	$5{,}1.10^{-4}$
Th-230	$4{,}8.10^{0}$	$5{,}0.10^{0}$	$7{,}1.10^{0}$	$9{,}1.10^{0}$	$1{,}0.10^{1}$	$1{,}0.10^{1}$	6	$1{,}2.10^{-3}$
Th-231	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	$3{,}0.10^{6}$	2	$3{,}1.10^{2}$
Th-232	$4{,}3.10^{0}$	$4{,}5.10^{0}$	$6{,}3.10^{0}$	$7{,}7.10^{0}$	$8{,}3.10^{0}$	$9{,}1.10^{0}$	5	$1{,}1.10^{-3}$
Th-234	$2{,}4.10^{4}$	$3{,}2.10^{4}$	$5{,}9.10^{4}$	$9{,}1.10^{4}$	$1{,}1.10^{5}$	$1{,}3.10^{5}$	5	$1{,}5.10^{1}$
Pa-227	$2{,}6.10^{3}$	$3{,}6.10^{3}$	$6{,}7.10^{3}$	$9{,}1.10^{3}$	$1{,}1.10^{4}$	$1{,}3.10^{4}$	5	$1{,}5.10^{0}$
Pa-228	$3{,}4.10^{3}$	$4{,}2.10^{3}$	$6{,}7.10^{3}$	$1{,}0.10^{4}$	$1{,}1.10^{4}$	$1{,}3.10^{4}$	5	$1{,}5.10^{0}$
Pa-230	$3{,}4.10^{2}$	$4{,}5.10^{2}$	$7{,}1.10^{2}$	$1{,}0.10^{3}$	$1{,}0.10^{3}$	$1{,}3.10^{3}$	5	$1{,}4.10^{-1}$
Pa-231	$4{,}5.10^{0}$	$4{,}3.10^{0}$	$5{,}3.10^{0}$	$6{,}7.10^{0}$	$6{,}7.10^{0}$	$7{,}1.10^{0}$	6	$8{,}8.10^{-4}$
Pa-232	$5{,}3.10^{4}$	$5{,}6.10^{4}$	$7{,}1.10^{4}$	$9{,}1.10^{4}$	$1{,}0.10^{5}$	$1{,}0.10^{5}$	6	$1{,}2.10^{1}$
Pa-233	$5{,}9.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$1{,}8.10^{5}$	$2{,}0.10^{5}$	$2{,}6.10^{5}$	5	$2{,}8.10^{1}$
Pa-234	$3{,}4.10^{5}$	$4{,}8.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}0.10^{6}$	$2{,}5.10^{6}$	2	$2{,}5.10^{2}$
U-230	$1{,}7.10^{1}$	$2{,}3.10^{1}$	$3{,}6.10^{1}$	$4{,}8.10^{1}$	$5{,}0.10^{1}$	$6{,}3.10^{1}$	5	$6{,}8.10^{-3}$
U-231	$3{,}8.10^{5}$	$5{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}0.10^{6}$	$2{,}5.10^{6}$	2	$2{,}8.10^{2}$
U-232	$1{,}0.10^{1}$	$1{,}0.10^{1}$	$1{,}5.10^{1}$	$2{,}3.10^{1}$	$2{,}6.10^{1}$	$2{,}7.10^{1}$	6	$3{,}3.10^{-3}$
U-233	$2{,}9.10^{1}$	$3{,}3.10^{1}$	$5{,}3.10^{1}$	$8{,}3.10^{1}$	$9{,}1.10^{1}$	$1{,}0.10^{2}$	5	$1{,}2.10^{-2}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
U-234[3]	$3{,}0.10^{1}$	$3{,}4.10^{1}$	$5{,}3.10^{1}$	$8{,}3.10^{1}$	$1{,}0.10^{2}$	$1{,}1.10^{2}$	6	$1{,}3.10^{-2}$
U-235[3]	$3{,}3.10^{1}$	$3{,}8.10^{1}$	$5{,}9.10^{1}$	$9{,}1.10^{1}$	$1{,}1.10^{2}$	$1{,}2.10^{2}$	6	$1{,}5.10^{-2}$
U-236	$3{,}2.10^{1}$	$3{,}7.10^{1}$	$5{,}6.10^{1}$	$9{,}1.10^{1}$	$1{,}1.10^{2}$	$1{,}1.10^{2}$	6	$1{,}4.10^{-2}$
U-237	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}7.10^{5}$	$3{,}7.10^{5}$	$4{,}2.10^{5}$	$5{,}3.10^{5}$	5	$5{,}7.10^{1}$
U-238[3]	$3{,}4.10^{1}$	$4{,}0.10^{1}$	$6{,}3.10^{1}$	$1{,}0.10^{2}$	$1{,}1.10^{2}$	$1{,}3.10^{2}$	6	$1{,}5.10^{-2}$
U-239	$5{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}7.10^{7}$	$2{,}5.10^{7}$	$3{,}4.10^{7}$	$4{,}2.10^{7}$	2	$4{,}4.10^{3}$
U-240	$2{,}0.10^{5}$	$3{,}0.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$1{,}7.10^{6}$	2	$1{,}6.10^{2}$
Np-232	$5{,}0.10^{6}$	$5{,}3.10^{6}$	$8{,}3.10^{6}$	$9{,}1.10^{6}$	$9{,}1.10^{6}$	$8{,}3.10^{6}$	6	$1{,}0.10^{3}$
Np-233	$6{,}7.10^{7}$	$8{,}3.10^{7}$	$1{,}8.10^{8}$	$2{,}9.10^{8}$	$4{,}8.10^{8}$	$5{,}9.10^{8}$	2	$4{,}4.10^{4}$
Np-234	$2{,}6.10^{5}$	$3{,}2.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$1{,}8.10^{6}$	2	$1{,}7.10^{2}$
Np-235	$2{,}4.10^{5}$	$2{,}9.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	2	$1{,}5.10^{2}$
Np-236	$1{,}1.10^{2}$	$1{,}1.10^{2}$	$1{,}4.10^{2}$	$1{,}3.10^{2}$	$1{,}3.10^{2}$	$1{,}3.10^{2}$	6	$1{,}5.10^{-2}$
Np-236m	$3{,}6.10^{4}$	$3{,}8.10^{4}$	$6{,}7.10^{4}$	$9{,}1.10^{4}$	$1{,}1.10^{5}$	$1{,}1.10^{5}$	6	$1{,}4.10^{1}$
Np-237	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}7.10^{1}$	$2{,}0.10^{1}$	$2{,}1.10^{1}$	$2{,}0.10^{1}$	6	$2{,}5.10^{-3}$
Np-238	$1{,}1.10^{5}$	$1{,}3.10^{5}$	$2{,}1.10^{5}$	$2{,}7.10^{5}$	$3{,}0.10^{5}$	$2{,}9.10^{5}$	6	$3{,}5.10^{1}$
Np-239	$1{,}7.10^{5}$	$2{,}4.10^{5}$	$4{,}5.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	5	$1{,}1.10^{2}$
Np-240	$1{,}5.10^{6}$	$2{,}2.10^{6}$	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$1{,}1.10^{3}$
Pu-234	$1{,}1.10^{4}$	$1{,}5.10^{4}$	$2{,}4.10^{4}$	$3{,}2.10^{4}$	$3{,}3.10^{4}$	$4{,}2.10^{4}$	5	$4{,}6.10^{0}$
Pu-235	$7{,}7.10^{7}$	$1{,}0.10^{8}$	$2{,}0.10^{8}$	$3{,}3.10^{8}$	$5{,}3.10^{8}$	$6{,}7.10^{8}$	2	$5{,}3.10^{4}$
Pu-236	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}6.10^{1}$	$2{,}3.10^{1}$	$2{,}7.10^{1}$	$2{,}5.10^{1}$	6	$3{,}1.10^{-3}$
Pu-237	$4{,}5.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}1.10^{6}$	$2{,}6.10^{6}$	5	$2{,}9.10^{2}$
Pu-238	$5{,}0.10^{0}$	$5{,}3.10^{0}$	$7{,}1.10^{0}$	$9{,}1.10^{0}$	$1{,}0.10^{1}$	$9{,}1.10^{0}$	6	$1{,}1.10^{-3}$
Pu-239	$4{,}8.10^{0}$	$5{,}0.10^{0}$	$6{,}7.10^{0}$	$8{,}3.10^{0}$	$9{,}1.10^{0}$	$8{,}3.10^{0}$	6	$1{,}0.10^{-3}$
Pu-240	$4{,}8.10^{0}$	$5{,}0.10^{0}$	$6{,}7.10^{0}$	$8{,}3.10^{0}$	$9{,}1.10^{0}$	$8{,}3.10^{0}$	6	$1{,}0.10^{-3}$
Pu-241	$3{,}6.10^{2}$	$3{,}4.10^{2}$	$3{,}8.10^{2}$	$4{,}2.10^{2}$	$4{,}5.10^{2}$	$4{,}3.10^{2}$	6	$5{,}4.10^{-2}$
Pu-242	$5{,}0.10^{0}$	$5{,}3.10^{0}$	$7{,}1.10^{0}$	$8{,}3.10^{0}$	$9{,}1.10^{0}$	$9{,}1.10^{0}$	6	$1{,}1.10^{-3}$
Pu-243	$1{,}7.10^{6}$	$2{,}4.10^{6}$	$5{,}0.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}2.10^{7}$	4	$1{,}3.10^{3}$
Pu-244	$5{,}0.10^{0}$	$5{,}3.10^{0}$	$7{,}1.10^{0}$	$8{,}3.10^{0}$	$9{,}1.10^{0}$	$9{,}1.10^{0}$	6	$1{,}1.10^{-3}$
Pu-245	$2{,}6.10^{5}$	$3{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$2{,}0.10^{2}$
Pu-246	$2{,}6.10^{4}$	$3{,}6.10^{4}$	$6{,}3.10^{4}$	$8{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}3.10^{5}$	5	$1{,}4.10^{1}$
Am-237	$5{,}9.10^{6}$	$7{,}7.10^{6}$	$1{,}5.10^{7}$	$2{,}3.10^{7}$	$3{,}1.10^{7}$	$3{,}8.10^{7}$	2	$4{,}0.10^{3}$
Am-238	$2{,}4.10^{6}$	$2{,}6.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	$5{,}6.10^{6}$	$5{,}3.10^{6}$	6	$6{,}5.10^{2}$
Am-239	$6{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$2{,}5.10^{6}$	$3{,}7.10^{6}$	$4{,}2.10^{6}$	4	$4{,}5.10^{2}$
Am-240	$3{,}3.10^{5}$	$4{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$2{,}3.10^{2}$
Am-241	$5{,}6.10^{0}$	$5{,}6.10^{0}$	$8{,}3.10^{0}$	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}0.10^{1}$	6	$1{,}3.10^{-3}$
Am-242	$1{,}1.10^{4}$	$1{,}4.10^{4}$	$2{,}6.10^{4}$	$3{,}7.10^{4}$	$4{,}2.10^{4}$	$5{,}0.10^{4}$	5	$5{,}7.10^{0}$
Am-242m	$6{,}3.10^{0}$	$6{,}7.10^{0}$	$9{,}1.10^{0}$	$1{,}1.10^{1}$	$1{,}1.10^{1}$	$1{,}1.10^{1}$	6	$1{,}3.10^{-3}$
Am-243	$5{,}6.10^{0}$	$5{,}9.10^{0}$	$8{,}3.10^{0}$	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}0.10^{1}$	6	$1{,}3.10^{-3}$
Am-244	$1{,}0.10^{5}$	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$2{,}4.10^{5}$	$2{,}9.10^{5}$	$2{,}7.10^{5}$	6	$3{,}3.10^{1}$
Am-244m	$2{,}2.10^{6}$	$2{,}5.10^{6}$	$4{,}2.10^{6}$	$5{,}6.10^{6}$	$6{,}7.10^{6}$	$6{,}3.10^{6}$	6	$7{,}7.10^{2}$
Am-245	$2{,}4.10^{6}$	$3{,}6.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}5.10^{7}$	$1{,}8.10^{7}$	2	$1{,}9.10^{3}$
Am-246	$1{,}9.10^{6}$	$2{,}8.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}4.10^{7}$	2	$1{,}5.10^{3}$
Am-246m	$5{,}0.10^{6}$	$7{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}4.10^{7}$	$3{,}7.10^{7}$	$4{,}3.10^{7}$	2	$3{,}8.10^{3}$
Cm-238	$4{,}5.10^{4}$	$6{,}3.10^{4}$	$1{,}2.10^{5}$	$1{,}6.10^{5}$	$1{,}6.10^{5}$	$2{,}0.10^{5}$	5	$2{,}2{\cdot}10^{1}$
Cm-240	$7{,}7.10^{1}$	$1{,}0.10^{2}$	$1{,}6.10^{2}$	$2{,}2.10^{2}$	$2{,}3.10^{2}$	$2{,}9.10^{2}$	5	$3{,}2.10^{-2}$
Cm-241	$7{,}1.10^{3}$	$9{,}1.10^{3}$	$1{,}4.10^{4}$	$2{,}0.10^{4}$	$2{,}2.10^{4}$	$2{,}7.10^{4}$	5	$3{,}0.10^{0}$
Cm-242	$3{,}7.10^{1}$	$4{,}8.10^{1}$	$8{,}3.10^{1}$	$1{,}2.10^{2}$	$1{,}4.10^{2}$	$1{,}7.10^{2}$	5	$1{,}9.10^{-2}$
Cm-243	$6{,}3.10^{0}$	$6{,}7.10^{0}$	$1{,}1.10^{1}$	$1{,}4.10^{1}$	$1{,}5.10^{1}$	$1{,}4.10^{1}$	6	$1{,}8.10^{-3}$
Cm-244	$6{,}7.10^{0}$	$7{,}7.10^{0}$	$1{,}2.10^{1}$	$1{,}6.10^{1}$	$1{,}9.10^{1}$	$1{,}8.10^{1}$	6	$2{,}2.10^{-3}$
Cm-245	$5{,}3.10^{0}$	$5{,}6.10^{0}$	$8{,}3.10^{0}$	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}0.10^{1}$	6	$1{,}2.10^{-3}$

[3] For natural uranium (0,0055% U-234, 0,720% U-235 and 99,274% U-238):

Nuclide	LAI_{INH} for age groups, $g.a^{-1}$						Critical age group and $LAAVA_A$, $g.m^{-3}$	
	1	2	3	4	5	6		
natural uranium	$1{,}3.10^{-3}$	$1{,}5.10^{-3}$	$2{,}3.10^{-3}$	$3{,}6.10^{-3}$	$4{,}2.10^{-3}$	$4{,}5.10^{-3}$	6	$5{,}6.10^{-7}$

Nuclide	LAI_{INH} for age groups, $Bq.a^{-1}$						Critical age group and $LAAVA_A$, $Bq.m^{-3}$	
	1	2	3	4	5	6		
Cm-246	$5{,}3.10^{0}$	$5{,}6.10^{0}$	$8{,}3.10^{0}$	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}0.10^{1}$	6	$1{,}3.10^{-3}$
Cm-247	$5{,}9.10^{0}$	$6{,}3.10^{0}$	$9{,}1.10^{0}$	$1{,}1.10^{1}$	$1{,}2.10^{1}$	$1{,}1.10^{1}$	6	$1{,}4.10^{-3}$
Cm-248	$1{,}5.10^{0}$	$1{,}5.10^{0}$	$2{,}2.10^{0}$	$2{,}7.10^{0}$	$2{,}9.10^{0}$	$2{,}8.10^{0}$	6	$3{,}4.10^{-4}$
Cm-249	$4{,}2.10^{6}$	$6{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}7.10^{7}$	$2{,}5.10^{7}$	$2{,}5.10^{7}$	4	$3{,}1.10^{3}$
Cm-250	$2{,}6.10^{-1}$	$2{,}7.10^{-1}$	$3{,}8.10^{-1}$	$4{,}8.10^{-1}$	$5{,}0.10^{-1}$	$4{,}8.10^{-1}$	6	$5{,}9.10^{-5}$
Bk-245	$1{,}1.10^{5}$	$1{,}5.10^{5}$	$2{,}5.10^{5}$	$3{,}4.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	5	$5{,}3.10^{1}$
Bk-246	$4{,}8.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}5.10^{6}$	$3{,}0.10^{6}$	4	$3{,}0.10^{2}$
Bk-247	$6{,}7.10^{0}$	$6{,}7.10^{0}$	$5{,}9.10^{0}$	$1{,}3.10^{1}$	$1{,}4.10^{1}$	$1{,}4.10^{1}$	3	$1{,}8.10^{-3}$
Bk-249	$3{,}0.10^{3}$	$3{,}0.10^{3}$	$4{,}2.10^{3}$	$5{,}6.10^{3}$	$6{,}3.10^{3}$	$6{,}3.10^{3}$	6	$7{,}7.10^{-1}$
Bk-250	$2{,}9.10^{5}$	$3{,}2.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$9{,}1.10^{5}$	$1{,}0.10^{6}$	6	$1{,}2.10^{2}$
Cf-244	$1{,}3.10^{4}$	$1{,}9.10^{4}$	$3{,}6.10^{4}$	$5{,}0.10^{4}$	$6{,}3.10^{4}$	$7{,}1.10^{4}$	5	$8{,}6.10^{0}$
Cf-246	$5{,}9.10^{2}$	$7{,}7.10^{2}$	$1{,}2.10^{3}$	$1{,}6.10^{3}$	$1{,}8.10^{3}$	$2{,}2.10^{3}$	5	$2{,}4.10^{-1}$
Cf-248	$2{,}6.10^{1}$	$3{,}1.10^{1}$	$4{,}8.10^{1}$	$7{,}1.10^{1}$	$1{,}0.10^{2}$	$1{,}1.10^{2}$	4	$1{,}3.10^{-2}$
Cf-249	$6{,}3.10^{0}$	$6{,}7.10^{0}$	$9{,}1.10^{0}$	$1{,}3.10^{1}$	$1{,}4.10^{1}$	$1{,}4.10^{1}$	6	$1{,}8.10^{-3}$
Cf-250	$9{,}1.10^{0}$	$1{,}0.10^{1}$	$1{,}5.10^{1}$	$2{,}4.10^{1}$	$2{,}9.10^{1}$	$2{,}9.10^{1}$	6	$3{,}6.10^{-3}$
Cf-251	$6{,}3.10^{0}$	$6{,}7.10^{0}$	$9{,}1.10^{0}$	$1{,}2.10^{1}$	$1{,}4.10^{1}$	$1{,}4.10^{1}$	6	$1{,}7.10^{-3}$
Cf-252	$1{,}0.10^{1}$	$1{,}1.10^{1}$	$1{,}8.10^{1}$	$3{,}1.10^{1}$	$4{,}5.10^{1}$	$5{,}0.10^{1}$	3, 4	$5{,}6.10^{-3}$
Cf-253	$1{,}9.10^{2}$	$2{,}4.10^{2}$	$3{,}8.10^{2}$	$5{,}3.10^{2}$	$5{,}9.10^{2}$	$7{,}7.10^{2}$	5	$8{,}1.10^{-2}$
Cf-254	$4{,}0.10^{0}$	$5{,}3.10^{0}$	$9{,}1.10^{0}$	$1{,}4.10^{1}$	$2{,}1.10^{1}$	$2{,}4.10^{1}$	4	$2{,}6.10^{-3}$
Es-250	$5{,}0.10^{5}$	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	$1{,}6.10^{6}$	6	$2{,}0.10^{2}$
Es-251	$1{,}3.10^{5}$	$1{,}7.10^{5}$	$2{,}6.10^{5}$	$3{,}6.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	5	$5{,}3.10^{1}$
Es-253	$9{,}1.10^{1}$	$1{,}3.10^{2}$	$2{,}0.10^{2}$	$2{,}7.10^{2}$	$2{,}9.10^{2}$	$3{,}7.10^{2}$	5	$4{,}0.10^{-2}$
Es-254	$2{,}7.10^{1}$	$3{,}2.10^{1}$	$5{,}0.10^{1}$	$7{,}7.10^{1}$	$1{,}0.10^{2}$	$1{,}2.10^{2}$	5	$1{,}4.10^{-2}$
Es-254m	$5{,}9.10^{2}$	$7{,}7.10^{2}$	$1{,}2.10^{3}$	$1{,}6.10^{3}$	$1{,}7.10^{3}$	$2{,}1.10^{3}$	5	$2{,}3.10^{-1}$
Fm-252	$8{,}3.10^{2}$	$1{,}1.10^{3}$	$1{,}7.10^{3}$	$2{,}3.10^{3}$	$2{,}5.10^{3}$	$3{,}1.10^{3}$	5	$3{,}4.10^{-1}$
Fm-253	$6{,}7.10^{2}$	$8{,}3.10^{2}$	$1{,}4.10^{3}$	$1{,}9.10^{3}$	$2{,}0.10^{3}$	$2{,}5.10^{3}$	5	$2{,}7.10^{-1}$
Fm-254	$3{,}1.10^{3}$	$4{,}3.10^{3}$	$7{,}7.10^{3}$	$1{,}0.10^{4}$	$1{,}3.10^{4}$	$1{,}6.10^{4}$	5	$1{,}8.10^{0}$
Fm-255	$8{,}3.10^{2}$	$1{,}4.10^{3}$	$2{,}1.10^{3}$	$2{,}9.10^{3}$	$2{,}9.10^{3}$	$3{,}7.10^{3}$	5	$4{,}0.10^{-1}$
Fm-257	$3{,}0.10^{1}$	$3{,}8.10^{1}$	$6{,}3.10^{1}$	$9{,}1.10^{1}$	$1{,}1.10^{2}$	$1{,}4.10^{2}$	5	$1{,}6.10^{-2}$
Md-257	$1{,}0.10^{4}$	$1{,}2.10^{4}$	$2{,}0.10^{4}$	$2{,}8.10^{4}$	$3{,}2.10^{4}$	$4{,}0.10^{4}$	5	$4{,}4.10^{0}$
Md-258m	$4{,}2.10^{1}$	$5{,}3.10^{1}$	$8{,}3.10^{1}$	$1{,}2.10^{2}$	$1{,}4.10^{2}$	$1{,}7.10^{2}$	5	$1{,}9.10^{-2}$

[1)] The limit of the average annual volume activity ($Bq.m^{-3}$) for individual radionuclides for air (in outdoors and in dwellings) is defined as the relationship of the annual intake by inhalation for the six age groups and the volume of air inhaled for one year for the respective age group, and conservatively selecting the value of the ratio for this age group for which this ratio is the least.

Table No. 5

Secondary limits of annual intake by ingestion (LAI_{ING}) of individual radionuclides in the body of the members of the public (expected effective dose 1 $mSv.a^{-1}$) for six age groups and average annual activity of drinking water ($LAAA_{DW}$) (expected effective dose 0.1 $mSv.a^{-1}$) for a critical age group

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
H-3 (tritiated water)	$1{,}6.10^{7}$	$2{,}1.10^{7}$	$3{,}2.10^{7}$	$4{,}3.10^{7}$	$5{,}6.10^{7}$	$5{,}6.10^{7}$	6	$7{,}6.10^{3}$
H-3 (organic compounds)	$8{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	$2{,}4.10^{7}$	$2{,}4.10^{7}$	4	$3{,}2.10^{3}$
Be-7	$5{,}6.10^{6}$	$7{,}7.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$3{,}6.10^{7}$	2	$3{,}0.10^{3}$
Be-10	$7{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}4.10^{5}$	$4{,}2.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$4{,}8.10^{1}$
C-11	$3{,}8.10^{6}$	$6{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$3{,}3.10^{7}$	$4{,}3.10^{7}$	2	$2{,}6.10^{3}$
C-14	$7{,}1.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	$1{,}8.10^{6}$	$1{,}7.10^{6}$	4	$2{,}3.10^{2}$
F-18	$1{,}9.10^{6}$	$3{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}0.10^{7}$	2	$1{,}3.10^{3}$
Na-22	$4{,}8.10^{4}$	$6{,}7.10^{4}$	$1{,}2.10^{5}$	$1{,}8.10^{5}$	$2{,}7.10^{5}$	$3{,}1.10^{5}$	2	$2{,}6.10^{1}$
Na-24	$2{,}9.10^{5}$	$4{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$1{,}7.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Mg-28	$8{,}3.10^{4}$	$7{,}1.10^{4}$	$1{,}4.10^{5}$	$2{,}2.10^{5}$	$3{,}7.10^{5}$	$4{,}5.10^{5}$	2	$2{,}7.10^{1}$
Al-26	$2{,}9.10^{4}$	$4{,}8.10^{4}$	$9{,}1.10^{4}$	$1{,}4.10^{5}$	$2{,}3.10^{5}$	$2{,}9.10^{5}$	2	$1{,}8.10^{1}$
Si-31	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$3{,}3.10^{6}$	$5{,}6.10^{6}$	$6{,}3.10^{6}$	2	$3{,}8.10^{2}$
Si-32	$1{,}4.10^{5}$	$2{,}4.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}8.10^{6}$	2	$9{,}4.10^{1}$
P-32	$3{,}2.10^{4}$	$5{,}3.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$3{,}2.10^{5}$	$4{,}2.10^{5}$	2	$2{,}0.10^{1}$
P-33	$3{,}7.10^{5}$	$5{,}6.10^{5}$	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$3{,}2.10^{6}$	$4{,}2.10^{6}$	2	$2{,}1.10^{2}$
S-35 (inorganic)	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$2{,}3.10^{6}$	$3{,}7.10^{6}$	$6{,}3.10^{6}$	$7{,}7.10^{6}$	2	$4{,}4.10^{2}$
S-35 (organic)	$1{,}3.10^{5}$	$1{,}9.10^{5}$	$3{,}7.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}3.10^{6}$	2	$7{,}1.10^{1}$
Cl-36	$1{,}0.10^{5}$	$1{,}6.10^{5}$	$3{,}1.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	2	$6{,}1.10^{1}$
Cl-38	$7{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$5{,}0.10^{2}$
Cl-39	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$3{,}7.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$7{,}0.10^{2}$
K-40	$1{,}6.10^{4}$	$2{,}4.10^{4}$	$4{,}8.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$1{,}6.10^{5}$	2	$9{,}2.10^{0}$
K-42	$2{,}0.10^{5}$	$3{,}3.10^{5}$	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$1{,}3.10^{2}$
K-43	$4{,}3.10^{5}$	$7{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}1.10^{6}$	$3{,}3.10^{6}$	$4{,}0.10^{6}$	2	$2{,}7.10^{2}$
K-44	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$3{,}7.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$7{,}0.10^{2}$
K-45	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$5{,}9.10^{6}$	$1{,}0.10^{7}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}1.10^{3}$
Ca-41	$8{,}3.10^{5}$	$1{,}9.10^{6}$	$2{,}6.10^{6}$	$2{,}1.10^{6}$	$2{,}0.10^{6}$	$5{,}3.10^{6}$	5	$3{,}0.10^{2}$
Ca-45	$9{,}1.10^{4}$	$2{,}0.10^{5}$	$3{,}8.10^{5}$	$5{,}6.10^{5}$	$7{,}7.10^{5}$	$1{,}4.10^{6}$	2	$7{,}8.10^{1}$
Ca-47	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$2{,}0.10^{5}$	$3{,}3.10^{5}$	$5{,}6.10^{5}$	$6{,}3.10^{5}$	2	$4{,}1.10^{1}$
Sc-43	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}7.10^{6}$	$4{,}3.10^{6}$	$5{,}3.10^{6}$	2	$3{,}2.10^{2}$
Sc-44	$2{,}9.10^{5}$	$4{,}5.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}3.10^{6}$	$2{,}9.10^{6}$	2	$1{,}7.10^{2}$
Sc-44m	$4{,}2.10^{4}$	$6{,}3.10^{4}$	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$3{,}2.10^{5}$	$4{,}2.10^{5}$	2	$2{,}4.10^{1}$
Sc-46	$9{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}3.10^{5}$	$3{,}4.10^{5}$	$5{,}6.10^{5}$	$6{,}7.10^{5}$	2	$4{,}9.10^{1}$
Sc-47	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$9{,}9.10^{1}$
Sc-48	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$2{,}0.10^{5}$	$3{,}0.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$4{,}1.10^{1}$
Sc-49	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$3{,}6.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$6{,}7.10^{2}$
Ti-44	$1{,}8.10^{4}$	$3{,}2.10^{4}$	$5{,}9.10^{4}$	$9{,}1.10^{4}$	$1{,}4.10^{5}$	$1{,}7.10^{5}$	2	$1{,}2.10^{1}$
Ti-45	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$3{,}2.10^{6}$	$5{,}3.10^{6}$	$6{,}7.10^{6}$	2	$3{,}9.10^{2}$
V-47	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$5{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$9{,}4.10^{2}$
V-48	$6{,}7.10^{4}$	$9{,}1.10^{4}$	$1{,}7.10^{5}$	$2{,}6.10^{5}$	$4{,}0.10^{5}$	$5{,}0.10^{5}$	2	$3{,}5.10^{1}$
V-49	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$1{,}4.10^{7}$	$2{,}5.10^{7}$	$4{,}3.10^{7}$	$5{,}6.10^{7}$	2	$2{,}7.10^{3}$
Cr-48	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$2{,}6.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	2	$3{,}9.10^{2}$
Cr-49	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$5{,}0.10^{6}$	$9{,}1.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$9{,}9.10^{2}$
Cr-51	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$2{,}1.10^{7}$	$2{,}6.10^{7}$	2	$1{,}7.10^{3}$
Mn-51	$9{,}1.10^{5}$	$1{,}6.10^{6}$	$3{,}3.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$6{,}3.10^{2}$
Mn-52	$8{,}3.10^{4}$	$1{,}1.10^{5}$	$2{,}0.10^{5}$	$2{,}9.10^{5}$	$4{,}5.10^{5}$	$5{,}6.10^{5}$	2	$4{,}4.10^{1}$
Mn-52m	$1{,}3.10^{6}$	$2{,}3.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$8{,}7.10^{2}$
Mn-53	$2{,}4.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}7.10^{7}$	$3{,}3.10^{7}$	2	$1{,}7.10^{3}$
Mn-54	$1{,}9.10^{5}$	$3{,}2.10^{5}$	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$1{,}2.10^{2}$
Mn-56	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}1.10^{6}$	$4{,}0.10^{6}$	2	$2{,}3.10^{2}$
Fe-52	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$2{,}2.10^{5}$	$3{,}6.10^{5}$	$5{,}9.10^{5}$	$7{,}1.10^{5}$	2	$4{,}2.10^{1}$
Fe-55	$1{,}3.10^{5}$	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$3{,}0.10^{6}$	2	$1{,}6.10^{2}$
Fe-59	$2{,}6.10^{4}$	$7{,}7.10^{4}$	$1{,}3.10^{5}$	$2{,}1.10^{5}$	$3{,}2.10^{5}$	$5{,}6.10^{5}$	2	$3{,}0.10^{1}$
Fe-60	$1{,}3.10^{3}$	$3{,}7.10^{3}$	$3{,}7.10^{3}$	$4{,}0.10^{3}$	$4{,}3.10^{3}$	$9{,}1.10^{3}$	5	$6{,}6.10^{-1}$
Co-55	$1{,}7.10^{5}$	$1{,}8.10^{5}$	$3{,}4.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}0.10^{6}$	2	$7{,}0.10^{1}$
Co-56	$4{,}0.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}7.10^{5}$	$2{,}6.10^{5}$	$4{,}0.10^{5}$	2	$2{,}6.10^{1}$
Co-57	$3{,}4.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}7.10^{6}$	$4{,}8.10^{6}$	2	$2{,}4.10^{2}$
Co-58	$1{,}4.10^{5}$	$2{,}3.10^{5}$	$3{,}8.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	2	$8{,}7.10^{1}$
Co-58m	$5{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}3.10^{7}$	$2{,}1.10^{7}$	$3{,}6.10^{7}$	$4{,}2.10^{7}$	2	$2{,}6.10^{3}$
Co-60	$1{,}9.10^{4}$	$3{,}7.10^{4}$	$5{,}9.10^{4}$	$9{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}9.10^{5}$	2	$1{,}4.10^{1}$
Co-60m	$4{,}5.10^{7}$	$8{,}3.10^{7}$	$1{,}8.10^{8}$	$3{,}1.10^{8}$	$4{,}5.10^{8}$	$5{,}9.10^{8}$	2	$3{,}2.10^{4}$
Co-61	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$4{,}0.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$7{,}5.10^{2}$
Co-62m	$1{,}9.10^{6}$	$3{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}1.10^{7}$	2	$1{,}3.10^{3}$
Ni-56	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$4{,}3.10^{5}$	$6{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}2.10^{6}$	2	$9{,}6.10^{1}$
Ni-57	$1{,}5.10^{5}$	$2{,}0.10^{5}$	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$7{,}8.10^{1}$
Ni-59	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}6.10^{7}$	2	$1{,}1.10^{3}$
Ni-63	$6{,}3.10^{5}$	$1{,}2.10^{6}$	$2{,}2.10^{6}$	$3{,}6.10^{6}$	$5{,}6.10^{6}$	$6{,}7.10^{6}$	2	$4{,}6.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Ni-65	$4{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}6.10^{6}$	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$5{,}6.10^{6}$	2	$3{,}0.10^{2}$
Ni-66	$3{,}0.10^{4}$	$4{,}5.10^{4}$	$9{,}1.10^{4}$	$1{,}5.10^{5}$	$2{,}7.10^{5}$	$3{,}3.10^{5}$	2	$1{,}7.10^{1}$
Cu-60	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$9{,}2.10^{2}$
Cu-61	$1{,}4.10^{6}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$5{,}1.10^{2}$
Cu-64	$1{,}9.10^{6}$	$1{,}2.10^{6}$	$2{,}4.10^{6}$	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$4{,}6.10^{2}$
Cu-67	$4{,}8.10^{5}$	$4{,}2.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$2{,}9.10^{6}$	2	$1{,}6.10^{2}$
Zn-62	$2{,}4.10^{5}$	$1{,}5.10^{5}$	$3{,}0.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	2	$5{,}9.10^{1}$
Zn-63	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$3{,}8.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$7{,}4.10^{2}$
Zn-65	$2{,}8.10^{4}$	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}6.10^{5}$	$2{,}2.10^{5}$	$2{,}6.10^{5}$	2	$2{,}4.10^{1}$
Zn-69	$2{,}9.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}7.10^{7}$	$2{,}6.10^{7}$	$3{,}2.10^{7}$	2	$1{,}7.10^{3}$
Zn-69m	$7{,}7.10^{5}$	$4{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$3{,}0.10^{6}$	2	$1{,}7.10^{2}$
Zn-71m	$7{,}1.10^{5}$	$6{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}1.10^{6}$	$3{,}3.10^{6}$	$4{,}2.10^{6}$	2	$2{,}6.10^{2}$
Zn-72	$1{,}1.10^{5}$	$1{,}2.10^{5}$	$2{,}2.10^{5}$	$3{,}6.10^{5}$	$5{,}9.10^{5}$	$7{,}1.10^{5}$	2	$4{,}5.10^{1}$
Ga-65	$2{,}3.10^{6}$	$4{,}2.10^{6}$	$8{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}1.10^{7}$	$2{,}7.10^{7}$	2	$1{,}6.10^{3}$
Ga-66	$8{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}5.10^{5}$	$4{,}0.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	2	$4{,}9.10^{1}$
Ga-67	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}5.10^{6}$	$4{,}2.10^{6}$	$5{,}3.10^{6}$	2	$3{,}2.10^{2}$
Ga-68	$8{,}3.10^{5}$	$1{,}5.10^{6}$	$2{,}9.10^{6}$	$5{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$5{,}7.10^{2}$
Ga-70	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$1{,}0.10^{7}$	$1{,}7.10^{7}$	$2{,}5.10^{7}$	$3{,}2.10^{7}$	2	$1{,}7.10^{3}$
Ga-72	$1{,}0.10^{5}$	$1{,}5.10^{5}$	$2{,}8.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$5{,}7.10^{1}$
Ga-73	$3{,}3.10^{5}$	$5{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$3{,}0.10^{6}$	$3{,}8.10^{6}$	2	$2{,}0.10^{2}$
Ge-66	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$3{,}4.10^{6}$	$5{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$7{,}3.10^{2}$
Ge-67	$1{,}3.10^{6}$	$2{,}4.10^{6}$	$4{,}8.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$9{,}2.10^{2}$
Ge-68	$8{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}4.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$4{,}8.10^{1}$
Ge-69	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$3{,}3.10^{6}$	$4{,}2.10^{6}$	2	$3{,}0.10^{2}$
Ge-71	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$2{,}5.10^{7}$	$4{,}2.10^{7}$	$6{,}7.10^{7}$	$8{,}3.10^{7}$	2	$4{,}9.10^{3}$
Ge-75	$1{,}8.10^{6}$	$3{,}1.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}2.10^{7}$	2	$1{,}2.10^{3}$
Ge-77	$3{,}3.10^{5}$	$5{,}6.10^{5}$	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}4.10^{6}$	$3{,}0.10^{6}$	2	$2{,}1.10^{2}$
Ge-78	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$5{,}5.10^{2}$
As-69	$1{,}5.10^{6}$	$2{,}7.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}0.10^{3}$
As-70	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$2{,}4.10^{6}$	$4{,}0.10^{6}$	$5{,}9.10^{6}$	$7{,}7.10^{6}$	2	$4{,}9.10^{2}$
As-71	$3{,}6.10^{5}$	$3{,}6.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}2.10^{6}$	2	$1{,}4.10^{2}$
As-72	$9{,}1.10^{4}$	$8{,}3.10^{4}$	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$4{,}3.10^{5}$	$5{,}6.10^{5}$	2	$3{,}2.10^{1}$
As-73	$3{,}8.10^{5}$	$5{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$3{,}1.10^{6}$	$3{,}8.10^{6}$	2	$2{,}0.10^{2}$
As-74	$1{,}0.10^{5}$	$1{,}2.10^{5}$	$2{,}3.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$4{,}7.10^{1}$
As-76	$1{,}0.10^{5}$	$9{,}1.10^{4}$	$1{,}7.10^{5}$	$2{,}9.10^{5}$	$5{,}0.10^{5}$	$6{,}3.10^{5}$	2	$3{,}5.10^{1}$
As-77	$3{,}7.10^{5}$	$3{,}4.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$2{,}0.10^{6}$	$2{,}5.10^{6}$	2	$1{,}3.10^{2}$
As-78	$5{,}0.10^{5}$	$7{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$3{,}7.10^{6}$	$4{,}8.10^{6}$	2	$2{,}7.10^{2}$
Se-70	$1{,}0.10^{6}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$5{,}4.10^{2}$
Se-73	$6{,}3.10^{5}$	$7{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$4{,}8.10^{6}$	2	$2{,}7.10^{2}$
Se-73m	$3{,}8.10^{6}$	$5{,}6.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}9.10^{7}$	$3{,}6.10^{7}$	2	$2{,}1.10^{3}$
Se-75	$5{,}0.10^{4}$	$7{,}7.10^{4}$	$1{,}2.10^{5}$	$1{,}7.10^{5}$	$3{,}2.10^{5}$	$3{,}8.10^{5}$	2	$3{,}0.10^{1}$
Se-79	$2{,}4.10^{4}$	$3{,}6.10^{4}$	$5{,}3.10^{4}$	$7{,}1.10^{4}$	$2{,}4.10^{5}$	$3{,}4.10^{5}$	4	$1{,}3.10^{1}$
Se-81	$2{,}9.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$2{,}0.10^{7}$	$2{,}9.10^{7}$	$3{,}7.10^{7}$	2	$2{,}0.10^{3}$
Se-81m	$1{,}7.10^{6}$	$2{,}7.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}0.10^{3}$
Se-83	$2{,}2.10^{6}$	$3{,}4.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}1.10^{7}$	2	$1{,}3.10^{3}$
Br-74	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$3{,}8.10^{6}$	$6{,}7.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$7{,}4.10^{2}$
Br-74m	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$2{,}3.10^{6}$	$4{,}0.10^{6}$	$5{,}9.10^{6}$	$7{,}1.10^{6}$	2	$4{,}5.10^{2}$
Br-75	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$7{,}8.10^{2}$
Br-76	$2{,}4.10^{5}$	$3{,}7.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}2.10^{6}$	2	$1{,}4.10^{2}$
Br-77	$1{,}6.10^{6}$	$2{,}3.10^{6}$	$4{,}0.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}0.10^{7}$	2	$8{,}7.10^{2}$
Br-80	$2{,}6.10^{6}$	$4{,}8.10^{6}$	$1{,}0.10^{7}$	$1{,}7.10^{7}$	$2{,}6.10^{7}$	$3{,}2.10^{7}$	2	$1{,}8.10^{3}$
Br-80m	$7{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$4{,}8.10^{2}$
Br-82	$2{,}7.10^{5}$	$3{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$1{,}9.10^{6}$	2	$1{,}5.10^{2}$
Br-83	$1{,}9.10^{6}$	$3{,}3.10^{6}$	$7{,}1.10^{6}$	$1{,}2.10^{7}$	$1{,}8.10^{7}$	$2{,}3.10^{7}$	2	$1{,}3.10^{3}$
Br-84	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$3{,}6.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$6{,}6.10^{2}$
Rb-79	$1{,}8.10^{6}$	$3{,}1.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}0.10^{7}$	2	$1{,}2.10^{3}$
Rb-81	$1{,}9.10^{6}$	$3{,}1.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}2.10^{3}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Rb-81m	$9{,}1.10^{6}$	$1{,}6.10^{7}$	$3{,}2.10^{7}$	$5{,}6.10^{7}$	$8{,}3.10^{7}$	$1{,}0.10^{8}$	2	$6{,}2.10^{3}$
Rb-82m	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$4{,}5.10^{6}$	$6{,}7.10^{6}$	$7{,}7.10^{6}$	2	$6{,}5.10^{2}$
Rb-83	$9{,}1.10^{4}$	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$3{,}1.10^{5}$	$4{,}5.10^{5}$	$5{,}3.10^{5}$	2	$4{,}6.10^{1}$
Rb-84	$5{,}0.10^{4}$	$7{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}0.10^{5}$	$3{,}0.10^{5}$	$3{,}6.10^{5}$	2	$2{,}7.10^{1}$
Rb-86	$3{,}2.10^{4}$	$5{,}0.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$2{,}9.10^{5}$	$3{,}6.10^{5}$	2	$1{,}9.10^{1}$
Rb-87	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}9.10^{5}$	$3{,}2.10^{5}$	$5{,}6.10^{5}$	$6{,}7.10^{5}$	2	$3{,}8.10^{1}$
Rb-88	$9{,}1.10^{5}$	$1{,}6.10^{6}$	$3{,}3.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$6{,}2.10^{2}$
Rb-89	$1{,}9.10^{6}$	$3{,}3.10^{6}$	$6{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}7.10^{7}$	$2{,}1.10^{7}$	2	$1{,}3.10^{3}$
Sr-80	$2{,}7.10^{5}$	$4{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$2{,}4.10^{6}$	$2{,}9.10^{6}$	2	$1{,}7.10^{2}$
Sr-81	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$4{,}2.10^{6}$	$7{,}1.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$7{,}8.10^{2}$
Sr-82	$1{,}4.10^{4}$	$2{,}4.10^{4}$	$4{,}8.10^{4}$	$7{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}6.10^{5}$	2	$9{,}4.10^{0}$
Sr-83	$2{,}9.10^{5}$	$3{,}7.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}0.10^{6}$	2	$1{,}4.10^{2}$
Sr-85	$1{,}3.10^{5}$	$3{,}2.10^{5}$	$5{,}9.10^{5}$	$6{,}7.10^{5}$	$7{,}7.10^{5}$	$1{,}8.10^{6}$	5	$1{,}2.10^{2}$
Sr-85m	$2{,}2.10^{7}$	$3{,}3.10^{7}$	$5{,}9.10^{7}$	$9{,}1.10^{7}$	$1{,}3.10^{8}$	$1{,}6.10^{8}$	2	$1{,}3.10^{4}$
Sr-87m	$4{,}2.10^{6}$	$5{,}9.10^{6}$	$1{,}1.10^{7}$	$1{,}8.10^{7}$	$2{,}8.10^{7}$	$3{,}3.10^{7}$	2	$2{,}3.10^{3}$
Sr-89	$2{,}8.10^{4}$	$5{,}6.10^{4}$	$1{,}1.10^{5}$	$1{,}7.10^{5}$	$2{,}5.10^{5}$	$3{,}8.10^{5}$	2	$2{,}1.10^{1}$
Sr-90	$4{,}3.10^{3}$	$1{,}4.10^{4}$	$2{,}1.10^{4}$	$1{,}7.10^{4}$	$1{,}3.10^{4}$	$3{,}6.10^{4}$	5	$1{,}9.10^{0}$
Sr-91	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$4{,}8.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}5.10^{6}$	2	$9{,}6.10^{1}$
Sr-92	$2{,}9.10^{5}$	$3{,}7.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}1.10^{6}$	$2{,}3.10^{6}$	2	$1{,}4.10^{2}$
Y-86	$1{,}3.10^{5}$	$1{,}9.10^{5}$	$3{,}4.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}0.10^{6}$	2	$7{,}4.10^{1}$
Y-86m	$2{,}2.10^{6}$	$3{,}2.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}2.10^{3}$
Y-87	$2{,}2.10^{5}$	$3{,}1.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$1{,}8.10^{6}$	2	$1{,}2.10^{2}$
Y-88	$1{,}2.10^{5}$	$1{,}7.10^{5}$	$2{,}9.10^{5}$	$4{,}2.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$6{,}4.10^{1}$
Y-90	$3{,}2.10^{4}$	$5{,}0.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$3{,}0.10^{5}$	$3{,}7.10^{5}$	2	$1{,}9.10^{1}$
Y-90m	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}7.10^{6}$	$4{,}5.10^{6}$	$5{,}9.10^{6}$	2	$3{,}2.10^{2}$
Y-91	$3{,}6.10^{4}$	$5{,}6.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$3{,}4.10^{5}$	$4{,}2.10^{5}$	2	$2{,}1.10^{1}$
Y-91m	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$3{,}0.10^{7}$	$4{,}8.10^{7}$	$7{,}1.10^{7}$	$9{,}1.10^{7}$	2	$6{,}4.10^{3}$
Y-92	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$5{,}6.10^{5}$	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}0.10^{6}$	2	$1{,}1.10^{2}$
Y-93	$7{,}1.10^{4}$	$1{,}2.10^{5}$	$2{,}3.10^{5}$	$4{,}0.10^{5}$	$7{,}1.10^{5}$	$8{,}3.10^{5}$	2	$4{,}5.10^{1}$
Y-94	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$3{,}7.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$7{,}0.10^{2}$
Y-95	$1{,}8.10^{6}$	$3{,}2.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}2.10^{7}$	2	$1{,}2.10^{3}$
Zr-86	$1{,}4.10^{5}$	$2{,}1.10^{5}$	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}2.10^{6}$	2	$8{,}0.10^{1}$
Zr-88	$3{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}2.10^{6}$	2	$1{,}9.10^{2}$
Zr-89	$1{,}5.10^{5}$	$2{,}2.10^{5}$	$4{,}0.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	2	$8{,}5.10^{1}$
Zr-93	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$2{,}0.10^{6}$	$1{,}7.10^{6}$	$1{,}2.10^{6}$	$9{,}1.10^{5}$	6	$1{,}2.10^{2}$
Zr-95	$1{,}2.10^{5}$	$1{,}8.10^{5}$	$3{,}3.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	2	$6{,}9.10^{1}$
Zr-97	$4{,}5.10^{4}$	$7{,}1.10^{4}$	$1{,}4.10^{5}$	$2{,}3.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	2	$2{,}7.10^{1}$
Nb-88	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$1{,}0.10^{3}$
Nb-89	$3{,}3.10^{5}$	$5{,}0.10^{5}$	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$3{,}7.10^{6}$	2	$1{,}9.10^{2}$
Nb-89m	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$2{,}3.10^{6}$	$3{,}7.10^{6}$	$5{,}6.10^{6}$	$7{,}1.10^{6}$	2	$4{,}4.10^{2}$
Nb-90	$9{,}1.10^{4}$	$1{,}4.10^{5}$	$2{,}6.10^{5}$	$4{,}0.10^{5}$	$6{,}3.10^{5}$	$8{,}3.10^{5}$	2	$5{,}3.10^{1}$
Nb-93m	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$2{,}2.10^{6}$	$3{,}7.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$4{,}2.10^{2}$
Nb-94	$6{,}7.10^{4}$	$1{,}0.10^{5}$	$1{,}9.10^{5}$	$2{,}9.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$4{,}0.10^{1}$
Nb-95	$2{,}2.10^{5}$	$3{,}1.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$1{,}7.10^{6}$	2	$1{,}2.10^{2}$
Nb-95m	$1{,}6.10^{5}$	$2{,}4.10^{5}$	$4{,}8.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}8.10^{6}$	2	$9{,}4.10^{1}$
Nb-96	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}9.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$6{,}1.10^{1}$
Nb-97	$1{,}3.10^{6}$	$2{,}2.10^{6}$	$4{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}5.10^{7}$	2	$8{,}5.10^{2}$
Nb-98	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$5{,}4.10^{2}$
Mo-90	$5{,}9.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}5.10^{6}$	$3{,}7.10^{6}$	$4{,}5.10^{6}$	2	$3{,}2.10^{2}$
Mo-93	$1{,}3.10^{5}$	$1{,}4.10^{5}$	$2{,}0.10^{5}$	$2{,}5.10^{5}$	$2{,}9.10^{5}$	$3{,}2.10^{5}$	6	$4{,}4.10^{1}$
Mo-93m	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$3{,}2.10^{6}$	$5{,}0.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$7{,}1.10^{2}$
Mo-99	$1{,}8.10^{5}$	$2{,}9.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$1{,}7.10^{6}$	2	$1{,}1.10^{2}$
Mo-101	$2{,}1.10^{6}$	$3{,}7.10^{6}$	$7{,}7.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}4.10^{7}$	2	$1{,}4.10^{3}$
Tc-93	$3{,}7.10^{6}$	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}5.10^{7}$	$1{,}8.10^{7}$	2	$1{,}5.10^{3}$
Tc-93m	$5{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}2.10^{7}$	$3{,}1.10^{7}$	$4{,}0.10^{7}$	2	$3{,}0.10^{3}$
Tc-94	$8{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$2{,}7.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	2	$3{,}8.10^{2}$
Tc-94m	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$3{,}0.10^{6}$	$5{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$5{,}9.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Tc-95	$1,0.10^{6}$	$1,1.10^{6}$	$2,0.10^{6}$	$3,0.10^{6}$	$4,3.10^{6}$	$5,6.10^{6}$	2	$4,4.10^{2}$
Tc-95m	$2,1.10^{5}$	$3,6.10^{5}$	$6,3.10^{5}$	$1,0.10^{6}$	$1,4.10^{6}$	$1,8.10^{6}$	2	$1,4.10^{2}$
Tc-96	$1,5.10^{5}$	$2,0.10^{5}$	$3,3.10^{5}$	$5,0.10^{5}$	$7,1.10^{5}$	$9,1.10^{5}$	2	$7,5.10^{1}$
Tc-96m	$1,0.10^{7}$	$1,5.10^{7}$	$2,8.10^{7}$	$4,3.10^{7}$	$6,3.10^{7}$	$8,3.10^{7}$	2	$5,9.10^{3}$
Tc-97	$1,0.10^{6}$	$2,0.10^{6}$	$4,2.10^{6}$	$7,1.10^{6}$	$1,1.10^{7}$	$1,5.10^{7}$	2	$7,8.10^{2}$
Tc-97m	$1,1.10^{5}$	$2,4.10^{5}$	$5,0.10^{5}$	$9,1.10^{5}$	$1,4.10^{6}$	$1,8.10^{6}$	2	$9,4.10^{1}$
Tc-98	$4,3.10^{4}$	$8,3.10^{4}$	$1,6.10^{5}$	$2,7.10^{5}$	$4,0.10^{5}$	$5,0.10^{5}$	2	$3,2.10^{1}$
Tc-99	$1,0.10^{5}$	$2,1.10^{5}$	$4,3.10^{5}$	$7,7.10^{5}$	$1,2.10^{6}$	$1,6.10^{6}$	2	$8,0.10^{1}$
Tc-99m	$5,0.10^{6}$	$7,7.10^{6}$	$1,4.10^{7}$	$2,3.10^{7}$	$3,6.10^{7}$	$4,5.10^{7}$	2	$3,0.10^{3}$
Tc-101	$4,2.10^{6}$	$7,7.10^{6}$	$1,6.10^{7}$	$2,9.10^{7}$	$4,2.10^{7}$	$5,3.10^{7}$	2	$3,0.10^{3}$
Tc-104	$1,0.10^{6}$	$1,9.10^{6}$	$3,8.10^{6}$	$6,7.10^{6}$	$1,0.10^{7}$	$1,3.10^{7}$	2	$7,3.10^{2}$
Ru-94	$1,1.10^{6}$	$1,7.10^{6}$	$3,2.10^{6}$	$5,3.10^{6}$	$8,3.10^{6}$	$1,1.10^{7}$	2	$6,5.10^{2}$
Ru-97	$8,3.10^{5}$	$1,2.10^{6}$	$2,1.10^{6}$	$3,3.10^{6}$	$5,3.10^{6}$	$6,7.10^{6}$	2	$4,5.10^{2}$
Ru-103	$1,4.10^{5}$	$2,2.10^{5}$	$4,2.10^{5}$	$6,7.10^{5}$	$1,1.10^{6}$	$1,4.10^{6}$	2	$8,4.10^{1}$
Ru-105	$3,7.10^{5}$	$5,6.10^{5}$	$1,1.10^{6}$	$1,8.10^{6}$	$3,0.10^{6}$	$3,8.10^{6}$	2	$2,1.10^{2}$
Ru-106	$1,2.10^{4}$	$2,0.10^{4}$	$4,0.10^{4}$	$6,7.10^{4}$	$1,2.10^{5}$	$1,4.10^{5}$	2	$7,8.10^{0}$
Rh-99	$2,4.10^{5}$	$3,4.10^{5}$	$6,3.10^{5}$	$1,0.10^{6}$	$1,5.10^{6}$	$2,0.10^{6}$	2	$1,3.10^{2}$
Rh-99m	$2,0.10^{6}$	$2,9.10^{6}$	$5,0.10^{6}$	$7,7.10^{6}$	$1,2.10^{7}$	$1,5.10^{7}$	2	$1,1.10^{3}$
Rh-100	$2,0.10^{5}$	$2,8.10^{5}$	$5,0.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$1,4.10^{6}$	2	$1,1.10^{2}$
Rh-101	$2,0.10^{5}$	$3,6.10^{5}$	$6,3.10^{5}$	$1,0.10^{6}$	$1,5.10^{6}$	$1,8.10^{6}$	2	$1,4.10^{2}$
Rh-101m	$5,9.10^{5}$	$8,3.10^{5}$	$1,5.10^{6}$	$2,3.10^{6}$	$3,6.10^{6}$	$4,5.10^{6}$	2	$3,2.10^{2}$
Rh-102	$5,3.10^{4}$	$1,0.10^{5}$	$1,6.10^{5}$	$2,3.10^{5}$	$3,3.10^{5}$	$3,8.10^{5}$	2	$3,8.10^{1}$
Rh-102m	$8,3.10^{4}$	$1,4.10^{5}$	$2,6.10^{5}$	$4,2.10^{5}$	$7,1.10^{5}$	$8,3.10^{5}$	2	$5,2.10^{1}$
Rh-103m	$2,1.10^{7}$	$3,7.10^{7}$	$7,7.10^{7}$	$1,4.10^{8}$	$2,1.10^{8}$	$2,6.10^{8}$	2	$1,4.10^{4}$
Rh-105	$2,5.10^{5}$	$3,7.10^{5}$	$7,7.10^{5}$	$1,3.10^{6}$	$2,2.10^{6}$	$2,7.10^{6}$	2	$1,4.10^{2}$
Rh-106m	$7,1.10^{5}$	$1,0.10^{6}$	$1,9.10^{6}$	$3,0.10^{6}$	$5,0.10^{6}$	$6,3.10^{6}$	2	$4,0.10^{2}$
Rh-107	$3,4.10^{6}$	$6,3.10^{6}$	$1,3.10^{7}$	$2,2.10^{7}$	$3,2.10^{7}$	$4,2.10^{7}$	2	$2,4.10^{3}$
Pd-100	$1,4.10^{5}$	$1,9.10^{5}$	$3,4.10^{5}$	$5,3.10^{5}$	$8,3.10^{5}$	$1,1.10^{6}$	2	$7,4.10^{1}$
Pd-101	$1,2.10^{6}$	$1,8.10^{6}$	$3,2.10^{6}$	$5,3.10^{6}$	$8,3.10^{6}$	$1,1.10^{7}$	2	$6,7.10^{2}$
Pd-103	$4,5.10^{5}$	$7,1.10^{5}$	$1,4.10^{6}$	$2,3.10^{6}$	$4,2.10^{6}$	$5,3.10^{6}$	2	$2,7.10^{2}$
Pd-107	$2,3.10^{6}$	$3,6.10^{6}$	$7,1.10^{6}$	$1,2.10^{7}$	$2,2.10^{7}$	$2,7.10^{7}$	2	$1,4.10^{3}$
Pd-109	$1,6.10^{5}$	$2,4.10^{5}$	$5,0.10^{5}$	$8,3.10^{5}$	$1,5.10^{6}$	$1,8.10^{6}$	2	$9,4.10^{1}$
Ag-102	$2,4.10^{6}$	$4,2.10^{6}$	$8,3.10^{6}$	$1,4.10^{7}$	$2,0.10^{7}$	$2,5.10^{7}$	2	$1,6.10^{3}$
Ag-103	$2,2.10^{6}$	$3,7.10^{6}$	$7,1.10^{6}$	$1,2.10^{7}$	$1,8.10^{7}$	$2,3.10^{7}$	2	$1,4.10^{3}$
Ag-104	$2,3.10^{6}$	$3,4.10^{6}$	$5,9.10^{6}$	$9,1.10^{6}$	$1,3.10^{7}$	$1,7.10^{7}$	2	$1,3.10^{3}$
Ag-104m	$1,8.10^{6}$	$3,0.10^{6}$	$5,9.10^{6}$	$1,0.10^{7}$	$1,5.10^{7}$	$1,9.10^{7}$	2	$1,2.10^{3}$
Ag-105	$2,6.10^{5}$	$4,0.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$1,7.10^{6}$	$2,1.10^{6}$	2	$1,5.10^{2}$
Ag-106	$2,7.10^{6}$	$4,8.10^{6}$	$1,0.10^{7}$	$1,7.10^{7}$	$2,4.10^{7}$	$3,1.10^{7}$	2	$1,8.10^{3}$
Ag-106m	$1,0.10^{5}$	$1,4.10^{5}$	$2,4.10^{5}$	$3,6.10^{5}$	$5,6.10^{5}$	$6,7.10^{5}$	2	$5,6.10^{1}$
Ag-108m	$4,8.10^{4}$	$9,1.10^{4}$	$1,5.10^{5}$	$2,3.10^{5}$	$3,6.10^{5}$	$4,3.10^{5}$	2	$3,5.10^{1}$
Ag-110m	$4,2.10^{4}$	$7,1.10^{4}$	$1,3.10^{5}$	$1,9.10^{5}$	$2,9.10^{5}$	$3,6.10^{5}$	2	$2,7.10^{1}$
Ag-111	$7,1.10^{4}$	$1,1.10^{5}$	$2,2.10^{5}$	$3,7.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$4,1.10^{1}$
Ag-112	$2,0.10^{5}$	$3,3.10^{5}$	$6,7.10^{5}$	$1,1.10^{6}$	$1,9.10^{6}$	$2,3.10^{6}$	2	$1,3.10^{2}$
Ag-115	$1,4.10^{6}$	$2,4.10^{6}$	$5,0.10^{6}$	$8,3.10^{6}$	$1,3.10^{7}$	$1,7.10^{7}$	2	$9,4.10^{2}$
Cd-104	$2,4.10^{6}$	$3,4.10^{6}$	$5,9.10^{6}$	$9,1.10^{6}$	$1,4.10^{7}$	$1,9.10^{7}$	2	$1,3.10^{3}$
Cd-107	$1,4.10^{6}$	$2,2.10^{6}$	$4,3.10^{6}$	$7,7.10^{6}$	$1,3.10^{7}$	$1,6.10^{7}$	2	$8,4.10^{2}$
Cd-109	$4,8.10^{4}$	$1,1.10^{5}$	$1,8.10^{5}$	$2,9.10^{5}$	$4,2.10^{5}$	$5,0.10^{5}$	2	$4,0.10^{1}$
Cd-113	$1,0.10^{4}$	$2,1.10^{4}$	$2,7.10^{4}$	$3,3.10^{4}$	$3,8.10^{4}$	$4,0.10^{4}$	6	$5,5.10^{0}$
Cd-113m	$8,3.10^{3}$	$1,8.10^{4}$	$2,6.10^{4}$	$3,4.10^{4}$	$4,2.10^{4}$	$4,3.10^{4}$	6	$6,0.10^{0}$
Cd-115	$7,1.10^{4}$	$1,0.10^{5}$	$2,0.10^{5}$	$3,4.10^{5}$	$5,9.10^{5}$	$7,1.10^{5}$	2	$4,0.10^{1}$
Cd-115m	$2,4.10^{4}$	$5,3.10^{4}$	$1,0.10^{5}$	$1,4.10^{5}$	$2,4.10^{5}$	$3,0.10^{5}$	2	$2,0.10^{1}$
Cd-117	$3,4.10^{5}$	$5,3.10^{5}$	$1,1.10^{6}$	$1,8.10^{6}$	$2,9.10^{6}$	$3,6.10^{6}$	2	$2,0.10^{2}$
Cd-117m	$3,8.10^{5}$	$5,9.10^{5}$	$1,1.10^{6}$	$1,8.10^{6}$	$2,9.10^{6}$	$3,6.10^{6}$	2	$2,3.10^{2}$
In-109	$1,9.10^{6}$	$2,8.10^{6}$	$5,0.10^{6}$	$7,7.10^{6}$	$1,2.10^{7}$	$1,5.10^{7}$	2	$1,1.10^{3}$
In-110	$6,7.10^{5}$	$9,1.10^{5}$	$1,5.10^{6}$	$2,3.10^{6}$	$3,3.10^{6}$	$4,2.10^{6}$	2	$3,5.10^{2}$
In-110m	$9,1.10^{5}$	$1,6.10^{6}$	$3,1.10^{6}$	$5,3.10^{6}$	$7,7.10^{6}$	$1,0.10^{7}$	2	$6,0.10^{2}$
In-111	$4,2.10^{5}$	$5,9.10^{5}$	$1,1.10^{6}$	$1,7.10^{6}$	$2,7.10^{6}$	$3,4.10^{6}$	2	$2,3.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
In-112	$8{,}3.10^{6}$	$1{,}5.10^{7}$	$3{,}0.10^{7}$	$5{,}3.10^{7}$	$7{,}7.10^{7}$	$1{,}0.10^{8}$	2	$5{,}7.10^{3}$
In-113m	$3{,}3.10^{6}$	$5{,}6.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}8.10^{7}$	$3{,}6.10^{7}$	2	$2{,}1.10^{3}$
In-114m	$1{,}8.10^{4}$	$3{,}2.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$2{,}4.10^{5}$	2	$1{,}2.10^{1}$
In-115	$7{,}7.10^{3}$	$1{,}6.10^{4}$	$2{,}1.10^{4}$	$2{,}3.10^{4}$	$2{,}8.10^{4}$	$3{,}1.10^{4}$	5	$4{,}2.10^{0}$
In-115m	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$3{,}3.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$6{,}4.10^{2}$
In-116m	$1{,}7.10^{6}$	$2{,}8.10^{6}$	$5{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$1{,}1.10^{3}$
In-117	$3{,}0.10^{6}$	$5{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}7.10^{7}$	$2{,}6.10^{7}$	$3{,}2.10^{7}$	2	$2{,}0.10^{3}$
In-117m	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}3.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$8{,}3.10^{6}$	2	$4{,}5.10^{2}$
In-119m	$1{,}7.10^{6}$	$3{,}1.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}1.10^{7}$	2	$1{,}2.10^{3}$
Sn-110	$2{,}9.10^{5}$	$4{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}3.10^{6}$	$2{,}9.10^{6}$	2	$1{,}7.10^{2}$
Sn-111	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$3{,}3.10^{7}$	$4{,}3.10^{7}$	2	$2{,}6.10^{3}$
Sn-113	$1{,}3.10^{5}$	$2{,}0.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}7.10^{1}$
Sn-117m	$1{,}3.10^{5}$	$2{,}0.10^{5}$	$4{,}0.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}7.10^{1}$
Sn-119m	$2{,}4.10^{5}$	$4{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}3.10^{6}$	$2{,}9.10^{6}$	2	$1{,}5.10^{2}$
Sn-121	$3{,}8.10^{5}$	$5{,}9.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}6.10^{6}$	$4{,}3.10^{6}$	2	$2{,}3.10^{2}$
Sn-121m	$2{,}2.10^{5}$	$3{,}7.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}1.10^{6}$	$2{,}6.10^{6}$	2	$1{,}4.10^{2}$
Sn-123	$4{,}0.10^{4}$	$6{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}2.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	2	$2{,}4.10^{1}$
Sn-123m	$2{,}1.10^{6}$	$3{,}8.10^{6}$	$7{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}0.10^{7}$	$2{,}6.10^{7}$	2	$1{,}5.10^{3}$
Sn-125	$2{,}9.10^{4}$	$4{,}5.10^{4}$	$9{,}1.10^{4}$	$1{,}5.10^{5}$	$2{,}6.10^{5}$	$3{,}2.10^{5}$	2	$1{,}7.10^{1}$
Sn-126	$2{,}0.10^{4}$	$3{,}3.10^{4}$	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$2{,}1.10^{5}$	2	$1{,}3.10^{1}$
Sn-127	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$2{,}5.10^{6}$	$4{,}0.10^{6}$	$5{,}0.10^{6}$	2	$3{,}0.10^{2}$
Sn-128	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$2{,}0.10^{6}$	$3{,}3.10^{6}$	$5{,}3.10^{6}$	$6{,}7.10^{6}$	2	$4{,}0.10^{2}$
Sb-115	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}3.10^{7}$	$2{,}2.10^{7}$	$3{,}2.10^{7}$	$4{,}2.10^{7}$	2	$2{,}6.10^{3}$
Sb-116	$3{,}7.10^{6}$	$6{,}3.10^{6}$	$1{,}3.10^{7}$	$2{,}1.10^{7}$	$3{,}0.10^{7}$	$3{,}8.10^{7}$	2	$2{,}4.10^{3}$
Sb-116m	$2{,}0.10^{6}$	$3{,}0.10^{6}$	$5{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$1{,}2.10^{3}$
Sb-117	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}8.10^{7}$	$2{,}9.10^{7}$	$4{,}5.10^{7}$	$5{,}6.10^{7}$	2	$3{,}8.10^{3}$
Sb-118m	$7{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$2{,}6.10^{6}$	$3{,}8.10^{6}$	$4{,}8.10^{6}$	2	$3{,}8.10^{2}$
Sb-119	$1{,}2.10^{6}$	$1{,}7.10^{6}$	$3{,}3.10^{6}$	$5{,}6.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$6{,}6.10^{2}$
Sb-120m	$1{,}2.10^{5}$	$1{,}7.10^{5}$	$2{,}9.10^{5}$	$4{,}3.10^{5}$	$6{,}3.10^{5}$	$8{,}3.10^{5}$	2	$6{,}4.10^{1}$
Sb-120	$5{,}9.10^{6}$	$1{,}1.10^{7}$	$2{,}2.10^{7}$	$3{,}7.10^{7}$	$5{,}6.10^{7}$	$7{,}1.10^{7}$	2	$4{,}1.10^{3}$
Sb-122	$5{,}6.10^{4}$	$8{,}3.10^{4}$	$1{,}6.10^{5}$	$2{,}7.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$3{,}2.10^{1}$
Sb-124	$4{,}0.10^{4}$	$6{,}3.10^{4}$	$1{,}2.10^{5}$	$1{,}9.10^{5}$	$3{,}1.10^{5}$	$4{,}0.10^{5}$	2	$2{,}4.10^{1}$
Sb-124m	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$4{,}0.10^{7}$	$6{,}7.10^{7}$	$1{,}0.10^{8}$	$1{,}3.10^{8}$	2	$7{,}8.10^{3}$
Sb-125	$9{,}1.10^{4}$	$1{,}6.10^{5}$	$2{,}9.10^{5}$	$4{,}8.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$6{,}3.10^{1}$
Sb-126	$5{,}0.10^{4}$	$7{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}0.10^{5}$	$3{,}2.10^{5}$	$4{,}2.10^{5}$	2	$2{,}7.10^{1}$
Sb-126m	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}2.10^{7}$	$2{,}8.10^{7}$	2	$1{,}7.10^{3}$
Sb-127	$5{,}9.10^{4}$	$8{,}3.10^{4}$	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$3{,}2.10^{1}$
Sb-128	$1{,}6.10^{5}$	$2{,}2.10^{5}$	$4{,}2.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}3.10^{6}$	2	$8{,}5.10^{1}$
Sb-128m	$2{,}7.10^{6}$	$4{,}8.10^{6}$	$1{,}0.10^{7}$	$1{,}7.10^{7}$	$2{,}4.10^{7}$	$3{,}0.10^{7}$	2	$1{,}8.10^{3}$
Sb-129	$2{,}3.10^{5}$	$3{,}6.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	2	$1{,}4.10^{2}$
Sb-130	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$3{,}6.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$7{,}1.10^{2}$
Sb-131	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}6.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$1{,}0.10^{7}$	2	$5{,}3.10^{2}$
Te-116	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$2{,}9.10^{6}$	$4{,}8.10^{6}$	$5{,}9.10^{6}$	2	$3{,}8.10^{2}$
Te-121	$3{,}2.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$1{,}9.10^{2}$
Te-121m	$3{,}7.10^{4}$	$8{,}3.10^{4}$	$1{,}4.10^{5}$	$2{,}4.10^{5}$	$3{,}6.10^{5}$	$4{,}3.10^{5}$	2	$3{,}2.10^{1}$
Te-123	$5{,}0.10^{4}$	$1{,}1.10^{5}$	$1{,}4.10^{5}$	$1{,}9.10^{5}$	$2{,}1.10^{5}$	$2{,}3.10^{5}$	6	$3{,}1.10^{1}$
Te-123m	$5{,}3.10^{4}$	$1{,}1.10^{5}$	$2{,}0.10^{5}$	$3{,}6.10^{5}$	$5{,}9.10^{5}$	$7{,}1.10^{5}$	2	$4{,}4.10^{1}$
Te-125m	$7{,}7.10^{4}$	$1{,}6.10^{5}$	$3{,}0.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$6{,}1.10^{1}$
Te-127	$6{,}7.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}8.10^{6}$	$4{,}8.10^{6}$	$5{,}9.10^{6}$	2	$3{,}2.10^{2}$
Te-127m	$2{,}4.10^{4}$	$5{,}6.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$3{,}3.10^{5}$	$4{,}3.10^{5}$	2	$2{,}1.10^{1}$
Te-129	$1{,}3.10^{6}$	$2{,}3.10^{6}$	$4{,}8.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$8{,}7.10^{2}$
Te-129m	$2{,}3.10^{4}$	$4{,}2.10^{4}$	$8{,}3.10^{4}$	$1{,}5.10^{5}$	$2{,}6.10^{5}$	$3{,}3.10^{5}$	2	$1{,}6.10^{1}$
Te-131	$1{,}1.10^{6}$	$1{,}5.10^{6}$	$2{,}9.10^{6}$	$5{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$5{,}8.10^{2}$
Te-131m	$5{,}0.10^{4}$	$7{,}1.10^{4}$	$1{,}3.10^{5}$	$2{,}3.10^{5}$	$3{,}7.10^{5}$	$5{,}3.10^{5}$	2	$2{,}7.10^{1}$
Te-132	$2{,}1.10^{4}$	$3{,}3.10^{4}$	$6{,}3.10^{4}$	$1{,}2.10^{5}$	$1{,}9.10^{5}$	$2{,}6.10^{5}$	2	$1{,}3.10^{1}$
Te-133	$1{,}2.10^{6}$	$1{,}6.10^{6}$	$3{,}0.10^{6}$	$6{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	2	$6{,}1.10^{2}$
Te-133m	$3{,}2.10^{5}$	$4{,}2.10^{5}$	$7{,}7.10^{5}$	$1{,}6.10^{6}$	$2{,}4.10^{6}$	$3{,}6.10^{6}$	2	$1{,}6.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Te-134	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$5{,}1.10^{2}$
I-120	$2{,}6.10^{5}$	$3{,}6.10^{5}$	$7{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}1.10^{6}$	$2{,}9.10^{6}$	2	$1{,}4.10^{2}$
I-120m	$4{,}3.10^{5}$	$6{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}4.10^{6}$	$3{,}4.10^{6}$	$4{,}8.10^{6}$	2	$2{,}6.10^{2}$
I-121	$1{,}6.10^{6}$	$1{,}9.10^{6}$	$3{,}2.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}2.10^{7}$	2	$7{,}3.10^{2}$
I-123	$4{,}5.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$2{,}0.10^{6}$	$3{,}0.10^{6}$	$4{,}8.10^{6}$	2	$2{,}0.10^{2}$
I-124	$8{,}3.10^{3}$	$9{,}1.10^{3}$	$1{,}6.10^{4}$	$3{,}2.10^{4}$	$5{,}0.10^{4}$	$7{,}7.10^{4}$	2	$3{,}5.10^{0}$
I-125	$1{,}9.10^{4}$	$1{,}8.10^{4}$	$2{,}4.10^{4}$	$3{,}2.10^{4}$	$4{,}5.10^{4}$	$6{,}7.10^{4}$	4	$5{,}9.10^{0}$
I-126	$4{,}8.10^{3}$	$4{,}8.10^{3}$	$7{,}7.10^{3}$	$1{,}5.10^{4}$	$2{,}2.10^{4}$	$3{,}4.10^{4}$	2	$1{,}8.10^{0}$
I-128	$1{,}8.10^{6}$	$3{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}2.10^{7}$	2	$1{,}2.10^{3}$
I-129	$5{,}6.10^{3}$	$4{,}5.10^{3}$	$5{,}9.10^{3}$	$5{,}3.10^{3}$	$7{,}1.10^{3}$	$9{,}1.10^{3}$	4	$9{,}6.10^{-1}$
I-130	$4{,}8.10^{4}$	$5{,}6.10^{4}$	$1{,}0.10^{5}$	$2{,}2.10^{5}$	$3{,}3.10^{5}$	$5{,}0.10^{5}$	2	$2{,}1.10^{1}$
I-131	$5{,}6.10^{3}$	$5{,}6.10^{3}$	$1{,}0.10^{4}$	$1{,}9.10^{4}$	$2{,}9.10^{4}$	$4{,}5.10^{4}$	2	$2{,}1.10^{0}$
I-132	$3{,}3.10^{5}$	$4{,}2.10^{5}$	$7{,}7.10^{5}$	$1{,}6.10^{6}$	$2{,}4.10^{6}$	$3{,}4.10^{6}$	2	$1{,}6.10^{2}$
I-132m	$4{,}2.10^{5}$	$5{,}0.10^{5}$	$9{,}1.10^{5}$	$2{,}0.10^{6}$	$3{,}0.10^{6}$	$4{,}5.10^{6}$	2	$1{,}9.10^{2}$
I-133	$2{,}0.10^{4}$	$2{,}3.10^{4}$	$4{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}5.10^{5}$	$2{,}3.10^{5}$	2	$8{,}7.10^{0}$
I-134	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}8.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$5{,}1.10^{2}$
I-135	$1{,}0.10^{5}$	$1{,}1.10^{5}$	$2{,}1.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	2	$4{,}3.10^{1}$
Cs-125	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}3.10^{7}$	$2{,}9.10^{7}$	2	$1{,}7.10^{3}$
Cs-127	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}5.10^{7}$	$2{,}4.10^{7}$	$3{,}4.10^{7}$	$4{,}2.10^{7}$	2	$3{,}2.10^{3}$
Cs-129	$2{,}3.10^{6}$	$3{,}3.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}7.10^{7}$	2	$1{,}3.10^{3}$
Cs-130	$3{,}0.10^{6}$	$5{,}6.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$2{,}8.10^{7}$	$3{,}6.10^{7}$	2	$2{,}1.10^{3}$
Cs-131	$2{,}2.10^{6}$	$3{,}4.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}4.10^{7}$	$1{,}7.10^{7}$	2	$1{,}3.10^{3}$
Cs-132	$3{,}7.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}3.10^{6}$	$1{,}8.10^{6}$	$2{,}0.10^{6}$	2	$2{,}1.10^{2}$
Cs-134	$3{,}8.10^{4}$	$6{,}3.10^{4}$	$7{,}7.10^{4}$	$7{,}1.10^{4}$	$5{,}3.10^{4}$	$5{,}3.10^{4}$	6	$7{,}2.10^{0}$
Cs-134m	$4{,}8.10^{6}$	$8{,}3.10^{6}$	$1{,}7.10^{7}$	$2{,}9.10^{7}$	$4{,}0.10^{7}$	$5{,}0.10^{7}$	2	$3{,}2.10^{3}$
Cs-135	$2{,}4.10^{5}$	$4{,}3.10^{5}$	$5{,}9.10^{5}$	$5{,}9.10^{5}$	$5{,}0.10^{5}$	$5{,}0.10^{5}$	6	$6{,}8.10^{1}$
Cs-135m	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$3{,}1.10^{7}$	$4{,}3.10^{7}$	$5{,}3.10^{7}$	2	$4{,}5.10^{3}$
Cs-136	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}3.10^{5}$	$2{,}9.10^{5}$	$3{,}3.10^{5}$	2	$4{,}0.10^{1}$
Cs-137	$4{,}8.10^{4}$	$8{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}0.10^{5}$	$7{,}7.10^{4}$	$7{,}7.10^{4}$	6	$1{,}1.10^{1}$
Cs-138	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$3{,}4.10^{6}$	$5{,}9.10^{6}$	$8{,}3.10^{6}$	$1{,}1.10^{7}$	2	$6{,}5.10^{2}$
Ba-126	$3{,}7.10^{5}$	$5{,}9.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}2.10^{6}$	$3{,}8.10^{6}$	2	$2{,}3.10^{2}$
Ba-128	$5{,}0.10^{4}$	$5{,}9.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$3{,}3.10^{5}$	$3{,}7.10^{5}$	2	$2{,}3.10^{1}$
Ba-131	$2{,}4.10^{5}$	$3{,}8.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}2.10^{6}$	2	$1{,}5.10^{2}$
Ba-131m	$1{,}7.10^{7}$	$3{,}1.10^{7}$	$6{,}3.10^{7}$	$1{,}1.10^{8}$	$1{,}6.10^{8}$	$2{,}0.10^{8}$	2	$1{,}2.10^{4}$
Ba-133	$4{,}5.10^{4}$	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$2{,}2.10^{5}$	$1{,}4.10^{5}$	$6{,}7.10^{4}$	5	$2{,}1.10^{1}$
Ba-133m	$2{,}4.10^{5}$	$2{,}8.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$1{,}9.10^{6}$	2	$1{,}1.10^{2}$
Ba-135m	$3{,}0.10^{5}$	$3{,}4.10^{5}$	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$2{,}1.10^{6}$	$2{,}3.10^{6}$	2	$1{,}3.10^{2}$
Ba-139	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}4.10^{6}$	$4{,}2.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$4{,}6.10^{2}$
Ba-140	$3{,}1.10^{4}$	$5{,}6.10^{4}$	$1{,}1.10^{5}$	$1{,}7.10^{5}$	$2{,}7.10^{5}$	$3{,}8.10^{5}$	2	$2{,}1.10^{1}$
Ba-141	$1{,}3.10^{6}$	$2{,}1.10^{6}$	$4{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}4.10^{7}$	2	$8{,}2.10^{2}$
Ba-142	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}3.10^{7}$	$2{,}9.10^{7}$	2	$1{,}7.10^{3}$
La-131	$2{,}9.10^{6}$	$4{,}8.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}3.10^{7}$	$2{,}9.10^{7}$	2	$1{,}8.10^{3}$
La-132	$2{,}6.10^{5}$	$4{,}2.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}1.10^{6}$	$2{,}6.10^{6}$	2	$1{,}6.10^{2}$
La-135	$3{,}6.10^{6}$	$5{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}6.10^{7}$	$2{,}6.10^{7}$	$3{,}3.10^{7}$	2	$2{,}0.10^{3}$
La-137	$9{,}1.10^{5}$	$2{,}2.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$8{,}5.10^{2}$
La-138	$7{,}7.10^{4}$	$2{,}2.10^{5}$	$3{,}7.10^{5}$	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$9{,}1.10^{5}$	2	$8{,}4.10^{1}$
La-140	$5{,}0.10^{4}$	$7{,}7.10^{4}$	$1{,}5.10^{5}$	$2{,}4.10^{5}$	$4{,}0.10^{5}$	$5{,}0.10^{5}$	2	$3{,}0.10^{1}$
La-141	$2{,}3.10^{5}$	$3{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}2.10^{6}$	$2{,}8.10^{6}$	2	$1{,}5.10^{2}$
La-142	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$4{,}3.10^{6}$	$5{,}6.10^{6}$	2	$3{,}5.10^{2}$
La-143	$1{,}4.10^{6}$	$2{,}6.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$9{,}9.10^{2}$
Ce-134	$3{,}6.10^{4}$	$5{,}6.10^{4}$	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$3{,}1.10^{5}$	$4{,}0.10^{5}$	2	$2{,}1.10^{1}$
Ce-135	$1{,}4.10^{5}$	$2{,}1.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	2	$8{,}2.10^{1}$
Ce-137	$3{,}8.10^{6}$	$5{,}9.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$3{,}1.10^{7}$	$4{,}0.10^{7}$	2	$2{,}3.10^{3}$
Ce-137m	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$9{,}9.10^{1}$
Ce-139	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$3{,}8.10^{6}$	2	$2{,}4.10^{2}$
Ce-141	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$3{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}5.10^{1}$
Ce-143	$8{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}4.10^{5}$	$4{,}2.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$4{,}8.10^{1}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Ce-144	$1,5.10^{4}$	$2,6.10^{4}$	$5,3.10^{4}$	$9,1.10^{4}$	$1,5.10^{5}$	$1,9.10^{5}$	2	$9,9.10^{0}$
Pr-136	$2,7.10^{6}$	$4,8.10^{6}$	$1,0.10^{7}$	$1,6.10^{7}$	$2,4.10^{7}$	$3,0.10^{7}$	2	$1,8.10^{3}$
Pr-137	$2,4.10^{6}$	$4,0.10^{6}$	$7,7.10^{6}$	$1,3.10^{7}$	$2,0.10^{7}$	$2,5.10^{7}$	2	$1,5.10^{3}$
Pr-138m	$1,0.10^{6}$	$1,4.10^{6}$	$2,4.10^{6}$	$3,8.10^{6}$	$6,3.10^{6}$	$7,7.10^{6}$	2	$5,2.10^{2}$
Pr-139	$3,1.10^{6}$	$5,0.10^{6}$	$9,1.10^{6}$	$1,5.10^{7}$	$2,5.10^{7}$	$3,2.10^{7}$	2	$1,9.10^{3}$
Pr-142	$6,7.10^{4}$	$1,0.10^{5}$	$2,0.10^{5}$	$3,4.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$3,9.10^{1}$
Pr-142m	$5,0.10^{6}$	$8,3.10^{6}$	$1,6.10^{7}$	$2,7.10^{7}$	$4,8.10^{7}$	$5,9.10^{7}$	2	$3,2.10^{3}$
Pr-143	$7,1.10^{4}$	$1,1.10^{5}$	$2,3.10^{5}$	$3,8.10^{5}$	$6,7.10^{5}$	$8,3.10^{5}$	2	$4,4.10^{1}$
Pr-144	$1,6.10^{6}$	$2,9.10^{6}$	$5,9.10^{6}$	$1,1.10^{7}$	$1,5.10^{7}$	$2,0.10^{7}$	2	$1,1.10^{3}$
Pr-145	$2,1.10^{5}$	$3,4.10^{5}$	$7,1.10^{5}$	$1,2.10^{6}$	$2,0.10^{6}$	$2,6.10^{6}$	2	$1,3.10^{2}$
Pr-147	$2,6.10^{6}$	$4,5.10^{6}$	$9,1.10^{6}$	$1,6.10^{7}$	$2,4.10^{7}$	$3,0.10^{7}$	2	$1,7.10^{3}$
Nd-136	$1,0.10^{6}$	$1,6.10^{6}$	$3,2.10^{6}$	$5,3.10^{6}$	$8,3.10^{6}$	$1,0.10^{7}$	2	$6,3.10^{2}$
Nd-138	$1,4.10^{5}$	$2,2.10^{5}$	$4,3.10^{5}$	$7,7.10^{5}$	$1,3.10^{6}$	$1,6.10^{6}$	2	$8,5.10^{1}$
Nd-139	$4,8.10^{6}$	$8,3.10^{6}$	$1,6.10^{7}$	$2,7.10^{7}$	$4,0.10^{7}$	$5,0.10^{7}$	2	$3,2.10^{3}$
Nd-139m	$4,8.10^{5}$	$7,1.10^{5}$	$1,3.10^{6}$	$2,0.10^{6}$	$3,2.10^{6}$	$4,0.10^{6}$	2	$2,7.10^{2}$
Nd-141	$1,3.10^{7}$	$2,0.10^{7}$	$3,7.10^{7}$	$6,3.10^{7}$	$1,0.10^{8}$	$1,2.10^{8}$	2	$7,7.10^{3}$
Nd-147	$8,3.10^{4}$	$1,3.10^{5}$	$2,6.10^{5}$	$4,3.10^{5}$	$7,7.10^{5}$	$9,1.10^{5}$	2	$4,9.10^{1}$
Nd-149	$7,1.10^{5}$	$1,1.10^{6}$	$2,3.10^{6}$	$3,8.10^{6}$	$6,3.10^{6}$	$8,3.10^{6}$	2	$4,4.10^{2}$
Nd-151	$2,9.10^{6}$	$5,0.10^{6}$	$1,0.10^{7}$	$1,8.10^{7}$	$2,6.10^{7}$	$3,3.10^{7}$	2	$1,9.10^{3}$
Pm-141	$2,4.10^{6}$	$4,2.10^{6}$	$8,3.10^{6}$	$1,5.10^{7}$	$2,2.10^{7}$	$2,8.10^{7}$	2	$1,6.10^{3}$
Pm-143	$5,3.10^{5}$	$8,3.10^{5}$	$1,5.10^{6}$	$2,3.10^{6}$	$3,4.10^{6}$	$4,3.10^{6}$	2	$3,2.10^{2}$
Pm-144	$1,3.10^{5}$	$2,1.10^{5}$	$3,7.10^{5}$	$5,6.10^{5}$	$8,3.10^{5}$	$1,0.10^{6}$	2	$8,2.10^{1}$
Pm-145	$6,7.10^{5}$	$1,5.10^{6}$	$2,7.10^{6}$	$4,3.10^{6}$	$7,1.10^{6}$	$9,1.10^{6}$	2	$5,7.10^{2}$
Pm-146	$1,0.10^{5}$	$2,0.10^{5}$	$3,6.10^{5}$	$5,6.10^{5}$	$9,1.10^{5}$	$1,1.10^{6}$	2	$7,5.10^{1}$
Pm-147	$2,8.10^{5}$	$5,3.10^{5}$	$1,0.10^{6}$	$1,8.10^{6}$	$3,1.10^{6}$	$3,8.10^{6}$	2	$2,0.10^{2}$
Pm-148	$3,3.10^{4}$	$5,3.10^{4}$	$1,0.10^{5}$	$1,7.10^{5}$	$3,0.10^{5}$	$3,7.10^{5}$	2	$2,0.10^{1}$
Pm-148m	$6,7.10^{4}$	$1,0.10^{5}$	$1,8.10^{5}$	$2,9.10^{5}$	$4,5.10^{5}$	$5,9.10^{5}$	2	$3,8.10^{1}$
Pm-149	$8,3.10^{4}$	$1,4.10^{5}$	$2,7.10^{5}$	$4,5.10^{5}$	$8,3.10^{5}$	$1,0.10^{6}$	2	$5,2.10^{1}$
Pm-150	$3,6.10^{5}$	$5,9.10^{5}$	$1,1.10^{6}$	$1,9.10^{6}$	$3,1.10^{6}$	$3,8.10^{6}$	2	$2,3.10^{2}$
Pm-151	$1,3.10^{5}$	$2,0.10^{5}$	$3,8.10^{5}$	$6,3.10^{5}$	$1,1.10^{6}$	$1,4.10^{6}$	2	$7,5.10^{1}$
Sm-141	$2,2.10^{6}$	$4,0.10^{6}$	$7,7.10^{6}$	$1,4.10^{7}$	$2,0.10^{7}$	$2,6.10^{7}$	2	$1,5.10^{3}$
Sm-141m	$1,4.10^{6}$	$2,5.10^{6}$	$5,0.10^{6}$	$8,3.10^{6}$	$1,2.10^{7}$	$1,5.10^{7}$	2	$9,6.10^{2}$
Sm-142	$4,5.10^{5}$	$7,7.10^{5}$	$1,6.10^{6}$	$2,8.10^{6}$	$4,2.10^{6}$	$5,3.10^{6}$	2	$3,0.10^{2}$
Sm-145	$4,2.10^{5}$	$7,1.10^{5}$	$1,4.10^{6}$	$2,2.10^{6}$	$3,7.10^{6}$	$4,8.10^{6}$	2	$2,7.10^{2}$
Sm-146	$6,7.10^{2}$	$6,7.10^{3}$	$1,0.10^{4}$	$1,4.10^{4}$	$1,7.10^{4}$	$1,9.10^{4}$	6	$2,5.10^{0}$
Sm-147	$7,1.10^{2}$	$7,1.10^{3}$	$1,1.10^{4}$	$1,6.10^{4}$	$1,9.10^{4}$	$2,0.10^{4}$	2	$2,7.10^{0}$
Sm-151	$6,7.10^{5}$	$1,6.10^{6}$	$3,0.10^{6}$	$5,0.10^{6}$	$8,3.10^{6}$	$1,0.10^{7}$	2	$6,0.10^{2}$
Sm-153	$1,2.10^{5}$	$1,9.10^{5}$	$3,7.10^{5}$	$6,3.10^{5}$	$1,1.10^{6}$	$1,4.10^{6}$	2	$7,1.10^{1}$
Sm-155	$2,8.10^{6}$	$5,0.10^{6}$	$1,0.10^{7}$	$1,8.10^{7}$	$2,7.10^{7}$	$3,4.10^{7}$	2	$1,9.10^{3}$
Sm-156	$3,6.10^{5}$	$5,6.10^{5}$	$1,1.10^{6}$	$1,9.10^{6}$	$3,2.10^{6}$	$4,0.10^{6}$	2	$2,1.10^{2}$
Eu-145	$2,0.10^{5}$	$2,7.10^{5}$	$4,8.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$1,3.10^{6}$	2	$1,0.10^{2}$
Eu-146	$1,2.10^{5}$	$1,6.10^{5}$	$2,8.10^{5}$	$4,2.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$6,2.10^{1}$
Eu-147	$2,7.10^{5}$	$4,0.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$1,8.10^{6}$	$2,3.10^{6}$	2	$1,5.10^{2}$
Eu-148	$1,2.10^{5}$	$1,7.10^{5}$	$2,9.10^{5}$	$4,2.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$6,4.10^{1}$
Eu-149	$1,0.10^{6}$	$1,6.10^{6}$	$2,9.10^{6}$	$4,8.10^{6}$	$7,7.10^{6}$	$1,0.10^{7}$	2	$6,1.10^{2}$
Eu-150	$7,7.10^{4}$	$1,8.10^{5}$	$2,9.10^{5}$	$4,3.10^{5}$	$6,7.10^{5}$	$7,7.10^{5}$	2	$6,7.10^{1}$
Eu-150m	$2,3.10^{5}$	$3,6.10^{5}$	$7,1.10^{5}$	$1,2.10^{6}$	$2,1.10^{6}$	$2,6.10^{6}$	2	$1,4.10^{2}$
Eu-152	$6,3.10^{4}$	$1,4.10^{5}$	$2,4.10^{5}$	$3,8.10^{5}$	$5,9.10^{5}$	$7,1.10^{5}$	2	$5,2.10^{1}$
Eu-152m	$1,8.10^{5}$	$2,8.10^{5}$	$5,6.10^{5}$	$9,1.10^{5}$	$1,6.10^{6}$	$2,0.10^{6}$	2	$1,1.10^{2}$
Eu-154	$4,0.10^{4}$	$8,3.10^{4}$	$1,5.10^{5}$	$2,4.10^{5}$	$4,0.10^{5}$	$5,0.10^{5}$	2	$3,2.10^{1}$
Eu-155	$2,3.10^{5}$	$4,5.10^{5}$	$9,1.10^{5}$	$1,5.10^{6}$	$2,5.10^{6}$	$3,1.10^{6}$	2	$1,7.10^{2}$
Eu-156	$4,5.10^{4}$	$6,7.10^{4}$	$1,3.10^{5}$	$2,2.10^{5}$	$3,7.10^{5}$	$4,5.10^{5}$	2	$2,6.10^{1}$
Eu-157	$1,5.10^{5}$	$2,3.10^{5}$	$4,5.10^{5}$	$7,7.10^{5}$	$1,3.10^{6}$	$1,7.10^{6}$	2	$8,9.10^{1}$
Eu-158	$9,1.10^{5}$	$1,6.10^{6}$	$3,2.10^{6}$	$5,6.10^{6}$	$8,3.10^{6}$	$1,1.10^{7}$	2	$6,2.10^{2}$
Gd-145	$2,2.10^{6}$	$3,8.10^{6}$	$7,7.10^{6}$	$1,2.10^{7}$	$1,8.10^{7}$	$2,3.10^{7}$	2	$1,5.10^{3}$
Gd-146	$1,1.10^{5}$	$1,7.10^{5}$	$3,1.10^{5}$	$5,0.10^{5}$	$8,3.10^{5}$	$1,0.10^{6}$	2	$6,4.10^{1}$
Gd-147	$2,2.10^{5}$	$3,1.10^{5}$	$5,6.10^{5}$	$8,3.10^{5}$	$1,3.10^{6}$	$1,6.10^{6}$	2	$1,2.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Gd-148	$5{,}9.10^{2}$	$6{,}3.10^{3}$	$9{,}1.10^{3}$	$1{,}4.10^{4}$	$1{,}7.10^{4}$	$1{,}8.10^{4}$	2	$2{,}4.10^{0}$
Gd-149	$2{,}5.10^{5}$	$3{,}7.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}2.10^{6}$	2	$1{,}4.10^{2}$
Gd-151	$4{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$2{,}4.10^{6}$	$4{,}2.10^{6}$	$5{,}0.10^{6}$	2	$3{,}0.10^{2}$
Gd-152	$8{,}3.10^{2}$	$8{,}3.10^{3}$	$1{,}3.10^{4}$	$1{,}9.10^{4}$	$2{,}3.10^{4}$	$2{,}4.10^{4}$	2	$3{,}2.10^{0}$
Gd-153	$3{,}4.10^{5}$	$5{,}6.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$3{,}7.10^{6}$	2	$2{,}1.10^{2}$
Gd-159	$1{,}8.10^{5}$	$2{,}8.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}6.10^{6}$	$2{,}0.10^{6}$	2	$1{,}1.10^{2}$
Tb-147	$6{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$5{,}0.10^{6}$	$6{,}3.10^{6}$	2	$3{,}8.10^{2}$
Tb-149	$4{,}2.10^{5}$	$6{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}0.10^{6}$	$3{,}2.10^{6}$	$4{,}0.10^{6}$	2	$2{,}6.10^{2}$
Tb-150	$4{,}0.10^{5}$	$6{,}3.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}1.10^{6}$	$4{,}0.10^{6}$	2	$2{,}4.10^{2}$
Tb-151	$3{,}7.10^{5}$	$5{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}4.10^{6}$	$2{,}9.10^{6}$	2	$2{,}0.10^{2}$
Tb-153	$4{,}3.10^{5}$	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}2.10^{6}$	$4{,}0.10^{6}$	2	$2{,}6.10^{2}$
Tb-154	$2{,}1.10^{5}$	$2{,}9.10^{5}$	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	2	$1{,}1.10^{2}$
Tb-155	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$2{,}3.10^{6}$	$3{,}8.10^{6}$	$4{,}8.10^{6}$	2	$3{,}0.10^{2}$
Tb-156	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$2{,}9.10^{5}$	$4{,}3.10^{5}$	$6{,}7.10^{5}$	$8{,}3.10^{5}$	2	$6{,}1.10^{1}$
Tb-156m l	$6{,}7.10^{5}$	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$2{,}9.10^{6}$	$4{,}5.10^{6}$	$5{,}9.10^{6}$	2	$3{,}8.10^{2}$
Tb-156m s	$1{,}3.10^{6}$	$1{,}9.10^{6}$	$3{,}7.10^{6}$	$5{,}9.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$7{,}4.10^{2}$
Tb-157	$2{,}0.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$2{,}4.10^{7}$	$2{,}9.10^{7}$	2	$1{,}7.10^{3}$
Tb-158	$7{,}7.10^{4}$	$1{,}7.10^{5}$	$3{,}0.10^{5}$	$4{,}8.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$6{,}5.10^{1}$
Tb-160	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}9.10^{5}$	$3{,}0.10^{5}$	$5{,}0.10^{5}$	$6{,}3.10^{5}$	2	$3{,}8.10^{1}$
Tb-161	$1{,}2.10^{5}$	$1{,}9.10^{5}$	$3{,}7.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}3.10^{1}$
Dy-155	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$7{,}7.10^{6}$	2	$5{,}7.10^{2}$
Dy-157	$2{,}3.10^{6}$	$3{,}2.10^{6}$	$5{,}6.10^{6}$	$8{,}3.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$1{,}2.10^{3}$
Dy-159	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$4{,}8.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$6{,}0.10^{2}$
Dy-165	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$7{,}1.10^{6}$	$9{,}1.10^{6}$	2	$4{,}9.10^{2}$
Dy-166	$5{,}3.10^{4}$	$8{,}3.10^{4}$	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$5{,}0.10^{5}$	$6{,}3.10^{5}$	2	$3{,}2.10^{1}$
Ho-155	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$8{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}1.10^{7}$	$2{,}7.10^{7}$	2	$1{,}7.10^{3}$
Ho-157	$1{,}7.10^{7}$	$2{,}8.10^{7}$	$5{,}3.10^{7}$	$8{,}3.10^{7}$	$1{,}2.10^{8}$	$1{,}5.10^{8}$	2	$1{,}1.10^{4}$
Ho-159	$1{,}4.10^{7}$	$2{,}3.10^{7}$	$4{,}3.10^{7}$	$7{,}1.10^{7}$	$1{,}0.10^{8}$	$1{,}3.10^{8}$	2	$8{,}9.10^{3}$
Ho-161	$7{,}1.10^{6}$	$1{,}2.10^{7}$	$2{,}4.10^{7}$	$4{,}0.10^{7}$	$6{,}3.10^{7}$	$7{,}7.10^{7}$	2	$4{,}7.10^{3}$
Ho-162	$2{,}9.10^{7}$	$5{,}0.10^{7}$	$1{,}0.10^{8}$	$1{,}7.10^{8}$	$2{,}4.10^{8}$	$3{,}0.10^{8}$	2	$1{,}9.10^{4}$
Ho-162m	$4{,}2.10^{6}$	$6{,}7.10^{6}$	$1{,}3.10^{7}$	$2{,}0.10^{7}$	$3{,}0.10^{7}$	$3{,}8.10^{7}$	2	$2{,}6.10^{3}$
Ho-164	$8{,}3.10^{6}$	$1{,}5.10^{7}$	$3{,}1.10^{7}$	$5{,}6.10^{7}$	$8{,}3.10^{7}$	$1{,}1.10^{8}$	2	$5{,}9.10^{3}$
Ho-164m	$5{,}0.10^{6}$	$9{,}1.10^{6}$	$1{,}8.10^{7}$	$3{,}1.10^{7}$	$4{,}8.10^{7}$	$6{,}3.10^{7}$	2	$3{,}5.10^{3}$
Ho-166	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$1{,}9.10^{5}$	$3{,}2.10^{5}$	$5{,}9.10^{5}$	$7{,}1.10^{5}$	2	$3{,}8.10^{1}$
Ho-166m	$3{,}8.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$2{,}9.10^{5}$	$4{,}2.10^{5}$	$5{,}0.10^{5}$	2	$4{,}1.10^{1}$
Ho-167	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$3{,}6.10^{6}$	$5{,}9.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$7{,}0.10^{2}$
Er-161	$1{,}5.10^{6}$	$2{,}3.10^{6}$	$4{,}2.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$8{,}7.10^{2}$
Er-165	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}6.10^{7}$	$4{,}2.10^{7}$	$5{,}3.10^{7}$	2	$3{,}5.10^{3}$
Er-169	$2{,}3.10^{5}$	$3{,}6.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}1.10^{6}$	$2{,}7.10^{6}$	2	$1{,}4.10^{2}$
Er-171	$2{,}5.10^{5}$	$4{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}2.10^{6}$	$2{,}8.10^{6}$	2	$1{,}5.10^{2}$
Er-172	$1{,}0.10^{5}$	$1{,}5.10^{5}$	$2{,}9.10^{5}$	$4{,}8.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	2	$5{,}7.10^{1}$
Tm-162	$3{,}4.10^{6}$	$5{,}9.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$2{,}8.10^{7}$	$3{,}4.10^{7}$	2	$2{,}3.10^{3}$
Tm-166	$4{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}8.10^{6}$	$2{,}9.10^{6}$	$3{,}6.10^{6}$	2	$2{,}6.10^{2}$
Tm-167	$1{,}7.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}8.10^{6}$	2	$9{,}9.10^{1}$
Tm-170	$6{,}3.10^{4}$	$1{,}0.10^{5}$	$2{,}0.10^{5}$	$3{,}4.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$3{,}9.10^{1}$
Tm-171	$6{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}6.10^{6}$	$4{,}3.10^{6}$	$7{,}7.10^{6}$	$9{,}1.10^{6}$	2	$4{,}9.10^{2}$
Tm-172	$5{,}3.10^{4}$	$8{,}3.10^{4}$	$1{,}6.10^{5}$	$2{,}7.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$3{,}2.10^{1}$
Tm-173	$3{,}0.10^{5}$	$4{,}8.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$3{,}2.10^{6}$	2	$1{,}8.10^{2}$
Tm-175	$3{,}2.10^{6}$	$5{,}9.10^{6}$	$1{,}2.10^{7}$	$2{,}0.10^{7}$	$2{,}9.10^{7}$	$3{,}7.10^{7}$	2	$2{,}3.10^{3}$
Yb-162	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}4.10^{7}$	$2{,}4.10^{7}$	$3{,}4.10^{7}$	$4{,}3.10^{7}$	2	$3{,}0.10^{3}$
Yb-166	$1{,}3.10^{5}$	$1{,}9.10^{5}$	$3{,}4.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}1.10^{6}$	2	$7{,}1.10^{1}$
Yb-167	$1{,}4.10^{7}$	$2{,}4.10^{7}$	$4{,}8.10^{7}$	$8{,}3.10^{7}$	$1{,}2.10^{8}$	$1{,}5.10^{8}$	2	$9{,}4.10^{3}$
Yb-169	$1{,}4.10^{5}$	$2{,}2.10^{5}$	$4{,}2.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$8{,}4.10^{1}$
Yb-175	$2{,}0.10^{5}$	$3{,}1.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$1{,}2.10^{2}$
Yb-177	$1{,}0.10^{6}$	$1{,}5.10^{6}$	$2{,}9.10^{6}$	$5{,}0.10^{6}$	$9{,}1.10^{6}$	$1{,}1.10^{7}$	2	$5{,}7.10^{2}$
Yb-178	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$2{,}4.10^{6}$	$4{,}2.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$4{,}6.10^{2}$
Lu-169	$2{,}9.10^{5}$	$4{,}2.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}2.10^{6}$	2	$1{,}6.10^{2}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Lu-170	$1{,}4.10^{5}$	$1{,}9.10^{5}$	$3{,}4.10^{5}$	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}0.10^{6}$	2	$7{,}4.10^{1}$
Lu-171	$1{,}7.10^{5}$	$2{,}5.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	2	$9{,}6.10^{1}$
Lu-172	$1{,}0.10^{5}$	$1{,}4.10^{5}$	$2{,}6.10^{5}$	$4{,}0.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$5{,}5.10^{1}$
Lu-173	$3{,}7.10^{5}$	$6{,}3.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$3{,}1.10^{6}$	$3{,}8.10^{6}$	2	$2{,}4.10^{2}$
Lu-174	$3{,}1.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$3{,}0.10^{6}$	$3{,}7.10^{6}$	2	$2{,}3.10^{2}$
Lu-174m	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}0.10^{2}$
Lu-176	$4{,}2.10^{4}$	$9{,}1.10^{4}$	$1{,}9.10^{5}$	$2{,}9.10^{5}$	$4{,}5.10^{5}$	$5{,}6.10^{5}$	2	$3{,}5.10^{1}$
Lu-176m	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}7.10^{6}$	$2{,}9.10^{6}$	$4{,}8.10^{6}$	$5{,}9.10^{6}$	2	$3{,}2.10^{2}$
Lu-177	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$9{,}9.10^{1}$
Lu-177m	$5{,}9.10^{4}$	$9{,}1.10^{4}$	$1{,}7.10^{5}$	$2{,}8.10^{5}$	$4{,}8.10^{5}$	$5{,}9.10^{5}$	2	$3{,}5.10^{1}$
Lu-178	$1{,}7.10^{6}$	$3{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}6.10^{7}$	$2{,}1.10^{7}$	2	$1{,}2.10^{3}$
Lu-178m	$2{,}3.10^{6}$	$4{,}2.10^{6}$	$8{,}3.10^{6}$	$1{,}4.10^{7}$	$2{,}0.10^{7}$	$2{,}6.10^{7}$	2	$1{,}6.10^{3}$
Lu-179	$4{,}2.10^{5}$	$6{,}7.10^{5}$	$1{,}3.10^{6}$	$2{,}3.10^{6}$	$3{,}8.10^{6}$	$4{,}8.10^{6}$	2	$2{,}6.10^{2}$
Hf-170	$2{,}6.10^{5}$	$3{,}7.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}1.10^{6}$	2	$1{,}4.10^{2}$
Hf-172	$5{,}3.10^{4}$	$1{,}6.10^{5}$	$3{,}0.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	2	$6{,}3.10^{1}$
Hf-173	$5{,}3.10^{5}$	$7{,}7.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$3{,}6.10^{6}$	$4{,}3.10^{6}$	2	$3{,}0.10^{2}$
Hf-175	$2{,}6.10^{5}$	$4{,}2.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	2	$1{,}6.10^{2}$
Hf-177m	$1{,}3.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$6{,}7.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$8{,}2.10^{2}$
Hf-178m	$1{,}4.10^{4}$	$5{,}3.10^{4}$	$9{,}1.10^{4}$	$1{,}3.10^{5}$	$1{,}8.10^{5}$	$2{,}1.10^{5}$	2	$2{,}0.10^{1}$
Hf-179m	$8{,}3.10^{4}$	$1{,}3.10^{5}$	$2{,}4.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$8{,}3.10^{5}$	2	$4{,}9.10^{1}$
Hf-180m	$7{,}1.10^{5}$	$1{,}0.10^{6}$	$1{,}9.10^{6}$	$3{,}0.10^{6}$	$4{,}8.10^{6}$	$5{,}9.10^{6}$	2	$4{,}0.10^{2}$
Hf-181	$8{,}3.10^{4}$	$1{,}4.10^{5}$	$2{,}6.10^{5}$	$4{,}3.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$5{,}2.10^{1}$
Hf-182	$1{,}8.10^{4}$	$1{,}3.10^{5}$	$1{,}9.10^{5}$	$2{,}5.10^{5}$	$3{,}0.10^{5}$	$3{,}3.10^{5}$	4	$4{,}5.10^{1}$
Hf-182m	$2{,}4.10^{6}$	$4{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}3.10^{7}$	$1{,}9.10^{7}$	$2{,}4.10^{7}$	2	$1{,}5.10^{3}$
Hf-183	$1{,}2.10^{6}$	$2{,}1.10^{6}$	$4{,}2.10^{6}$	$7{,}1.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$8{,}0.10^{2}$
Hf-184	$1{,}8.10^{5}$	$2{,}8.10^{5}$	$5{,}6.10^{5}$	$9{,}1.10^{5}$	$1{,}5.10^{6}$	$1{,}9.10^{6}$	2	$1{,}1.10^{2}$
Ta-172	$1{,}8.10^{6}$	$3{,}1.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}2.10^{3}$
Ta-173	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$4{,}2.10^{6}$	$5{,}3.10^{6}$	2	$3{,}0.10^{2}$
Ta-174	$1{,}6.10^{6}$	$2{,}7.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}8.10^{7}$	2	$1{,}0.10^{3}$
Ta-175	$6{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}6.10^{6}$	$2{,}5.10^{6}$	$3{,}8.10^{6}$	$4{,}8.10^{6}$	2	$3{,}5.10^{2}$
Ta-176	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}6.10^{6}$	$2{,}6.10^{6}$	$3{,}2.10^{6}$	2	$2{,}3.10^{2}$
Ta-177	$1{,}0.10^{6}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$9{,}1.10^{6}$	2	$5{,}6.10^{2}$
Ta-178	$1{,}6.10^{6}$	$2{,}2.10^{6}$	$4{,}2.10^{6}$	$6{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$8{,}5.10^{2}$
Ta-179	$1{,}6.10^{6}$	$2{,}4.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$9{,}4.10^{2}$
Ta-180	$1{,}2.10^{5}$	$1{,}9.10^{5}$	$3{,}6.10^{5}$	$5{,}9.10^{5}$	$9{,}1.10^{5}$	$1{,}2.10^{6}$	2	$7{,}3.10^{1}$
Ta-180m	$1{,}7.10^{6}$	$2{,}7.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$1{,}0.10^{3}$
Ta-182	$7{,}1.10^{4}$	$1{,}1.10^{5}$	$2{,}0.10^{5}$	$3{,}2.10^{5}$	$5{,}3.10^{5}$	$6{,}7.10^{5}$	2	$4{,}1.10^{1}$
Ta-182m	$7{,}1.10^{6}$	$1{,}3.10^{7}$	$2{,}7.10^{7}$	$4{,}8.10^{7}$	$6{,}7.10^{7}$	$8{,}3.10^{7}$	2	$5{,}1.10^{3}$
Ta-183	$7{,}1.10^{4}$	$1{,}1.10^{5}$	$2{,}1.10^{5}$	$3{,}6.10^{5}$	$6{,}3.10^{5}$	$7{,}7.10^{5}$	2	$4{,}1.10^{1}$
Ta-184	$1{,}5.10^{5}$	$2{,}3.10^{5}$	$4{,}3.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$1{,}5.10^{6}$	2	$8{,}7.10^{1}$
Ta-185	$1{,}2.10^{6}$	$2{,}2.10^{6}$	$4{,}3.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	$1{,}5.10^{7}$	2	$8{,}4.10^{2}$
Ta-186	$2{,}6.10^{6}$	$4{,}8.10^{6}$	$9{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}4.10^{7}$	$3{,}0.10^{7}$	2	$1{,}8.10^{3}$
W-176	$1{,}5.10^{6}$	$1{,}8.10^{6}$	$3{,}3.10^{6}$	$5{,}0.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$7{,}0.10^{2}$
W-177	$2{,}3.10^{6}$	$3{,}1.10^{6}$	$5{,}9.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}7.10^{7}$	2	$1{,}2.10^{3}$
W-178	$5{,}6.10^{5}$	$7{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}2.10^{6}$	$3{,}7.10^{6}$	$4{,}5.10^{6}$	2	$2{,}7.10^{2}$
W-179	$2{,}9.10^{7}$	$5{,}0.10^{7}$	$1{,}0.10^{8}$	$1{,}6.10^{8}$	$2{,}4.10^{8}$	$3{,}0.10^{8}$	2	$1{,}9.10^{4}$
W-181	$1{,}6.10^{6}$	$2{,}1.10^{6}$	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}3.10^{7}$	2	$8{,}2.10^{2}$
W-185	$2{,}3.10^{5}$	$3{,}0.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}8.10^{6}$	$2{,}3.10^{6}$	2	$1{,}2.10^{2}$
W-187	$1{,}8.10^{5}$	$2{,}3.10^{5}$	$4{,}5.10^{5}$	$7{,}7.10^{5}$	$1{,}3.10^{6}$	$1{,}6.10^{6}$	2	$8{,}9.10^{1}$
W-188	$4{,}8.10^{4}$	$6{,}7.10^{4}$	$1{,}3.10^{5}$	$2{,}2.10^{5}$	$3{,}8.10^{5}$	$4{,}8.10^{5}$	2	$2{,}6.10^{1}$
Re-177	$4{,}0.10^{6}$	$7{,}1.10^{6}$	$1{,}4.10^{7}$	$2{,}4.10^{7}$	$3{,}6.10^{7}$	$4{,}5.10^{7}$	2	$2{,}7.10^{3}$
Re-178	$3{,}4.10^{6}$	$6{,}3.10^{6}$	$1{,}3.10^{7}$	$2{,}2.10^{7}$	$3{,}2.10^{7}$	$4{,}0.10^{7}$	2	$2{,}4.10^{3}$
Re-181	$2{,}4.10^{5}$	$3{,}6.10^{5}$	$7{,}1.10^{5}$	$1{,}2.10^{6}$	$1{,}9.10^{6}$	$2{,}4.10^{6}$	2	$1{,}4.10^{2}$
Re-182	$7{,}1.10^{4}$	$1{,}1.10^{5}$	$2{,}1.10^{5}$	$3{,}6.10^{5}$	$5{,}6.10^{5}$	$7{,}1.10^{5}$	2	$4{,}3.10^{1}$
Re-182m	$4{,}2.10^{5}$	$5{,}9.10^{5}$	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$2{,}9.10^{6}$	$3{,}7.10^{6}$	2	$2{,}3.10^{2}$
Re-184	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$3{,}3.10^{5}$	$5{,}6.10^{5}$	$7{,}7.10^{5}$	$1{,}0.10^{6}$	2	$6{,}9.10^{1}$
Re-184m	$5{,}9.10^{4}$	$1{,}0.10^{5}$	$2{,}0.10^{5}$	$3{,}6.10^{5}$	$5{,}3.10^{5}$	$6{,}7.10^{5}$	2	$3{,}9.10^{1}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Re-186	$5,3.10^4$	$9,1.10^4$	$1,8.10^5$	$3,3.10^5$	$5,3.10^5$	$6,7.10^5$	2	$3,5.10^1$
Re-186m	$3,3.10^4$	$6,3.10^4$	$1,3.10^5$	$2,3.10^5$	$3,6.10^5$	$4,5.10^5$	2	$2,4.10^1$
Re-187	$1,5.10^7$	$2,6.10^7$	$5,6.10^7$	$1,0.10^8$	$1,5.10^8$	$2,0.10^8$	2	$1,0.10^4$
Re-188	$5,9.10^4$	$9,1.10^4$	$1,9.10^5$	$3,4.10^5$	$5,6.10^5$	$7,1.10^5$	2	$3,5.10^1$
Re-188m	$2,6.10^6$	$4,3.10^6$	$9,1.10^6$	$1,6.10^7$	$2,5.10^7$	$3,3.10^7$	2	$1,7.10^3$
Re-189	$1,0.10^5$	$1,6.10^5$	$3,3.10^5$	$6,3.10^5$	$1,0.10^6$	$1,3.10^6$	2	$6,2.10^1$
Os-180	$6,3.10^6$	$1,0.10^7$	$2,0.10^7$	$3,1.10^7$	$4,5.10^7$	$5,9.10^7$	2	$3,9.10^3$
Os-181	$1,3.10^6$	$2,0.10^6$	$3,7.10^6$	$5,9.10^6$	$9,1.10^6$	$1,1.10^7$	2	$7,7.10^2$
Os-182	$2,2.10^5$	$3,1.10^5$	$5,9.10^5$	$9,1.10^5$	$1,4.10^6$	$1,8.10^6$	2	$1,2.10^2$
Os-185	$2,6.10^5$	$3,8.10^5$	$6,7.10^5$	$1,0.10^6$	$1,5.10^6$	$2,0.10^6$	2	$1,5.10^2$
Os-189m	$4,8.10^6$	$7,7.10^6$	$1,5.10^7$	$2,6.10^7$	$4,5.10^7$	$5,6.10^7$	2	$3,0.10^3$
Os-191	$1,6.10^5$	$2,4.10^5$	$4,8.10^5$	$8,3.10^5$	$1,4.10^6$	$1,8.10^6$	2	$9,4.10^1$
Os-191m	$9,1.10^5$	$1,4.10^6$	$2,9.10^6$	$4,8.10^6$	$8,3.10^6$	$1,0.10^7$	2	$5,4.10^2$
Os-193	$1,1.10^5$	$1,7.10^5$	$3,3.10^5$	$5,6.10^5$	$1,0.10^6$	$1,2.10^6$	2	$6,4.10^1$
Os-194	$3,4.10^4$	$5,9.10^4$	$1,1.10^5$	$1,9.10^5$	$3,3.10^5$	$4,2.10^5$	2	$2,3.10^1$
Ir-182	$1,9.10^6$	$3,3.10^6$	$6,7.10^6$	$1,1.10^7$	$1,7.10^7$	$2,1.10^7$	2	$1,3.10^3$
Ir-184	$6,7.10^5$	$1,0.10^6$	$1,9.10^6$	$3,0.10^6$	$4,8.10^6$	$5,9.10^6$	2	$4,0.10^2$
Ir-185	$4,2.10^5$	$6,3.10^5$	$1,2.10^6$	$1,9.10^6$	$3,0.10^6$	$3,8.10^6$	2	$2,4.10^2$
Ir-186	$2,6.10^5$	$3,7.10^5$	$6,7.10^5$	$1,0.10^6$	$1,6.10^6$	$2,0.10^6$	2	$1,4.10^2$
Ir-186m	$1,7.10^6$	$2,8.10^6$	$4,8.10^6$	$7,7.10^6$	$1,3.10^7$	$1,6.10^7$	2	$1,1.10^3$
Ir-187	$9,1.10^5$	$1,4.10^6$	$2,6.10^6$	$4,0.10^6$	$6,7.10^6$	$8,3.10^6$	2	$5,3.10^2$
Ir-188	$2,2.10^5$	$3,0.10^5$	$5,6.10^5$	$8,3.10^5$	$1,3.10^6$	$1,6.10^6$	2	$1,2.10^2$
Ir-189	$4,0.10^5$	$5,9.10^5$	$1,2.10^6$	$1,9.10^6$	$3,3.10^6$	$4,2.10^6$	2	$2,3.10^2$
Ir-190	$1,0.10^5$	$1,4.10^5$	$2,6.10^5$	$4,0.10^5$	$6,3.10^5$	$8,3.10^5$	2	$5,4.10^1$
Ir-190m l	$1,1.10^6$	$1,6.10^6$	$2,9.10^6$	$4,3.10^6$	$6,7.10^6$	$8,3.10^6$	2	$6,0.10^2$
Ir-190m s	$1,3.10^7$	$2,0.10^7$	$3,8.10^7$	$6,3.10^7$	$1,0.10^8$	$1,3.10^8$	2	$7,7.10^3$
Ir-192	$7,7.10^4$	$1,1.10^5$	$2,2.10^5$	$3,6.10^5$	$5,9.10^5$	$7,1.10^5$	2	$4,4.10^1$
Ir-192m	$3,6.10^5$	$7,1.10^5$	$1,2.10^6$	$1,8.10^6$	$2,7.10^6$	$3,2.10^6$	2	$2,7.10^2$
Ir-193m	$3,1.10^5$	$5,0.10^5$	$1,0.10^6$	$1,7.10^6$	$2,9.10^6$	$3,7.10^6$	2	$1,9.10^2$
Ir-194	$6,7.10^4$	$1,0.10^5$	$2,0.10^5$	$3,4.10^5$	$5,9.10^5$	$7,7.10^5$	2	$3,9.10^1$
Ir-194m	$5,9.10^4$	$9,1.10^4$	$1,6.10^5$	$2,4.10^5$	$3,8.10^5$	$4,8.10^5$	2	$3,5.10^1$
Ir-195	$8,3.10^5$	$1,4.10^6$	$2,8.10^6$	$4,8.10^6$	$7,7.10^6$	$1,0.10^7$	2	$5,3.10^2$
Ir-195m	$4,3.10^5$	$6,7.10^5$	$1,4.10^6$	$2,3.10^6$	$3,8.10^6$	$4,8.10^6$	2	$2,6.10^2$
Pt-186	$1,3.10^6$	$1,9.10^6$	$3,4.10^6$	$5,6.10^6$	$8,3.10^6$	$1,1.10^7$	2	$7,3.10^2$
Pt-188	$1,5.10^5$	$2,2.10^5$	$4,2.10^5$	$6,7.10^5$	$1,1.10^6$	$1,3.10^6$	2	$8,5.10^1$
Pt-189	$9,1.10^5$	$1,4.10^6$	$2,6.10^6$	$4,0.10^6$	$6,7.10^6$	$8,3.10^6$	2	$5,2.10^2$
Pt-191	$3,2.10^5$	$4,8.10^5$	$9,1.10^5$	$1,4.10^6$	$2,4.10^6$	$2,9.10^6$	2	$1,8.10^2$
Pt-193	$2,7.10^6$	$4,2.10^6$	$8,3.10^6$	$1,4.10^7$	$2,6.10^7$	$3,2.10^7$	2	$1,6.10^3$
Pt-193m	$1,9.10^5$	$2,9.10^5$	$5,9.10^5$	$1,0.10^6$	$1,8.10^6$	$2,2.10^6$	2	$1,1.10^2$
Pt-195m	$1,4.10^5$	$2,2.10^5$	$4,3.10^5$	$7,1.10^5$	$1,3.10^6$	$1,6.10^6$	2	$8,4.10^1$
Pt-197	$2,1.10^5$	$3,3.10^5$	$6,7.10^5$	$1,1.10^6$	$2,0.10^6$	$2,5.10^6$	2	$1,3.10^2$
Pt-197m	$1,0.10^6$	$1,6.10^6$	$3,3.10^6$	$5,6.10^6$	$9,1.10^6$	$1,2.10^7$	2	$6,3.10^2$
Pt-199	$2,1.10^6$	$3,7.10^6$	$7,7.10^6$	$1,3.10^7$	$2,0.10^7$	$2,6.10^7$	2	$1,4.10^3$
Pt-200	$7,1.10^4$	$1,1.10^5$	$2,3.10^5$	$3,8.10^5$	$6,7.10^5$	$8,3.10^5$	2	$4,4.10^1$
Au-193	$8,3.10^5$	$1,1.10^6$	$2,2.10^6$	$3,6.10^6$	$5,9.10^6$	$7,7.10^6$	2	$4,4.10^2$
Au-194	$3,4.10^5$	$4,5.10^5$	$8,3.10^5$	$1,2.10^6$	$1,9.10^6$	$2,4.10^6$	2	$1,7.10^2$
Au-195	$4,2.10^5$	$5,9.10^5$	$1,1.10^6$	$1,9.10^6$	$3,1.10^6$	$4,0.10^6$	2	$2,3.10^2$
Au-198	$1,0.10^5$	$1,4.10^5$	$2,7.10^5$	$4,5.10^5$	$7,7.10^5$	$1,0.10^6$	2	$5,3.10^1$
Au-198m	$8,3.10^4$	$1,2.10^5$	$2,3.10^5$	$3,7.10^5$	$6,3.10^5$	$7,7.10^5$	2	$4,5.10^1$
Au-199	$2,2.10^5$	$3,2.10^5$	$6,3.10^5$	$1,1.10^6$	$1,8.10^6$	$2,3.10^6$	2	$1,2.10^2$
Au-200	$1,2.10^6$	$2,1.10^6$	$4,3.10^6$	$7,7.10^6$	$1,1.10^7$	$1,5.10^7$	2	$8,2.10^2$
Au-200m	$1,1.10^5$	$1,5.10^5$	$2,9.10^5$	$4,5.10^5$	$7,7.10^5$	$9,1.10^5$	2	$5,8.10^1$
Au-201	$3,2.10^6$	$5,9.10^6$	$1,2.10^7$	$2,2.10^7$	$3,2.10^7$	$4,2.10^7$	2	$2,3.10^3$
Hg-193 (organic)	$2,1.10^6$	$2,3.10^6$	$4,5.10^6$	$7,1.10^6$	$1,2.10^7$	$1,5.10^7$	2	$8,7.10^2$
Hg-193 (inorganic)	$1,2.10^6$	$1,8.10^6$	$3,6.10^6$	$5,9.10^6$	$1,0.10^7$	$1,2.10^7$	2	$7,0.10^2$
Hg-193m (organic)	$6,3.10^5$	$5,6.10^5$	$1,1.10^6$	$1,7.10^6$	$2,7.10^6$	$3,3.10^6$	2	$2,1.10^2$
Hg-193m (inorganic)	$2,8.10^5$	$4,2.10^5$	$7,7.10^5$	$1,2.10^6$	$2,0.10^6$	$2,5.10^6$	2	$1,6.10^2$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Hg-194 (organic)	$7,7.10^{3}$	$8,3.10^{3}$	$1,2.10^{4}$	$1,5.10^{4}$	$1,8.10^{4}$	$2,0.10^{4}$	6	$2,7.10^{0}$
Hg-194 (inorganic)	$1,4.10^{5}$	$2,8.10^{5}$	$3,8.10^{5}$	$5,3.10^{5}$	$6,7.10^{5}$	$7,1.10^{5}$	4	$9,6.10^{1}$
Hg-195 (organic)	$2,2.10^{6}$	$2,1.10^{6}$	$4,0.10^{6}$	$6,7.10^{6}$	$1,1.10^{7}$	$1,3.10^{7}$	2	$8,0.10^{2}$
Hg-195 (inorganic)	$1,1.10^{6}$	$1,6.10^{6}$	$3,0.10^{6}$	$5,0.10^{6}$	$8,3.10^{6}$	$1,0.10^{7}$	2	$6,1.10^{2}$
Hg-195m (organic)	$3,8.10^{5}$	$3,6.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$2,0.10^{6}$	$2,4.10^{6}$	2	$1,4.10^{2}$
Hg-195m (inorganic)	$1,7.10^{5}$	$2,6.10^{5}$	$5,0.10^{5}$	$8,3.10^{5}$	$1,4.10^{6}$	$1,8.10^{6}$	2	$1,0.10^{2}$
Hg-197 (organic)	$7,7.10^{5}$	$8,3.10^{5}$	$1,6.10^{6}$	$2,7.10^{6}$	$4,5.10^{6}$	$5,9.10^{6}$	2	$3,2.10^{2}$
Hg-197 (inorganic)	$4,0.10^{5}$	$6,3.10^{5}$	$1,2.10^{6}$	$2,0.10^{6}$	$3,4.10^{6}$	$4,3.10^{6}$	2	$2,4.10^{2}$
Hg-197m (organic)	$4,5.10^{5}$	$4,0.10^{5}$	$8,3.10^{5}$	$1,4.10^{6}$	$2,4.10^{6}$	$2,9.10^{6}$	2	$1,5.10^{2}$
Hg-197m (inorganic)	$1,9.10^{5}$	$2,9.10^{5}$	$5,9.10^{5}$	$1,0.10^{6}$	$1,7.10^{6}$	$2,1.10^{6}$	2	$1,1.10^{2}$
Hg-199m (organic)	$2,8.10^{6}$	$4,8.10^{6}$	$1,0.10^{7}$	$1,6.10^{7}$	$2,6.10^{7}$	$3,2.10^{7}$	2	$1,8.10^{3}$
Hg-199m (inorganic)	$2,7.10^{6}$	$4,8.10^{6}$	$1,0.10^{7}$	$1,7.10^{7}$	$2,6.10^{7}$	$3,2.10^{7}$	2	$1,8.10^{3}$
Hg-203 (organic)	$6,7.10^{4}$	$9,1.10^{4}$	$1,8.10^{5}$	$2,8.10^{5}$	$4,3.10^{5}$	$5,3.10^{5}$	2	$3,5.10^{1}$
Hg-203 (inorganic)	$1,8.10^{5}$	$2,8.10^{5}$	$5,6.10^{5}$	$9,1.10^{5}$	$1,5.10^{6}$	$1,9.10^{6}$	2	$1,1.10^{2}$
Tl-194	$1,6.10^{7}$	$2,6.10^{7}$	$4,5.10^{7}$	$7,1.10^{7}$	$1,0.10^{8}$	$1,2.10^{8}$	2	$9,9.10^{3}$
Tl-194m	$2,6.10^{6}$	$4,5.10^{6}$	$8,3.10^{6}$	$1,4.10^{7}$	$2,0.10^{7}$	$2,5.10^{7}$	2	$1,7.10^{3}$
Tl-195	$4,3.10^{6}$	$7,1.10^{6}$	$1,3.10^{7}$	$2,1.10^{7}$	$3,0.10^{7}$	$3,7.10^{7}$	2	$2,7.10^{3}$
Tl-197	$4,8.10^{6}$	$7,7.10^{6}$	$1,5.10^{7}$	$2,4.10^{7}$	$3,6.10^{7}$	$4,3.10^{7}$	2	$3,0.10^{3}$
Tl-198	$2,1.10^{6}$	$3,0.10^{6}$	$5,3.10^{6}$	$8,3.10^{6}$	$1,1.10^{7}$	$1,4.10^{7}$	2	$1,2.10^{3}$
Tl-198m	$2,1.10^{6}$	$3,3.10^{6}$	$6,3.10^{6}$	$1,0.10^{7}$	$1,5.10^{7}$	$1,9.10^{7}$	2	$1,3.10^{3}$
Tl-199	$4,3.10^{6}$	$6,7.10^{6}$	$1,3.10^{7}$	$2,1.10^{7}$	$3,1.10^{7}$	$3,8.10^{7}$	2	$2,6.10^{3}$
Tl-200	$7,7.10^{5}$	$1,1.10^{6}$	$1,9.10^{6}$	$2,9.10^{6}$	$4,2.10^{6}$	$5,0.10^{6}$	2	$4,2.10^{2}$
Tl-201	$1,2.10^{6}$	$1,8.10^{6}$	$3,4.10^{6}$	$5,6.10^{6}$	$8,3.10^{6}$	$1,1.10^{7}$	2	$7,0.10^{2}$
Tl-202	$3,4.10^{5}$	$4,8.10^{5}$	$8,3.10^{5}$	$1,3.10^{6}$	$1,9.10^{6}$	$2,2.10^{6}$	2	$1,8.10^{2}$
Tl-204	$7,7.10^{4}$	$1,2.10^{5}$	$2,4.10^{5}$	$4,0.10^{5}$	$6,7.10^{5}$	$8,3.10^{5}$	2	$4,5.10^{1}$
Pb-195m	$3,8.10^{6}$	$6,3.10^{6}$	$1,2.10^{7}$	$1,9.10^{7}$	$2,9.10^{7}$	$3,4.10^{7}$	2	$2,4.10^{3}$
Pb-198	$1,7.10^{6}$	$2,1.10^{6}$	$3,7.10^{6}$	$5,9.10^{6}$	$9,1.10^{6}$	$1,0.10^{7}$	2	$8,0.10^{2}$
Pb-199	$2,9.10^{6}$	$3,8.10^{6}$	$6,7.10^{6}$	$1,1.10^{7}$	$1,6.10^{7}$	$1,9.10^{7}$	2	$1,5.10^{3}$
Pb-200	$4,0.10^{5}$	$5,0.10^{5}$	$9,1.10^{5}$	$1,4.10^{6}$	$2,3.10^{6}$	$2,5.10^{6}$	2	$1,9.10^{2}$
Pb-201	$1,1.10^{6}$	$1,3.10^{6}$	$2,3.10^{6}$	$3,7.10^{6}$	$5,6.10^{6}$	$6,3.10^{6}$	2	$4,9.10^{2}$
Pb-202	$2,9.10^{4}$	$6,3.10^{4}$	$7,7.10^{4}$	$5,3.10^{4}$	$3,7.10^{4}$	$1,1.10^{5}$	5	$5,6.10^{0}$
Pb-202m	$1,3.10^{6}$	$1,6.10^{6}$	$2,9.10^{6}$	$4,3.10^{6}$	$6,7.10^{6}$	$7,7.10^{6}$	2	$6,3.10^{2}$
Pb-203	$6,3.10^{5}$	$7,7.10^{5}$	$1,5.10^{6}$	$2,3.10^{6}$	$3,7.10^{6}$	$4,2.10^{6}$	2	$3,0.10^{2}$
Pb-205	$4,8.10^{5}$	$1,0.10^{6}$	$1,6.10^{6}$	$1,6.10^{6}$	$1,5.10^{6}$	$3,6.10^{6}$	5	$2,3.10^{2}$
Pb-209	$1,8.10^{6}$	$2,6.10^{6}$	$5,3.10^{6}$	$9,1.10^{6}$	$1,5.10^{7}$	$1,8.10^{7}$	2	$1,0.10^{3}$
Pb-210	$1,2.10^{2}$	$2,8.10^{2}$	$4,5.10^{2}$	$5,3.10^{2}$	$5,3.10^{2}$	$1,4.10^{3}$	5	$8,0.10^{-2}$
Pb-211	$3,2.10^{5}$	$7,1.10^{5}$	$1,4.10^{6}$	$2,4.10^{6}$	$3,7.10^{6}$	$5,6.10^{6}$	2	$2,7.10^{2}$
Pb-212	$6,7.10^{3}$	$1,6.10^{4}$	$3,0.10^{4}$	$5,0.10^{4}$	$7,7.10^{4}$	$1,7.10^{5}$	2	$6,1.10^{0}$
Pb-214	$3,7.10^{5}$	$1,0.10^{6}$	$1,9.10^{6}$	$3,2.10^{6}$	$5,0.10^{6}$	$7,1.10^{6}$	2	$3,8.10^{2}$
Bi-200	$2,4.10^{6}$	$3,7.10^{6}$	$6,7.10^{6}$	$1,1.10^{7}$	$1,6.10^{7}$	$2,0.10^{7}$	2	$1,4.10^{3}$
Bi-201	$1,0.10^{6}$	$1,5.10^{6}$	$2,8.10^{6}$	$4,5.10^{6}$	$7,1.10^{6}$	$8,3.10^{6}$	2	$5,7.10^{2}$
Bi-202	$1,6.10^{6}$	$2,3.10^{6}$	$4,0.10^{6}$	$6,3.10^{6}$	$9,1.10^{6}$	$1,1.10^{7}$	2	$8,7.10^{2}$
Bi-203	$2,9.10^{5}$	$4,0.10^{5}$	$7,1.10^{5}$	$1,1.10^{6}$	$1,7.10^{6}$	$2,1.10^{6}$	2	$1,5.10^{2}$
Bi-205	$1,6.10^{5}$	$2,2.10^{5}$	$3,8.10^{5}$	$5,9.10^{5}$	$9,1.10^{5}$	$1,1.10^{6}$	2	$8,5.10^{1}$
Bi-206	$7,1.10^{4}$	$1,0.10^{5}$	$1,8.10^{5}$	$2,7.10^{5}$	$4,2.10^{5}$	$5,3.10^{5}$	2	$3,8.10^{1}$
Bi-207	$1,0.10^{5}$	$1,4.10^{5}$	$2,6.10^{5}$	$4,0.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$5,4.10^{1}$
Bi-210	$6,7.10^{4}$	$1,0.10^{5}$	$2,1.10^{5}$	$3,4.10^{5}$	$6,3.10^{5}$	$7,7.10^{5}$	2	$4,0.10^{1}$
Bi-210m	$4,8.10^{3}$	$1,1.10^{4}$	$2,1.10^{4}$	$3,3.10^{4}$	$5,3.10^{4}$	$6,7.10^{4}$	2	$4,2.10^{0}$
Bi-212	$3,1.10^{5}$	$5,6.10^{5}$	$1,1.10^{6}$	$2,0.10^{6}$	$3,0.10^{6}$	$3,8.10^{6}$	2	$2,1.10^{2}$
Bi-213	$4,0.10^{5}$	$7,1.10^{5}$	$1,5.10^{6}$	$2,6.10^{6}$	$4,0.10^{6}$	$5,0.10^{6}$	2	$2,7.10^{2}$
Bi-214	$7,1.10^{5}$	$1,4.10^{6}$	$2,8.10^{6}$	$4,8.10^{6}$	$7,1.10^{6}$	$9,1.10^{6}$	2	$5,2.10^{2}$
Po-203	$3,4.10^{6}$	$4,2.10^{6}$	$7,7.10^{6}$	$1,2.10^{7}$	$1,7.10^{7}$	$2,2.10^{7}$	2	$1,6.10^{3}$
Po-205	$2,9.10^{6}$	$3,6.10^{6}$	$6,3.10^{6}$	$9,1.10^{6}$	$1,4.10^{7}$	$1,7.10^{7}$	2	$1,4.10^{3}$
Po-207	$2,3.10^{6}$	$1,8.10^{6}$	$3,1.10^{6}$	$4,8.10^{6}$	$7,1.10^{6}$	$9,1.10^{6}$	2	$6,7.10^{2}$
Po-210	$6,3.10^{1}$	$1,1.10^{2}$	$2,3.10^{2}$	$3,8.10^{2}$	$6,3.10^{2}$	$8,3.10^{2}$	2	$4,4.10^{-2}$
At-207	$4,0.10^{5}$	$6,3.10^{5}$	$1,3.10^{6}$	$2,1.10^{6}$	$3,4.10^{6}$	$4,2.10^{6}$	2	$2,4.10^{2}$
At-211	$8,3.10^{3}$	$1,3.10^{4}$	$2,6.10^{4}$	$4,3.10^{4}$	$7,7.10^{4}$	$9,1.10^{4}$	2	$4,9.10^{0}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Fr-222	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}2.10^{6}$	$1{,}4.10^{6}$	2	$9{,}9.10^{1}$
Fr-223	$3{,}8.10^{4}$	$5{,}9.10^{4}$	$1{,}2.10^{5}$	$2{,}0.10^{5}$	$3{,}4.10^{5}$	$4{,}2.10^{5}$	2	$2{,}3.10^{1}$
Ra-223	$1{,}9.10^{2}$	$9{,}1.10^{2}$	$1{,}8.10^{3}$	$2{,}2.10^{3}$	$2{,}7.10^{3}$	$1{,}0.10^{4}$	2	$3{,}5.10^{-1}$
Ra-224	$3{,}7.10^{2}$	$1{,}5.10^{3}$	$2{,}9.10^{3}$	$3{,}8.10^{3}$	$5{,}0.10^{3}$	$1{,}5.10^{4}$	2	$5{,}8.10^{-1}$
Ra-225	$1{,}4.10^{2}$	$8{,}3.10^{2}$	$1{,}6.10^{3}$	$2{,}0.10^{3}$	$2{,}3.10^{3}$	$1{,}0.10^{4}$	2	$3{,}2.10^{-1}$
Ra-226	$2{,}1.10^{2}$	$1{,}0.10^{3}$	$1{,}6.10^{3}$	$1{,}3.10^{3}$	$6{,}7.10^{2}$	$3{,}6.10^{3}$	5	$1{,}0.10^{-1}$
Ra-227	$9{,}1.10^{5}$	$2{,}3.10^{6}$	$4{,}0.10^{6}$	$5{,}9.10^{6}$	$7{,}7.10^{6}$	$1{,}2.10^{7}$	2	$8{,}9.10^{2}$
Ra-228	$3{,}3.10^{1}$	$1{,}8.10^{2}$	$2{,}9.10^{2}$	$2{,}6.10^{2}$	$1{,}9.10^{2}$	$1{,}4.10^{3}$	5	$2{,}9.10^{-2}$
Ac-224	$1{,}0.10^{5}$	$1{,}9.10^{5}$	$3{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}4.10^{1}$
Ac-225	$2{,}2.10^{3}$	$5{,}6.10^{3}$	$1{,}1.10^{4}$	$1{,}9.10^{4}$	$3{,}3.10^{4}$	$4{,}2.10^{4}$	2	$2{,}1.10^{0}$
Ac-226	$7{,}1.10^{3}$	$1{,}3.10^{4}$	$2{,}6.10^{4}$	$4{,}3.10^{4}$	$7{,}7.10^{4}$	$1{,}0.10^{5}$	2	$5{,}1.10^{0}$
Ac-227	$3{,}0.10^{1}$	$3{,}2.10^{2}$	$4{,}5.10^{2}$	$6{,}7.10^{2}$	$8{,}3.10^{2}$	$9{,}1.10^{2}$	4	$1{,}2.10^{-1}$
Ac-228	$1{,}4.10^{5}$	$2{,}0.10^{5}$	$3{,}6.10^{5}$	$7{,}1.10^{5}$	$1{,}9.10^{6}$	$2{,}3.10^{6}$	2	$7{,}7.10^{1}$
Th-226	$2{,}3.10^{5}$	$4{,}2.10^{5}$	$8{,}3.10^{5}$	$1{,}5.10^{6}$	$2{,}2.10^{6}$	$2{,}9.10^{6}$	2	$1{,}6.10^{2}$
Th-227	$3{,}3.10^{3}$	$1{,}4.10^{4}$	$2{,}8.10^{4}$	$4{,}3.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	2	$5{,}5.10^{0}$
Th-228	$2{,}7.10^{2}$	$2{,}7.10^{3}$	$4{,}5.10^{3}$	$6{,}7.10^{3}$	$1{,}1.10^{4}$	$1{,}4.10^{4}$	2	$1{,}0.10^{0}$
Th-229	$9{,}1.10^{1}$	$1{,}0.10^{3}$	$1{,}3.10^{3}$	$1{,}6.10^{3}$	$1{,}9.10^{3}$	$2{,}0.10^{3}$	6	$2{,}8.10^{-1}$
Th-230	$2{,}4.10^{2}$	$2{,}4.10^{3}$	$3{,}2.10^{3}$	$4{,}2.10^{3}$	$4{,}5.10^{3}$	$4{,}8.10^{3}$	6	$6{,}5.10^{-1}$
Th-231	$2{,}6.10^{5}$	$4{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$2{,}9.10^{6}$	2	$1{,}5.10^{2}$
Th-232	$2{,}2.10^{2}$	$2{,}2.10^{3}$	$2{,}9.10^{3}$	$3{,}4.10^{3}$	$4{,}0.10^{3}$	$4{,}3.10^{3}$	6	$6{,}0.10^{-1}$
Th-234	$2{,}5.10^{4}$	$4{,}0.10^{4}$	$7{,}7.10^{4}$	$1{,}4.10^{5}$	$2{,}4.10^{5}$	$2{,}9.10^{5}$	2	$1{,}5.10^{1}$
Pa-227	$1{,}7.10^{5}$	$3{,}1.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}2.10^{6}$	2	$1{,}2.10^{2}$
Pa-228	$8{,}3.10^{4}$	$2{,}1.10^{5}$	$3{,}8.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	2	$8{,}0.10^{1}$
Pa-230	$3{,}8.10^{4}$	$1{,}8.10^{5}$	$3{,}2.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$6{,}7.10^{1}$
Pa-231	$7{,}7.10^{1}$	$7{,}7.10^{2}$	$9{,}1.10^{2}$	$1{,}1.10^{3}$	$1{,}3.10^{3}$	$1{,}4.10^{3}$	5	$1{,}9.10^{-1}$
Pa-232	$1{,}6.10^{5}$	$2{,}4.10^{5}$	$4{,}5.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$9{,}2.10^{1}$
Pa-233	$1{,}0.10^{5}$	$1{,}6.10^{5}$	$3{,}1.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$6{,}2.10^{1}$
Pa-234	$2{,}0.10^{5}$	$3{,}1.10^{5}$	$5{,}9.10^{5}$	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}0.10^{6}$	2	$1{,}2.10^{2}$
U-230	$1{,}3.10^{3}$	$3{,}3.10^{3}$	$6{,}7.10^{3}$	$1{,}0.10^{4}$	$1{,}5.10^{4}$	$1{,}8.10^{4}$	2	$1{,}3.10^{0}$
U-231	$3{,}2.10^{5}$	$5{,}0.10^{5}$	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$2{,}9.10^{6}$	$3{,}6.10^{6}$	2	$1{,}9.10^{2}$
U-232	$4{,}0.10^{2}$	$1{,}2.10^{3}$	$1{,}7.10^{3}$	$1{,}8.10^{3}$	$1{,}6.10^{3}$	$3{,}0.10^{3}$	5	$2{,}4.10^{-1}$
U-233	$2{,}6.10^{3}$	$7{,}1.10^{3}$	$1{,}1.10^{4}$	$1{,}3.10^{4}$	$1{,}3.10^{4}$	$2{,}0.10^{4}$	5	$1{,}9.10^{0}$
U-234[4]	$2{,}7.10^{3}$	$7{,}7.10^{3}$	$1{,}1.10^{4}$	$1{,}4.10^{4}$	$1{,}4.10^{4}$	$2{,}0.10^{4}$	5	$2{,}0.10^{0}$
U-235[4]	$2{,}9.10^{3}$	$7{,}7.10^{3}$	$1{,}2.10^{4}$	$1{,}4.10^{4}$	$1{,}4.10^{4}$	$2{,}1.10^{4}$	5	$2{,}2.10^{0}$
U-236	$2{,}9.10^{3}$	$7{,}7.10^{3}$	$1{,}2.10^{4}$	$1{,}4.10^{4}$	$1{,}4.10^{4}$	$2{,}1.10^{4}$	5	$2{,}2.10^{0}$
U-237	$1{,}2.10^{5}$	$1{,}9.10^{5}$	$3{,}6.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}3.10^{6}$	2	$7{,}1.10^{1}$
U-238[4]	$2{,}9.10^{3}$	$8{,}3.10^{3}$	$1{,}3.10^{4}$	$1{,}5.10^{4}$	$1{,}5.10^{4}$	$2{,}2.10^{4}$	5	$2{,}3.10^{0}$
U-239	$2{,}9.10^{6}$	$5{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}9.10^{7}$	$2{,}9.10^{7}$	$3{,}7.10^{7}$	2	$2{,}0.10^{3}$
U-240	$7{,}7.10^{4}$	$1{,}2.10^{5}$	$2{,}4.10^{5}$	$4{,}2.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	2	$4{,}7.10^{1}$
Np-232	$1{,}1.10^{7}$	$2{,}0.10^{7}$	$3{,}7.10^{7}$	$5{,}9.10^{7}$	$8{,}3.10^{7}$	$1{,}0.10^{8}$	2	$7{,}5.10^{3}$
Np-233	$4{,}8.10^{7}$	$7{,}7.10^{7}$	$1{,}5.10^{8}$	$2{,}5.10^{8}$	$3{,}6.10^{8}$	$4{,}5.10^{8}$	2	$3{,}0.10^{4}$
Np-234	$1{,}6.10^{5}$	$2{,}3.10^{5}$	$4{,}2.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}2.10^{6}$	2	$8{,}7.10^{1}$
Np-235	$1{,}4.10^{6}$	$2{,}4.10^{6}$	$5{,}0.10^{6}$	$8{,}3.10^{6}$	$1{,}5.10^{7}$	$1{,}9.10^{7}$	2	$9{,}4.10^{2}$
Np-236	$5{,}3.10^{3}$	$4{,}2.10^{4}$	$5{,}6.10^{4}$	$5{,}6.10^{4}$	$5{,}6.10^{4}$	$5{,}9.10^{4}$	6	$8{,}1.10^{0}$
Np-236m	$4{,}0.10^{5}$	$7{,}7.10^{5}$	$1{,}5.10^{6}$	$2{,}5.10^{6}$	$4{,}2.10^{6}$	$5{,}3.10^{6}$	2	$3{,}0.10^{2}$
Np-237	$5{,}0.10^{2}$	$4{,}8.10^{3}$	$7{,}1.10^{3}$	$9{,}1.10^{3}$	$9{,}1.10^{3}$	$9{,}1.10^{3}$	6	$1{,}2.10^{0}$
Np-238	$1{,}1.10^{5}$	$1{,}6.10^{5}$	$3{,}1.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$6{,}2.10^{1}$
Np-239	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$3{,}4.10^{5}$	$5{,}9.10^{5}$	$1{,}0.10^{6}$	$1{,}3.10^{6}$	2	$6{,}7.10^{1}$
Np-240	$1{,}1.10^{6}$	$1{,}9.10^{6}$	$3{,}8.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}2.10^{7}$	2	$7{,}4.10^{2}$
Pu-234	$4{,}8.10^{5}$	$9{,}1.10^{5}$	$1{,}8.10^{6}$	$3{,}0.10^{6}$	$5{,}0.10^{6}$	$6{,}3.10^{6}$	2	$3{,}5.10^{2}$

[4] For natural uranium (0,0055% U-234, 0,720% U-235 and 99,274% U-238):

Nuclide	LAI_{ING} for age groups, $g.a^{-1}$						Critical age group and $LAAA_{DW}$, $g.l^{-1}$	
	1	2	3	4	5	6		
natural uranium	$1{,}1.10^{-1}$	$3{,}2.10^{-1}$	$4{,}7.10^{-1}$	$5{,}6.10^{-1}$	$5{,}6.10^{-1}$	$8{,}4.10^{-1}$	5	$8{,}5.10^{-5}$

Nuclide	LAI_{ING} for age groups, $Bq.a^{-1}$						Critical age group and $LAAA_{DW}$, $Bq.l^{-1}$	
	1	2	3	4	5	6		
Pu-235	$4{,}5.10^{7}$	$7{,}7.10^{7}$	$1{,}5.10^{8}$	$2{,}6.10^{8}$	$3{,}7.10^{8}$	$4{,}8.10^{8}$	2	$3{,}0.10^{4}$
Pu-236	$4{,}8.10^{2}$	$4{,}5.10^{3}$	$7{,}1.10^{3}$	$1{,}0.10^{4}$	$1{,}2.10^{4}$	$1{,}1.10^{4}$	6	$1{,}6.10^{0}$
Pu-237	$9{,}1.10^{5}$	$1{,}4.10^{6}$	$2{,}8.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}0.10^{7}$	2	$5{,}6.10^{2}$
Pu-238	$2{,}5.10^{2}$	$2{,}5.10^{3}$	$3{,}2.10^{3}$	$4{,}2.10^{3}$	$4{,}5.10^{3}$	$4{,}3.10^{3}$	6	$6{,}0.10^{-1}$
Pu-239	$2{,}4.10^{2}$	$2{,}4.10^{3}$	$3{,}0.10^{3}$	$3{,}7.10^{3}$	$4{,}2.10^{3}$	$4{,}0.10^{3}$	6	$5{,}5.10^{-1}$
Pu-240	$2{,}4.10^{2}$	$2{,}4.10^{3}$	$3{,}0.10^{3}$	$3{,}7.10^{3}$	$4{,}2.10^{3}$	$4{,}0.10^{3}$	6	$5{,}5.10^{-1}$
Pu-241	$1{,}8.10^{4}$	$1{,}8.10^{5}$	$1{,}8.10^{5}$	$2{,}0.10^{5}$	$2{,}1.10^{5}$	$2{,}1.10^{5}$	6	$2{,}9.10^{1}$
Pu-242	$2{,}5.10^{2}$	$2{,}5.10^{3}$	$3{,}1.10^{3}$	$3{,}8.10^{3}$	$4{,}3.10^{3}$	$4{,}2.10^{3}$	6	$5{,}7.10^{-1}$
Pu-243	$1{,}0.10^{6}$	$1{,}6.10^{6}$	$3{,}2.10^{6}$	$5{,}6.10^{6}$	$9{,}1.10^{6}$	$1{,}2.10^{7}$	2	$6{,}2.10^{2}$
Pu-244	$2{,}5.10^{2}$	$2{,}4.10^{3}$	$3{,}1.10^{3}$	$3{,}8.10^{3}$	$4{,}3.10^{3}$	$4{,}2.10^{3}$	6	$5{,}7.10^{-1}$
Pu-245	$1{,}3.10^{5}$	$2{,}0.10^{5}$	$3{,}8.10^{5}$	$6{,}7.10^{5}$	$1{,}1.10^{6}$	$1{,}4.10^{6}$	2	$7{,}5.10^{1}$
Pu-246	$2{,}8.10^{4}$	$4{,}3.10^{4}$	$8{,}3.10^{4}$	$1{,}4.10^{5}$	$2{,}4.10^{5}$	$3{,}0.10^{5}$	2	$1{,}7.10^{1}$
Am-237	$5{,}9.10^{6}$	$1{,}0.10^{7}$	$1{,}8.10^{7}$	$3{,}0.10^{7}$	$4{,}5.10^{7}$	$5{,}6.10^{7}$	2	$3{,}8.10^{3}$
Am-238	$4{,}0.10^{6}$	$6{,}3.10^{6}$	$1{,}1.10^{7}$	$1{,}7.10^{7}$	$2{,}5.10^{7}$	$3{,}1.10^{7}$	2	$2{,}4.10^{3}$
Am-239	$3{,}8.10^{5}$	$5{,}9.10^{5}$	$1{,}2.10^{6}$	$2{,}0.10^{6}$	$3{,}3.10^{6}$	$4{,}2.10^{6}$	2	$2{,}3.10^{2}$
Am-240	$2{,}1.10^{5}$	$3{,}0.10^{5}$	$5{,}6.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}7.10^{6}$	2	$1{,}2.10^{2}$
Am-241	$2{,}7.10^{2}$	$2{,}7.10^{3}$	$3{,}7.10^{3}$	$4{,}5.10^{3}$	$5{,}0.10^{3}$	$5{,}0.10^{3}$	6	$6{,}8.10^{-1}$
Am-242	$2{,}0.10^{5}$	$4{,}5.10^{5}$	$9{,}1.10^{5}$	$1{,}6.10^{6}$	$2{,}7.10^{6}$	$3{,}3.10^{6}$	2	$1{,}7.10^{2}$
Am-242m	$3{,}2.10^{2}$	$3{,}3.10^{3}$	$4{,}3.10^{3}$	$5{,}0.10^{3}$	$5{,}3.10^{3}$	$5{,}3.10^{3}$	6	$7{,}2.10^{-1}$
Am-243	$2{,}8.10^{2}$	$2{,}7.10^{3}$	$3{,}7.10^{3}$	$4{,}5.10^{3}$	$5{,}0.10^{3}$	$5{,}0.10^{3}$	6	$6{,}8.10^{-1}$
Am-244	$2{,}0.10^{5}$	$3{,}2.10^{5}$	$6{,}3.10^{5}$	$1{,}0.10^{6}$	$1{,}7.10^{6}$	$2{,}2.10^{6}$	2	$1{,}2.10^{2}$
Am-244m	$2{,}7.10^{6}$	$5{,}0.10^{6}$	$1{,}0.10^{7}$	$1{,}8.10^{7}$	$2{,}7.10^{7}$	$3{,}4.10^{7}$	2	$1{,}9.10^{3}$
Am-245	$1{,}5.10^{6}$	$2{,}2.10^{6}$	$4{,}5.10^{6}$	$7{,}7.10^{6}$	$1{,}3.10^{7}$	$1{,}6.10^{7}$	2	$8{,}5.10^{2}$
Am-246	$1{,}5.10^{6}$	$2{,}6.10^{6}$	$5{,}3.10^{6}$	$9{,}1.10^{6}$	$1{,}4.10^{7}$	$1{,}7.10^{7}$	2	$1{,}0.10^{3}$
Am-246m	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}3.10^{7}$	$2{,}9.10^{7}$	2	$1{,}7.10^{3}$
Cm-238	$1{,}3.10^{6}$	$2{,}0.10^{6}$	$3{,}8.10^{6}$	$6{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}3.10^{7}$	2	$7{,}8.10^{2}$
Cm-240	$4{,}5.10^{3}$	$2{,}1.10^{4}$	$4{,}0.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}3.10^{5}$	2	$8{,}0.10^{0}$
Cm-241	$9{,}1.10^{4}$	$1{,}8.10^{5}$	$3{,}3.10^{5}$	$5{,}3.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$6{,}7.10^{1}$
Cm-242	$1{,}7.10^{3}$	$1{,}3.10^{4}$	$2{,}6.10^{4}$	$4{,}2.10^{4}$	$6{,}7.10^{4}$	$8{,}3.10^{4}$	2	$5{,}1.10^{0}$
Cm-243	$3{,}1.10^{2}$	$3{,}0.10^{3}$	$4{,}5.10^{3}$	$6{,}3.10^{3}$	$7{,}1.10^{3}$	$6{,}7.10^{3}$	6	$9{,}1.10^{-1}$
Cm-244	$3{,}4.10^{2}$	$3{,}4.10^{3}$	$5{,}3.10^{3}$	$7{,}1.10^{3}$	$8{,}3.10^{3}$	$8{,}3.10^{3}$	6	$1{,}1.10^{0}$
Cm-245	$2{,}7.10^{2}$	$2{,}7.10^{3}$	$3{,}6.10^{3}$	$4{,}3.10^{3}$	$4{,}8.10^{3}$	$4{,}8.10^{3}$	6	$6{,}5.10^{-1}$
Cm-246	$2{,}7.10^{2}$	$2{,}7.10^{3}$	$3{,}6.10^{3}$	$4{,}5.10^{3}$	$4{,}8.10^{3}$	$4{,}8.10^{3}$	6	$6{,}5.10^{-1}$
Cm-247	$2{,}9.10^{2}$	$2{,}9.10^{3}$	$3{,}8.10^{3}$	$4{,}8.10^{3}$	$5{,}3.10^{3}$	$5{,}3.10^{3}$	6	$7{,}2.10^{-1}$
Cm-248	$7{,}1.10^{1}$	$7{,}1.10^{2}$	$1{,}0.10^{3}$	$1{,}2.10^{3}$	$1{,}3.10^{3}$	$1{,}3.10^{3}$	6	$1{,}8.10^{-1}$
Cm-249	$2{,}6.10^{6}$	$4{,}5.10^{6}$	$9{,}1.10^{6}$	$1{,}6.10^{7}$	$2{,}5.10^{7}$	$3{,}2.10^{7}$	2	$1{,}7.10^{3}$
Cm-250	$1{,}3.10^{1}$	$1{,}2.10^{2}$	$1{,}7.10^{2}$	$2{,}0.10^{2}$	$2{,}3.10^{2}$	$2{,}3.10^{2}$	6	$3{,}1.10^{-2}$
Bk-245	$1{,}6.10^{5}$	$2{,}6.10^{5}$	$5{,}0.10^{5}$	$8{,}3.10^{5}$	$1{,}4.10^{6}$	$1{,}8.10^{6}$	2	$9{,}9.10^{1}$
Bk-246	$2{,}7.10^{5}$	$3{,}8.10^{5}$	$7{,}1.10^{5}$	$1{,}1.10^{6}$	$1{,}7.10^{6}$	$2{,}1.10^{6}$	2	$1{,}5.10^{2}$
Bk-247	$1{,}1.10^{2}$	$1{,}2.10^{3}$	$1{,}6.10^{3}$	$2{,}2.10^{3}$	$2{,}6.10^{3}$	$2{,}9.10^{3}$	6	$3{,}9.10^{-1}$
Bk-249	$4{,}5.10^{4}$	$3{,}4.10^{5}$	$5{,}3.10^{5}$	$7{,}1.10^{5}$	$9{,}1.10^{5}$	$1{,}0.10^{6}$	4	$1{,}3.10^{2}$
Bk-250	$6{,}7.10^{5}$	$1{,}2.10^{6}$	$2{,}3.10^{6}$	$3{,}7.10^{6}$	$5{,}9.10^{6}$	$7{,}1.10^{6}$	2	$4{,}5.10^{2}$
Cf-244	$1{,}0.10^{6}$	$2{,}1.10^{6}$	$4{,}2.10^{6}$	$7{,}7.10^{6}$	$1{,}1.10^{7}$	$1{,}4.10^{7}$	2	$8{,}0.10^{2}$
Cf-246	$2{,}0.10^{4}$	$4{,}2.10^{4}$	$8{,}3.10^{4}$	$1{,}4.10^{5}$	$2{,}4.10^{5}$	$3{,}0.10^{5}$	2	$1{,}6.10^{1}$
Cf-248	$6{,}7.10^{2}$	$6{,}3.10^{3}$	$1{,}0.10^{4}$	$1{,}7.10^{4}$	$3{,}0.10^{4}$	$3{,}6.10^{4}$	2	$2{,}4.10^{0}$
Cf-249	$1{,}1.10^{2}$	$1{,}1.10^{3}$	$1{,}6.10^{3}$	$2{,}1.10^{3}$	$2{,}6.10^{3}$	$2{,}9.10^{3}$	4	$3{,}9.10^{-1}$
Cf-250	$1{,}8.10^{2}$	$1{,}8.10^{3}$	$2{,}7.10^{3}$	$4{,}3.10^{3}$	$5{,}9.10^{3}$	$6{,}3.10^{3}$	2	$7{,}0.10^{-1}$
Cf-251	$1{,}1.10^{2}$	$1{,}1.10^{3}$	$1{,}5.10^{3}$	$2{,}1.10^{3}$	$2{,}6.10^{3}$	$2{,}8.10^{3}$	6	$3{,}8.10^{-1}$
Cf-252	$2{,}0.10^{2}$	$2{,}0.10^{3}$	$3{,}1.10^{3}$	$5{,}3.10^{3}$	$1{,}0.10^{4}$	$1{,}1.10^{4}$	2	$7{,}5.10^{-1}$
Cf-253	$1{,}0.10^{4}$	$9{,}1.10^{4}$	$1{,}7.10^{5}$	$2{,}7.10^{5}$	$5{,}6.10^{5}$	$7{,}1.10^{5}$	2	$3{,}5.10^{1}$
Cf-254	$9{,}1.10^{1}$	$3{,}8.10^{2}$	$7{,}1.10^{2}$	$1{,}2.10^{3}$	$2{,}0.10^{3}$	$2{,}5.10^{3}$	2	$1{,}5.10^{-1}$
Es-250	$4{,}3.10^{6}$	$1{,}0.10^{7}$	$1{,}8.10^{7}$	$2{,}7.10^{7}$	$3{,}8.10^{7}$	$4{,}8.10^{7}$	2	$3{,}9.10^{3}$
Es-251	$5{,}3.10^{5}$	$8{,}3.10^{5}$	$1{,}6.10^{6}$	$2{,}7.10^{6}$	$4{,}5.10^{6}$	$5{,}9.10^{6}$	2	$3{,}2.10^{2}$
Es-253	$5{,}9.10^{3}$	$2{,}2.10^{4}$	$4{,}3.10^{4}$	$7{,}1.10^{4}$	$1{,}3.10^{5}$	$1{,}6.10^{5}$	2	$8{,}5.10^{0}$
Es-254	$7{,}1.10^{2}$	$6{,}3.10^{3}$	$1{,}0.10^{4}$	$1{,}7.10^{4}$	$3{,}0.10^{4}$	$3{,}6.10^{4}$	2	$2{,}4.10^{0}$
Es-254m	$1{,}8.10^{4}$	$3{,}3.10^{4}$	$6{,}7.10^{4}$	$1{,}1.10^{5}$	$1{,}9.10^{5}$	$2{,}4.10^{5}$	2	$1{,}3.10^{1}$
Fm-252	$2{,}6.10^{4}$	$5{,}0.10^{4}$	$1{,}0.10^{5}$	$1{,}7.10^{5}$	$3{,}0.10^{5}$	$3{,}7.10^{5}$	2	$1{,}9.10^{1}$

Fm-253	$4{,}0.10^{4}$	$1{,}5.10^{5}$	$2{,}9.10^{5}$	$4{,}8.10^{5}$	$9{,}1.10^{5}$	$1{,}1.10^{6}$	2	$5{,}7.10^{1}$
Fm-254	$1{,}8.10^{5}$	$3{,}1.10^{5}$	$6{,}3.10^{5}$	$1{,}1.10^{6}$	$1{,}8.10^{6}$	$2{,}3.10^{6}$	2	$1{,}2.10^{2}$
Fm-255	$3{,}0.10^{4}$	$5{,}3.10^{4}$	$1{,}1.10^{5}$	$1{,}8.10^{5}$	$3{,}1.10^{5}$	$4{,}0.10^{5}$	2	$2{,}0.10^{1}$
Fm-257	$1{,}0.10^{3}$	$9{,}1.10^{3}$	$1{,}5.10^{4}$	$2{,}5.10^{4}$	$5{,}3.10^{4}$	$6{,}7.10^{4}$	2	$3{,}5.10^{0}$
Md-257	$3{,}2.10^{5}$	$1{,}1.10^{6}$	$2{,}2.10^{6}$	$3{,}7.10^{6}$	$6{,}7.10^{6}$	$8{,}3.10^{6}$	2	$4{,}4.10^{2}$
Md-258m	$1{,}6.10^{3}$	$1{,}1.10^{4}$	$2{,}0.10^{4}$	$3{,}3.10^{4}$	$6{,}3.10^{4}$	$7{,}7.10^{4}$	2	$4{,}3.10^{0}$

Table No. 6

Secondary limit of the average annual volume activity ($LAAVA_A$) of radioactive noble gases in the air in work premises (expected effective dose 20 mSv/a)

Nuclide	$LAAVA_A$, $Bq.m^{-3}$
Ar-37	$6{,}9.10^{10}$
Ar-39	$2{,}6.10^{7}$
Ar-41	$5{,}3.10^{4}$
Kr-74	$6{,}3.10^{4}$
Kr-76	$1{,}8.10^{5}$
Kr-77	$7{,}2.10^{4}$
Kr-79	$2{,}9.10^{5}$
Kr-81	$1{,}3.10^{7}$
Kr-83m	$1{,}3.10^{9}$
Kr-85	$1{,}3.10^{7}$
Kr-85m	$4{,}8.10^{5}$
Kr-87	$8{,}3.10^{4}$
Kr-88	$3{,}4.10^{4}$
Xe-120	$1{,}9.10^{5}$
Xe-121	$3{,}8.10^{4}$
Xe-122	$1{,}5.10^{6}$
Xe-123	$1{,}2.10^{5}$
Xe-125	$3{,}0.10^{5}$
Xe-127	$2{,}9.10^{5}$
Xe-129m	$3{,}4.10^{6}$
Xe-131m	$8{,}8.10^{6}$
Xe-133m	$2{,}6.10^{6}$
Xe-133	$2{,}4.10^{6}$
Xe-135m	$1{,}8.10^{5}$
Xe-135	$2{,}9.10^{5}$
Xe-138	$6{,}0.10^{4}$

Table No.7

Secondary limit of the average annual volume activity ($LAAVA_A$) of radioactive noble gases in the atmospheric air in dwellings and outdoors (expected effective dose 1 mSv/a)

Nuclide	$LAAVA_A$, $Bq.m^{-3}$
Ar-37	$6{,}7.10^{8}$
Ar-39	$2{,}5.10^{5}$
Ar-41	$5{,}2.10^{2}$
Kr-74	$6{,}1.10^{2}$
Kr-76	$1{,}7.10^{3}$
Kr-77	$7{,}0.10^{2}$
Kr-79	$2{,}8.10^{3}$
Kr-81	$1{,}3.10^{5}$
Kr-83m	$1{,}3.10^{7}$
Kr-85	$1{,}2.10^{5}$
Kr-85m	$4{,}6.10^{3}$
Kr-87	$8{,}1.10^{2}$
Kr-88	$3{,}3.10^{2}$
Xe-120	$1{,}8.10^{3}$
Xe-121	$3{,}7.10^{2}$
Xe-122	$1{,}4.10^{4}$
Xe-123	$1{,}1.10^{3}$
Xe-125	$2{,}9.10^{3}$
Xe-127	$2{,}8.10^{3}$
Xe-129m	$3{,}3.10^{4}$
Xe-131m	$8{,}6.10^{4}$
Xe-133m	$2{,}5.10^{4}$
Xe-133	$2{,}3.10^{4}$
Xe-135m	$1{,}7.10^{3}$
Xe-135	$2{,}9.10^{3}$
Xe-138	$5{,}8.10^{2}$

Table No. 8

Secondary limit of the average annual flow density of monoenergetic electrons for occupationally exposed workers in the skin exposure – part.(cm^2.s)$^{-1}$

Energy of electrons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
0,07	2700	370
0,10	140	50
0,20	150	100
0,40	190	180
0,70	220	240
1,00	230	260
2,00	260	290
4,00	260	300
7,00	260	300
10,00	260	300

Table No. 9

Secondary limit of the average annual flow density of monoenergetic electrons for occupationally exposed workers in the eye lens exposure – part.(cm^2.s)$^{-1}$

Energy of electrons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
0,80	410	72
1,00	44	11
1,50	21	7
2,00	15	7
4,00	13	10
7,00	11	11
10,00	11	11

Table No.10

Secondary limit of the average annual flow density of beta-particles for occupationally exposed workers in the skin contact exposure – part.(cm^2.s)$^{-1}$

Mean energy of beta-spectrum MeV	Flow density
0,05	820
0,07	450
0,10	310
0,15	240
0,20	215
0,30	190
0,40	180
0,50	180
0,70	170
1,00	165
1,50	160
2,00	155

Table No.11

Secondary limit of the average annual flow density of monoenergetic photons for occupationally exposed workers in the external hole body exposure – part.(cm^2.s)$^{-1}$

Energy of photons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
0,010	$1{,}63.10^5$	$6{,}77.10^4$
0,015	$8{,}73.10^4$	$2{,}62.10^4$
0,020	$5{,}41.10^4$	$1{,}62.10^4$
0,030	$3{,}24.10^4$	$1{,}08.10^4$
0,040	$2{,}31.10^4$	$9{,}65.10^3$
0,050	$1{,}99.10^4$	$9{,}12.10^3$
0,060	$1{,}77.10^4$	$8{,}63.10^3$
0,080	$1{,}42.10^4$	$7{,}44.10^3$
0,100	$1{,}18.10^4$	$6{,}33.10^3$
0,150	$7{,}79.10^3$	$4{,}33.10^3$
0,200	$5{,}61.10^3$	$3{,}28.10^3$
0,300	$3{,}54.10^3$	$2{,}17.10^3$
0,400	$2{,}59.10^3$	$1{,}63.10^3$
0,500	$2{,}02.10^3$	$1{,}32.10^3$
0,600	$1{,}69.10^3$	$1{,}12.10^3$
0,800	$1{,}26.10^3$	$8{,}73.10^2$
1,0	$1{,}01.10^3$	$7{,}33.10^2$
2,0	$5{,}63.10^2$	$4{,}38.10^2$
4,0	$3{,}28.10^2$	$2{,}73.10^2$
6,0	$2{,}38.10^2$	$2{,}05.10^2$
8,0	$1{,}89.10^2$	$1{,}64.10^2$
10,0	$1{,}56.10^2$	$1{,}38.10^2$

Table No.12

Secondary limit of the average annual flow density of monoenergetic photons for occupationally exposed workers in the external skin exposure – part.$(cm^2.s)^{-1}$

Energy of photons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
0,01	$1,31.10^4$	$1,16.10^4$
0,02	$4,96.10^4$	$4,63.10^4$
0,03	$1,00.10^5$	$9,25.10^4$
0,05	$1,81.10^5$	$1,63.10^5$
0,10	$1,50.10^5$	$1,42.10^5$
0,15	$9,74.10^4$	$9,74.10^4$
0,30	$4,53.10^4$	$4,53.10^4$
0,40	$3,38.10^4$	$3,38.10^4$
0,50	$2,80.10^4$	$2,80.10^4$
0,60	$2,40.10^4$	$2,40.10^4$
0,80	$1,88.10^4$	$1,88.10^4$
1,0	$1,55.10^4$	$1,55.10^4$
2,0	$9,57.10^3$	$9,57.10^3$
4,0	$6,08.10^3$	$6,08.10^3$
6,0	$4,57.10^3$	$4,57.10^3$
8,0	$3,66.10^3$	$3,66.10^3$
10,0	$3,13.10^3$	$3,13.10^3$

Table No. 13

Secondary limit of the average annual flow density of monoenergetic photons for occupationally exposed workers in the eye lens exposure – part.$(cm^2.s)^{-1}$

Energy of photons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
0,010	$4,88.10^3$	$1,44.10^3$
0,015	$4,39.10^3$	$1,55.10^3$
0,020	$5,29.10^3$	$2,13.10^3$
0,030	$8,73.10^3$	$3,80.10^3$
0,040	$1,21.10^4$	$5,69.10^3$
0,050	$1,37.10^4$	$7,11.10^3$
0,060	$1,41.10^4$	$7,56.10^3$
0,080	$1,21.10^4$	$6,88.10^3$
0,100	$9,68.10^3$	$6,79.10^3$
0,150	$6,12.10^3$	$3,84.10^3$
0,200	$4,41.10^3$	$2,81.10^3$
0,300	$2,79.10^3$	$1,85.10^3$
0,400	$2,05.10^3$	$1,41.10^3$
0,500	$1,65.10^3$	$1,15.10^3$
0,600	$1,39.10^3$	$9,79.10^2$
0,800	$1,05.10^3$	$7,83.10^2$
1,0	$8,71.10^2$	$6,55.10^2$
2,0	$4,91.10^2$	$4,12.10^2$
4,0	$2,93.10^2$	$2,67.10^2$
6,0	$2,16.10^2$	$2,09.10^2$
8,0	$1,72.10^2$	$1,72.10^2$
10,0	$1,41.10^2$	$1,47.10^2$

Table No. 14

Secondary limit of the average annual flow density of monoenergetic neutrons for occupationally exposed workers in the external hole body exposure – part.(cm^2.s)$^{-1}$

Energy of neutrons MeV	Flow density Exposure geometry	
	Isotropic field	AP geometry
Thermal neutrons	$1{,}98.10^3$	$8{,}60.10^2$
1.10^{-7}	$1{,}58.10^3$	$6{,}56.10^2$
1.10^{-6}	$1{,}16.10^3$	$4{,}74.10^2$
1.10^{-5}	$1{,}01.10^3$	$4{,}32.10^2$
1.10^{-4}	$1{,}01.10^3$	$4{,}48.10^2$
1.10^{-3}	$1{,}08.10^3$	$4{,}60.10^2$
1.10^{-2}	$4{,}24.10^2$	$1{,}79.10^2$
2.10^{-2}	$3{,}20.10^2$	$1{,}37.10^2$
5.10^{-2}	$1{,}89.10^2$	$8{,}49.10^1$
1.10^{-1}	$1{,}20.10^2$	$5{,}46.10^1$
2.10^{-1}	$7{,}71.10^1$	$3{,}30.10^1$
5.10^{-1}	$4{,}36.10^1$	$1{,}74.10^1$
1,0	$2{,}82.10^1$	$1{,}16.10^1$
1,2	$2{,}51.10^1$	$1{,}05.10^1$
2,0	$1{,}84.10^1$	8,53
3,0	$1{,}49.10^1$	7,56
4,0	$1{,}31.10^1$	7,13
5,0	$1{,}20.10^1$	6,89
6,0	$1{,}16.10^1$	6,76
7,0	$1{,}13.10^1$	6,67
8,0	$1{,}10.10^1$	6,61
10,0	$1{,}06.10^1$	6,55
14,0	9,81	6,59
20,0	9,52	6,81

Table No.15

Secondary limit of surface radioactive contamination of the skin of the body of occupationally exposed workers, means of individual protection, work clothes and shoes, surfaces of premises and equipment–part.(cm^2.min)$^{-1}$

Contamination objekt	Alpha-active radionuclides		Beta-active radionuclides
	with very high radio-toxicity (*)	other	
Undamaged skin of the body (**) and all surfaces of clothing and articles that are in direct contact with the skin	1	1	100 (20) (***)
Basic workwear, additional means of individual protection, outer surface of working shoes	5	20	800 (160) (***)
All surfaces in premises being a permanent workplace of the staff (****)	5	20	2000
All surfaces in premises for periodical presence of staff (****)	50	200	8000
Outer surface of the additional personal protective equipment taken away in the sanitary checkpoint	50	200	8000

(*) Radionuclide group with very high radiotoxicity.

(**) Total contaminated skin area up to 300 cm^2. If this condition is not met, the limits of contamination shall be multiplied by a factor of 0,5.

(***) For strontium-90 and yttrium-90.

(****) For all surfaces in the premises, the limits of surface radioactive contamination with alpha-active radionuclides are related to unfixed (removable) contamination, and all other surfaces for the total (fixed and unfixed) contamination.

Table No.16

Conversion coefficients for radon (Rn-222) and its short-lived decay products exposure

(Amended, SG No. 110/2020)

Units	Value
Effective dose from decay products at equilibrium factor 0,4	$7{,}5.10^{-6}$ $(mSv.h^{-1})/(Bq.m^{-3})$
Annual dose from decay products for an average annual volume activity of 300 $Bg.m^{-3}$ at an equilibrium factor of 0,4:	
– in dwellings at 7000 hours per year	14 mSv
– on work places at 2000 hours per year	4 mSv

Note: The decay products in the table are considered to the short-lived decay products of Rn-222: Po-218, Pb-214, Bi-214 and Po-214.

Annex No. 3
to Article 34

Activity levels and specific activities of radionuclides under which activities are not subject to regulation

Table No.1

Activity levels and specific activities of radionuclides under which activities are not subject to regulation (for small quantities of materials – up to 1000 kg)

Radionuclide	Specific activity, Bq/g	Activity, Bq
H-3	1.10^6	1.10^9
Be-7	1.10^3	1.10^7
Be-10	1.10^4	1.10^6
C-11	1.10^1	1.10^6
C-14	1.10^4	1.10^7
N-13	1.10^2	1.10^9
Ne-19	1.10^2	1.10^9
O-15	1.10^2	1.10^9
F-18	1.10^1	1.10^6
Na-22	1.10^1	1.10^6
Na-24	1.10^1	1.10^5
Mg-28	1.10^1	1.10^5
Al-26	1.10^1	1.10^5
Si-31	1.10^3	1.10^6
Si-32	1.10^3	1.10^6
P-32	1.10^3	1.10^5
P-33	1.10^5	1.10^8
S-35	1.10^5	1.10^8
Cl-36	1.10^4	1.10^6
Cl-38	1.10^1	1.10^5
Cl-39	1.10^1	1.10^5
Ar-37	1.10^6	1.10^8
Ar-39	1.10^7	1.10^4
Ar-41	1.10^2	1.10^9
K-40 (1)	1.10^2	1.10^6
K-42	1.10^2	1.10^6
K-43	1.10^1	1.10^6
K-44	1.10^1	1.10^5
K-45	1.10^1	1.10^5
Ca-41	1.10^5	1.10^7
Ca-45	1.10^4	1.10^7
Ca-47	1.10^1	1.10^6
Sc-43	1.10^1	1.10^6
Sc-44	1.10^1	1.10^5
Sc-45	1.10^2	1.10^7
Sc-46	1.10^1	1.10^6
Sc-47	1.10^2	1.10^6
Sc-48	1.10^1	1.10^5
Sc-49	1.10^3	1.10^5
Ti-44	1.10^1	1.10^5
Ti-45	1.10^1	1.10^6
V-47	1.10^1	1.10^5
V-48	1.10^1	1.10^5
V-49	1.10^4	1.10^7
Cr-48	1.10^2	1.10^6
Cr-49	1.10^1	1.10^6
Cr-51	1.10^3	1.10^7
Mn-51	1.10^1	1.10^5
Mn-52	1.10^1	1.10^5
Mn-52m	1.10^1	1.10^5
Mn-53	1.10^4	1.10^9
Mn-54	1.10^1	1.10^6
Mn-56	1.10^1	1.10^5
Fe-52	1.10^1	1.10^6
Fe-55	1.10^4	1.10^6
Fe-59	1.10^1	1.10^6
Fe-60	1.10^2	1.10^5
Co-55	1.10^1	1.10^6
Co-56	1.10^1	1.10^5
Co-57	1.10^2	1.10^6
Co-58	1.10^1	1.10^6
Co-58m	1.10^4	1.10^7
Co-60	1.10^1	1.10^5
Co-60m	1.10^3	1.10^6
Co-61	1.10^2	1.10^6
Co-62m	1.10^1	1.10^5
Ni-56	1.10^1	1.10^6
Ni-57	1.10^1	1.10^6
Ni-59	1.10^4	1.10^8
Ni-63	1.10^5	1.10^8
Ni-65	1.10^1	1.10^6
Ni-66	1.10^4	1.10^7
Cu-60	1.10^1	1.10^5
Cu-61	1.10^1	1.10^6
Cu-64	1.10^2	1.10^6
Cu-67	1.10^2	1.10^6
Zn-62	1.10^2	1.10^6
Zn-63	1.10^1	1.10^5
Zn-65	1.10^1	1.10^6

Radionuclide	Specific activity, Bq/g	Activity, Bq
Zn-69	1.10^{4}	1.10^{6}
Zn-69m	1.10^{2}	1.10^{6}
Zn-71m	1.10^{1}	1.10^{6}
Zn-72	1.10^{2}	1.10^{6}
Ga-65	1.10^{1}	1.10^{5}
Ga-66	1.10^{1}	1.10^{5}
Ga-67	1.10^{2}	1.10^{6}
Ga-68	1.10^{1}	1.10^{5}
Ga-70	1.10^{2}	1.10^{6}
Ga-72	1.10^{1}	1.10^{5}
Ga-73	1.10^{2}	1.10^{6}
Ge-66	1.10^{1}	1.10^{6}
Ge-67	1.10^{1}	1.10^{5}
Ge-68[a]	1.10^{1}	1.10^{5}
Ge-69	1.10^{1}	1.10^{6}
Ge-71	1.10^{4}	1.10^{8}
Ge-75	1.10^{3}	1.10^{6}
Ge-77	1.10^{1}	1.10^{5}
Ge-78	1.10^{2}	1.10^{6}
As-69	1.10^{1}	1.10^{5}
As-70	1.10^{1}	1.10^{5}
As-71	1.10^{1}	1.10^{6}
As-72	1.10^{1}	1.10^{5}
As-73	1.10^{3}	1.10^{7}
As-74	1.10^{1}	1.10^{6}
As-76	1.10^{2}	1.10^{5}
As-77	1.10^{3}	1.10^{6}
As-78	1.10^{1}	1.10^{5}
Se-70	1.10^{1}	1.10^{6}
Se-73	1.10^{1}	1.10^{6}
Se-73m	1.10^{2}	1.10^{6}
Se-75	1.10^{2}	1.10^{6}
Se-79	1.10^{4}	1.10^{7}
Se-81	1.10^{3}	1.10^{6}
Se-81m	1.10^{3}	1.10^{7}
Se-83	1.10^{1}	1.10^{5}
Br-74	1.10^{1}	1.10^{5}
Br-74m	1.10^{1}	1.10^{5}
Br-75	1.10^{1}	1.10^{6}
Br-76	1.10^{1}	1.10^{5}
Br-77	1.10^{2}	1.10^{6}
Br-80	1.10^{2}	1.10^{5}
Br-80m	1.10^{3}	1.10^{7}
Br-82	1.10^{1}	1.10^{6}
Br-83	1.10^{3}	1.10^{6}
Br-84	1.10^{1}	1.10^{5}
Kr-74	1.10^{2}	1.10^{9}
Kr-76	1.10^{2}	1.10^{9}
Kr-77	1.10^{2}	1.10^{9}
Kr-79	1.10^{3}	1.10^{5}
Kr-81	1.10^{4}	1.10^{7}
Kr-81m	1.10^{3}	1.10^{10}
Kr-83m	1.10^{5}	1.10^{12}
Kr-85	1.10^{5}	1.10^{4}
Kr-85m	1.10^{3}	1.10^{10}
Kr-87	1.10^{2}	1.10^{9}
Kr-88	1.10^{2}	1.10^{9}
Rb-79	1.10^{1}	1.10^{5}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Rb-81	1.10^{1}	1.10^{6}
Rb-81m	1.10^{3}	1.10^{7}
Rb-82m	1.10^{1}	1.10^{6}
Rb-83[a]	1.10^{2}	1.10^{6}
Rb-84	1.10^{1}	1.10^{6}
Rb-86	1.10^{2}	1.10^{5}
Rb-87	1.10^{3}	1.10^{7}
Rb-88	1.10^{2}	1.10^{5}
Rb-89	1.10^{2}	1.10^{5}
Sr-80	1.10^{3}	1.10^{7}
Sr-81	1.10^{1}	1.10^{5}
Sr-82[a]	1.10^{1}	1.10^{5}
Sr-83	1.10^{1}	1.10^{6}
Sr-85	1.10^{2}	1.10^{6}
Sr-85m	1.10^{2}	1.10^{7}
Sr-87m	1.10^{2}	1.10^{6}
Sr-89	1.10^{3}	1.10^{6}
Sr-90[a]	1.10^{2}	1.10^{4}
Sr-91	1.10^{1}	1.10^{5}
Sr-92	1.10^{1}	1.10^{6}
Y-86	1.10^{1}	1.10^{5}
Y-86m	1.10^{2}	1.10^{7}
Y-87[a]	1.10^{1}	1.10^{6}
Y-88	1.10^{1}	1.10^{6}
Y-90	1.10^{3}	1.10^{5}
Y-90m	1.10^{1}	1.10^{6}
Y-91	1.10^{3}	1.10^{6}
Y-91m	1.10^{2}	1.10^{6}
Y-92	1.10^{2}	1.10^{5}
Y-93	1.10^{2}	1.10^{5}
Y-94	1.10^{1}	1.10^{5}
Y-95	1.10^{1}	1.10^{5}
Zr-86	1.10^{2}	1.10^{7}
Zr-88	1.10^{2}	1.10^{6}
Zr-89	1.10^{1}	1.10^{6}
Zr-93[a]	1.10^{3}	1.10^{7}
Zr-95	1.10^{1}	1.10^{6}
Zr-97[a]	1.10^{1}	1.10^{5}
Nb-88	1.10^{1}	1.10^{5}
Nb-89	1.10^{1}	1.10^{5}
Nb-89m	1.10^{1}	1.10^{5}
Nb-90	1.10^{1}	1.10^{5}
Nb-93m	1.10^{4}	1.10^{7}
Nb-94	1.10^{1}	1.10^{6}
Nb-95	1.10^{1}	1.10^{6}
Nb-95m	1.10^{2}	1.10^{7}
Nb-96	1.10^{1}	1.10^{5}
Nb-97	1.10^{1}	1.10^{6}
Nb-98	1.10^{1}	1.10^{5}
Mo-90	1.10^{1}	1.10^{6}
Mo-93	1.10^{3}	1.10^{8}
Mo-93m	1.10^{1}	1.10^{6}
Mo-99	1.10^{2}	1.10^{6}
Mo-101	1.10^{1}	1.10^{6}
Tc-93	1.10^{1}	1.10^{6}
Tc-93m	1.10^{1}	1.10^{6}
Tc-94	1.10^{1}	1.10^{6}
Tc-94m	1.10^{1}	1.10^{5}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Tc-95	1.10^{1}	1.10^{6}
Tc-95m	1.10^{1}	1.10^{6}
Tc-96	1.10^{1}	1.10^{6}
Tc-96m	1.10^{3}	1.10^{7}
Tc-97	1.10^{3}	1.10^{8}
Tc-97m	1.10^{3}	1.10^{7}
Tc-98	1.10^{1}	1.10^{6}
Tc-99	1.10^{4}	1.10^{7}
Tc-99m	1.10^{2}	1.10^{7}
Tc-101	1.10^{2}	1.10^{6}
Tc-104	1.10^{1}	1.10^{5}
Ru-94	1.10^{2}	1.10^{6}
Ru-97	1.10^{2}	1.10^{7}
Ru-103	1.10^{2}	1.10^{6}
Ru-105	1.10^{1}	1.10^{6}
Ru-106[a]	1.10^{2}	1.10^{5}
Rh-99	1.10^{1}	1.10^{6}
Rh-99m	1.10^{1}	1.10^{6}
Rh-100	1.10^{1}	1.10^{6}
Rh-101	1.10^{2}	1.10^{7}
Rh-101m	1.10^{2}	1.10^{7}
Rh-102	1.10^{1}	1.10^{6}
Rh-102m	1.10^{2}	1.10^{6}
Rh-103m	1.10^{4}	1.10^{8}
Rh-105	1.10^{2}	1.10^{7}
Rh-106m	1.10^{1}	1.10^{5}
Rh-107	1.10^{2}	1.10^{6}
Pd-100	1.10^{2}	1.10^{7}
Pd-101	1.10^{2}	1.10^{6}
Pd-103	1.10^{3}	1.10^{8}
Pd-107	1.10^{5}	1.10^{8}
Pd-109	1.10^{3}	1.10^{6}
Ag-102	1.10^{1}	1.10^{5}
Ag-103	1.10^{1}	1.10^{6}
Ag-104	1.10^{1}	1.10^{6}
Ag-104m	1.10^{1}	1.10^{6}
Ag-105	1.10^{2}	1.10^{6}
Ag-106	1.10^{1}	1.10^{6}
Ag-106m	1.10^{1}	1.10^{6}
Ag-108m[a]	1.10^{1}	1.10^{6}
Ag-110m	1.10^{1}	1.10^{6}
Ag-111	1.10^{3}	1.10^{6}
Ag-112	1.10^{1}	1.10^{5}
Ag-115	1.10^{1}	1.10^{5}
Cd-104	1.10^{2}	1.10^{7}
Cd-107	1.10^{3}	1.10^{7}
Cd-109	1.10^{4}	1.10^{6}
Cd-113	1.10^{3}	1.10^{6}
Cd-113m	1.10^{3}	1.10^{6}
Cd-115	1.10^{2}	1.10^{6}
Cd-115m	1.10^{3}	1.10^{6}
Cd-117	1.10^{1}	1.10^{6}
Cd-117m	1.10^{1}	1.10^{6}
In-109	1.10^{1}	1.10^{6}
In-110	1.10^{1}	1.10^{6}
In-110m	1.10^{1}	1.10^{5}
In-111	1.10^{2}	1.10^{6}
In-112	1.10^{2}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
In-113m	1.10^{2}	1.10^{6}
In-114	1.10^{3}	1.10^{5}
In-114m	1.10^{2}	1.10^{6}
In-115	1.10^{3}	1.10^{5}
In-115m	1.10^{2}	1.10^{6}
In-116m	1.10^{1}	1.10^{5}
In-117	1.10^{1}	1.10^{6}
In-117m	1.10^{2}	1.10^{6}
In-119m	1.10^{2}	1.10^{5}
Sn-110	1.10^{2}	1.10^{7}
Sn-111	1.10^{2}	1.10^{6}
Sn-113	1.10^{3}	1.10^{7}
Sn-117m	1.10^{2}	1.10^{6}
Sn-119m	1.10^{3}	1.10^{7}
Sn-121	1.10^{5}	1.10^{7}
Sn-121m[a]	1.10^{3}	1.10^{7}
Sn-123	1.10^{3}	1.10^{6}
Sn-123m	1.10^{2}	1.10^{6}
Sn-125	1.10^{2}	1.10^{5}
Sn-126[a]	1.10^{1}	1.10^{5}
Sn-127	1.10^{1}	1.10^{6}
Sn-128	1.10^{1}	1.10^{6}
Sb-115	1.10^{1}	1.10^{6}
Sb-116	1.10^{1}	1.10^{6}
Sb-116m	1.10^{1}	1.10^{5}
Sb-117	1.10^{2}	1.10^{7}
Sb-118m	1.10^{1}	1.10^{6}
Sb-119	1.10^{3}	1.10^{7}
Sb-120m	1.10^{1}	1.10^{6}
Sb-120	1.10^{2}	1.10^{6}
Sb-122	1.10^{2}	1.10^{4}
Sb-124	1.10^{1}	1.10^{6}
Sb-124m	1.10^{2}	1.10^{6}
Sb-125	1.10^{2}	1.10^{6}
Sb-126	1.10^{1}	1.10^{5}
Sb-126m	1.10^{1}	1.10^{5}
Sb-127	1.10^{1}	1.10^{6}
Sb-128	1.10^{1}	1.10^{5}
Sb-128m	1.10^{1}	1.10^{5}
Sb-129	1.10^{1}	1.10^{6}
Sb-130	1.10^{1}	1.10^{5}
Sb-131	1.10^{1}	1.10^{6}
Te-116	1.10^{2}	1.10^{7}
Te-121	1.10^{1}	1.10^{6}
Te-121m	1.10^{2}	1.10^{6}
Te-123	1.10^{3}	1.10^{6}
Te-123m	1.10^{2}	1.10^{7}
Te-125m	1.10^{3}	1.10^{7}
Te-127	1.10^{3}	1.10^{6}
Te-127m	1.10^{3}	1.10^{7}
Te-129	1.10^{2}	1.10^{6}
Te-129m	1.10^{3}	1.10^{6}
Te-131	1.10^{2}	1.10^{5}
Te-131m	1.10^{1}	1.10^{6}
Te-132	1.10^{2}	1.10^{7}
Te-133	1.10^{1}	1.10^{5}
Te-133m	1.10^{1}	1.10^{5}
Te-134	1.10^{1}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
I-120	1.10^{1}	1.10^{5}
I-120m	1.10^{1}	1.10^{5}
I-121	1.10^{2}	1.10^{6}
I-123	1.10^{2}	1.10^{7}
I-124	1.10^{1}	1.10^{6}
I-125	1.10^{3}	1.10^{6}
I-126	1.10^{2}	1.10^{6}
I-128	1.10^{2}	1.10^{5}
I-129	1.10^{2}	1.10^{5}
I-130	1.10^{1}	1.10^{6}
I-131	1.10^{2}	1.10^{6}
I-132	1.10^{1}	1.10^{5}
I-132m	1.10^{2}	1.10^{6}
I-133	1.10^{1}	1.10^{6}
I-134	1.10^{1}	1.10^{5}
I-135	1.10^{1}	1.10^{6}
Xe-120	1.10^{2}	1.10^{9}
Xe-121	1.10^{2}	1.10^{9}
Xe-122[a]	1.10^{2}	1.10^{9}
Xe-123	1.10^{2}	1.10^{9}
Xe-125	1.10^{3}	1.10^{9}
Xe-127	1.10^{3}	1.10^{5}
Xe-129m	1.10^{3}	1.10^{4}
Xe-131m	1.10^{4}	1.10^{4}
Xe-133m	1.10^{3}	1.10^{4}
Xe-133	1.10^{3}	1.10^{4}
Xe-135	1.10^{3}	1.10^{10}
Xe-135m	1.10^{2}	1.10^{9}
Xe-138	1.10^{2}	1.10^{9}
Cs-125	1.10^{1}	1.10^{4}
Cs-127	1.10^{2}	1.10^{5}
Cs-129	1.10^{2}	1.10^{5}
Cs-130	1.10^{2}	1.10^{6}
Cs-131	1.10^{3}	1.10^{6}
Cs-132	1.10^{1}	1.10^{5}
Cs-134m	1.10^{3}	1.10^{5}
Cs-134	1.10^{1}	1.10^{4}
Cs-135	1.10^{4}	1.10^{7}
Cs-135m	1.10^{1}	1.10^{6}
Cs-136	1.10^{1}	1.10^{5}
Cs-137[a]	1.10^{1}	1.10^{4}
Cs-138	1.10^{1}	1.10^{4}
Ba-126	1.10^{2}	1.10^{7}
Ba-128	1.10^{2}	1.10^{7}
Ba-131	1.10^{2}	1.10^{6}
Ba-131m	1.10^{2}	1.10^{7}
Ba-133	1.10^{2}	1.10^{6}
Ba-133m	1.10^{2}	1.10^{6}
Ba-135m	1.10^{2}	1.10^{6}
Ba-137m	1.10^{1}	1.10^{6}
Ba-139	1.10^{2}	1.10^{5}
Ba-140[a]	1.10^{1}	1.10^{5}
Ba-141	1.10^{2}	1.10^{5}
Ba-142	1.10^{2}	1.10^{6}
La-131	1.10^{1}	1.10^{6}
La-132	1.10^{1}	1.10^{6}
La-135	1.10^{3}	1.10^{7}
La-137	1.10^{3}	1.10^{7}

Radionuclide	Specific activity, Bq/g	Activity, Bq
La-138	1.10^{1}	1.10^{6}
La-140	1.10^{1}	1.10^{5}
La-141	1.10^{2}	1.10^{5}
La-142	1.10^{1}	1.10^{5}
La-143	1.10^{2}	1.10^{5}
Ce-134[a]	1.10^{3}	1.10^{7}
Ce-135	1.10^{1}	1.10^{6}
Ce-137	1.10^{3}	1.10^{7}
Ce-137m	1.10^{3}	1.10^{6}
Ce-139	1.10^{2}	1.10^{6}
Ce-141	1.10^{2}	1.10^{7}
Ce-143	1.10^{2}	1.10^{6}
Ce-144[a]	1.10^{2}	1.10^{5}
Pr-136	1.10^{1}	1.10^{5}
Pr-137	1.10^{2}	1.10^{6}
Pr-138m	1.10^{1}	1.10^{6}
Pr-139	1.10^{2}	1.10^{7}
Pr-142	1.10^{2}	1.10^{5}
Pr-142m	1.10^{7}	1.10^{9}
Pr-143	1.10^{4}	1.10^{6}
Pr-144	1.10^{2}	1.10^{5}
Pr-145	1.10^{3}	1.10^{5}
Pr-147	1.10^{1}	1.10^{5}
Nd-136	1.10^{2}	1.10^{6}
Nd-138	1.10^{3}	1.10^{7}
Nd-139	1.10^{2}	1.10^{6}
Nd-139m	1.10^{1}	1.10^{6}
Nd-141	1.10^{2}	1.10^{7}
Nd-147	1.10^{2}	1.10^{6}
Nd-149	1.10^{2}	1.10^{6}
Nd-151	1.10^{1}	1.10^{5}
Pm-141	1.10^{1}	1.10^{5}
Pm-143	1.10^{2}	1.10^{6}
Pm-144	1.10^{1}	1.10^{6}
Pm-145	1.10^{3}	1.10^{7}
Pm-146	1.10^{1}	1.10^{6}
Pm-147	1.10^{4}	1.10^{7}
Pm-148	1.10^{1}	1.10^{5}
Pm-148m	1.10^{1}	1.10^{6}
Pm-149	1.10^{3}	1.10^{6}
Pm-150	1.10^{1}	1.10^{5}
Pm-151	1.10^{2}	1.10^{6}
Sm-141	1.10^{1}	1.10^{5}
Sm-141m	1.10^{1}	1.10^{6}
Sm-142	1.10^{2}	1.10^{7}
Sm-145	1.10^{2}	1.10^{7}
Sm-146	1.10^{1}	1.10^{5}
Sm-147	1.10^{1}	1.10^{4}
Sm-151	1.10^{4}	1.10^{8}
Sm-153	1.10^{2}	1.10^{6}
Sm-155	1.10^{2}	1.10^{6}
Sm-156	1.10^{2}	1.10^{6}
Eu-145	1.10^{1}	1.10^{6}
Eu-146	1.10^{1}	1.10^{6}
Eu-147	1.10^{2}	1.10^{6}
Eu-148	1.10^{1}	1.10^{6}
Eu-149	1.10^{2}	1.10^{7}
Eu-150	1.10^{1}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Eu-150m	1.10^{3}	1.10^{6}
Eu-152	1.10^{1}	1.10^{6}
Eu-152m	1.10^{2}	1.10^{6}
Eu-154	1.10^{1}	1.10^{6}
Eu-155	1.10^{2}	1.10^{7}
Eu-156	1.10^{1}	1.10^{6}
Eu157	1.10^{2}	1.10^{6}
Eu-158	1.10^{1}	1.10^{5}
Gd-145	1.10^{1}	1.10^{5}
Gd-146[a]	1.10^{1}	1.10^{6}
Gd-147	1.10^{1}	1.10^{6}
Gd-148	1.10^{1}	1.10^{4}
Gd-149	1.10^{2}	1.10^{6}
Gd-151	1.10^{2}	1.10^{7}
Gd-152	1.10^{1}	1.10^{4}
Gd-153	1.10^{2}	1.10^{7}
Gd-159	1.10^{3}	1.10^{6}
Tb-147	1.10^{1}	1.10^{6}
Tb-149	1.10^{1}	1.10^{6}
Tb-150	1.10^{1}	1.10^{6}
Tb-151	1.10^{1}	1.10^{6}
Tb-153	1.10^{2}	1.10^{7}
Tb-154	1.10^{1}	1.10^{6}
Tb-155	1.10^{2}	1.10^{7}
Tb-156	1.10^{1}	1.10^{6}
Tb-156m l	1.10^{3}	1.10^{7}
Tb-156m s	1.10^{4}	1.10^{7}
Tb-157	1.10^{4}	1.10^{7}
Tb-158	1.10^{1}	1.10^{6}
Tb-160	1.10^{1}	1.10^{6}
Tb-161	1.10^{3}	1.10^{6}
Dy-155	1.10^{1}	1.10^{6}
Dy-157	1.10^{2}	1.10^{6}
Dy-159	1.10^{3}	1.10^{7}
Dy-165	1.10^{3}	1.10^{6}
Dy-166	1.10^{3}	1.10^{6}
Ho-155	1.10^{2}	1.10^{6}
Ho-157	1.10^{2}	1.10^{6}
Ho-159	1.10^{2}	1.10^{6}
Ho-161	1.10^{2}	1.10^{7}
Ho-162	1.10^{2}	1.10^{7}
Ho-162m	1.10^{1}	1.10^{6}
Ho-164	1.10^{3}	1.10^{6}
Ho-164m	1.10^{3}	1.10^{7}
Ho-166	1.10^{3}	1.10^{5}
Ho-166m	1.10^{1}	1.10^{6}
Ho-167	1.10^{2}	1.10^{6}
Er-161	1.10^{1}	1.10^{6}
Er-165	1.10^{3}	1.10^{7}
Er-169	1.10^{4}	1.10^{7}
Er-171	1.10^{2}	1.10^{6}
Er-172	1.10^{2}	1.10^{6}
Tm-162	1.10^{1}	1.10^{6}
Tm-166	1.10^{1}	1.10^{6}
Tm-167	1.10^{2}	1.10^{6}
Tm-170	1.10^{3}	1.10^{6}
Tm-171	1.10^{4}	1.10^{8}
Tm-172	1.10^{2}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Tm-173	1.10^{2}	1.10^{6}
Tm-175	1.10^{1}	1.10^{6}
Yb-162	1.10^{2}	1.10^{7}
Yb-166	1.10^{2}	1.10^{7}
Yb-167	1.10^{2}	1.10^{6}
Yb-169	1.10^{2}	1.10^{7}
Yb-175	1.10^{3}	1.10^{7}
Yb-177	1.10^{2}	1.10^{6}
Yb-178	1.10^{3}	1.10^{6}
Lu-169	1.10^{1}	1.10^{6}
Lu-170	1.10^{1}	1.10^{6}
Lu-171	1.10^{1}	1.10^{6}
Lu-172	1.10^{1}	1.10^{6}
Lu-173	1.10^{2}	1.10^{7}
Lu-174	1.10^{2}	1.10^{7}
Lu-174m	1.10^{2}	1.10^{7}
Lu-176	1.10^{2}	1.10^{6}
Lu-176m	1.10^{3}	1.10^{6}
Lu-177	1.10^{3}	1.10^{7}
Lu-177m	1.10^{1}	1.10^{6}
Lu-178	1.10^{2}	1.10^{5}
Lu-178m	1.10^{1}	1.10^{5}
Lu-179	1.10^{3}	1.10^{6}
Hf-170	1.10^{2}	1.10^{6}
Hf-172[a]	1.10^{1}	1.10^{6}
Hf-173	1.10^{2}	1.10^{6}
Hf-175	1.10^{2}	1.10^{6}
Hf-177m	1.10^{1}	1.10^{5}
Hf-178m	1.10^{1}	1.10^{6}
Hf-179m	1.10^{1}	1.10^{6}
Hf-180m	1.10^{1}	1.10^{6}
Hf-181	1.10^{1}	1.10^{6}
Hf-182	1.10^{2}	1.10^{6}
Hf-182m	1.10^{1}	1.10^{6}
Hf-183	1.10^{1}	1.10^{6}
Hf-184	1.10^{2}	1.10^{6}
Ta-172	1.10^{1}	1.10^{6}
Ta-173	1.10^{1}	1.10^{6}
Ta-174	1.10^{1}	1.10^{6}
Ta-175	1.10^{1}	1.10^{6}
Ta-176	1.10^{1}	1.10^{6}
Ta-177	1.10^{2}	1.10^{7}
Ta-178	1.10^{1}	1.10^{6}
Ta-179	1.10^{3}	1.10^{7}
Ta-180	1.10^{1}	1.10^{6}
Ta-180m	1.10^{3}	1.10^{7}
Ta-182	1.10^{1}	1.10^{4}
Ta-182m	1.10^{2}	1.10^{6}
Ta-183	1.10^{2}	1.10^{6}
Ta-184	1.10^{1}	1.10^{6}
Ta-185	1.10^{2}	1.10^{5}
Ta-186	1.10^{1}	1.10^{5}
W-176	1.10^{2}	1.10^{6}
W-177	1.10^{1}	1.10^{6}
W-178[a]	1.10^{1}	1.10^{6}
W-179	1.10^{2}	1.10^{7}
W-181	1.10^{3}	1.10^{7}
W-185	1.10^{4}	1.10^{7}

Radionuclide	Specific activity, Bq/g	Activity, Bq
W-187	1.10^{2}	1.10^{6}
W-188[a]	1.10^{2}	1.10^{5}
Re-177	1.10^{1}	1.10^{6}
Re-178	1.10^{1}	1.10^{6}
Re-181	1.10^{1}	1.10^{6}
Re-182	1.10^{1}	1.10^{6}
Re-182m	1.10^{1}	1.10^{6}
Re-184	1.10^{1}	1.10^{6}
Re-184m	1.10^{2}	1.10^{6}
Re-186	1.10^{3}	1.10^{6}
Re-186m	1.10^{3}	1.10^{7}
Re-187	1.10^{6}	1.10^{9}
Re-188	1.10^{2}	1.10^{5}
Re-188m	1.10^{2}	1.10^{7}
Re-189[a]	1.10^{2}	1.10^{6}
Os-180	1.10^{2}	1.10^{7}
Os-181	1.10^{1}	1.10^{6}
Os-182	1.10^{2}	1.10^{6}
Os-185	1.10^{1}	1.10^{6}
Os-189m	1.10^{4}	1.10^{7}
Os-191	1.10^{2}	1.10^{7}
Os-191m	1.10^{3}	1.10^{7}
Os-193	1.10^{2}	1.10^{6}
Os-194[a]	1.10^{2}	1.10^{5}
Ir-182	1.10^{1}	1.10^{5}
Ir-184	1.10^{1}	1.10^{6}
Ir-185	1.10^{1}	1.10^{6}
Ir-186	1.10^{1}	1.10^{6}
Ir-186m	1.10^{1}	1.10^{6}
Ir-187	1.10^{2}	1.10^{6}
Ir-188	1.10^{1}	1.10^{6}
Ir-189[a]	1.10^{2}	1.10^{7}
Ir-190	1.10^{1}	1.10^{6}
Ir-190m l	1.10^{1}	1.10^{6}
Ir-190m s	1.10^{4}	1.10^{7}
Ir-192	1.10^{1}	1.10^{4}
Ir-192m	1.10^{2}	1.10^{7}
Ir-193m	1.10^{4}	1.10^{7}
Ir-194	1.10^{2}	1.10^{5}
Ir-194m	1.10^{1}	1.10^{6}
Ir-195	1.10^{2}	1.10^{6}
Ir-195m	1.10^{2}	1.10^{6}
Pt-186	1.10^{1}	1.10^{6}
Pt-188[a]	1.10^{1}	1.10^{6}
Pt-189	1.10^{2}	1.10^{6}
Pt-191	1.10^{2}	1.10^{6}
Pt-193	1.10^{4}	1.10^{7}
Pt-193m	1.10^{3}	1.10^{7}
Pt-195m	1.10^{2}	1.10^{6}
Pt-197	1.10^{3}	1.10^{6}
Pt-197m	1.10^{2}	1.10^{6}
Pt-199	1.10^{2}	1.10^{6}
Pt-200	1.10^{2}	1.10^{6}
Au-193	1.10^{2}	1.10^{7}
Au-194	1.10^{1}	1.10^{6}
Au-195	1.10^{2}	1.10^{7}
Au-198	1.10^{2}	1.10^{6}
Au-198m	1.10^{1}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Au-199	1.10^{2}	1.10^{6}
Au-200	1.10^{2}	1.10^{5}
Au-200m	1.10^{1}	1.10^{6}
Au-201	1.10^{2}	1.10^{6}
Hg-193	1.10^{2}	1.10^{6}
Hg-193m	1.10^{1}	1.10^{6}
Hg-194[a]	1.10^{1}	1.10^{6}
Hg-195	1.10^{2}	1.10^{6}
Hg-195m[a]	1.10^{2}	1.10^{6}
Hg-197	1.10^{2}	1.10^{7}
Hg-197m	1.10^{2}	1.10^{6}
Hg-199m	1.10^{2}	1.10^{6}
Hg-203	1.10^{2}	1.10^{5}
Tl-194	1.10^{1}	1.10^{6}
Tl-194m	1.10^{1}	1.10^{6}
Tl-195	1.10^{1}	1.10^{6}
Tl-197	1.10^{2}	1.10^{6}
Tl-198	1.10^{1}	1.10^{6}
Tl-198m	1.10^{1}	1.10^{6}
Tl-199	1.10^{2}	1.10^{6}
Tl-200	1.10^{1}	1.10^{6}
Tl-201	1.10^{2}	1.10^{6}
Tl-202	1.10^{2}	1.10^{6}
Tl-204	1.10^{4}	1.10^{4}
Pb-195m	1.10^{1}	1.10^{6}
Pb-198	1.10^{2}	1.10^{6}
Pb-199	1.10^{1}	1.10^{6}
Pb-200	1.10^{2}	1.10^{6}
Pb-201	1.10^{1}	1.10^{6}
Pb-202	1.10^{3}	1.10^{6}
Pb-202m	1.10^{1}	1.10^{6}
Pb-203	1.10^{2}	1.10^{6}
Pb-205	1.10^{4}	1.10^{7}
Pb-209	1.10^{5}	1.10^{6}
Pb-210[a]	1.10^{1}	1.10^{4}
Pb-211	1.10^{2}	1.10^{6}
Pb-212[a]	1.10^{1}	1.10^{5}
Pb-214	1.10^{2}	1.10^{6}
Bi-200	1.10^{1}	1.10^{6}
Bi-201	1.10^{1}	1.10^{6}
Bi-202	1.10^{1}	1.10^{6}
Bi-203	1.10^{1}	1.10^{6}
Bi-205	1.10^{1}	1.10^{6}
Bi-206	1.10^{1}	1.10^{5}
Bi-207	1.10^{1}	1.10^{6}
Bi-210	1.10^{3}	1.10^{6}
Bi-210m[a]	1.10^{1}	1.10^{5}
Bi-212[a]	1.10^{1}	1.10^{5}
Bi-213	1.10^{2}	1.10^{6}
Bi-214	1.10^{1}	1.10^{5}
Po-203	1.10^{1}	1.10^{6}
Po-205	1.10^{1}	1.10^{6}
Po-206	1.10^{1}	1.10^{6}
Po-207	1.10^{1}	1.10^{6}
Po-208	1.10^{1}	1.10^{4}
Po-209	1.10^{1}	1.10^{4}
Po-210	1.10^{1}	1.10^{4}
At-207	1.10^{1}	1.10^{6}

Radionuclide	Specific activity, Bq/g	Activity, Bq
At-211	1.10^{3}	1.10^{7}
Fr-222	1.10^{3}	1.10^{5}
Fr-223	1.10^{2}	1.10^{6}
Rn-220[a]	1.10^{4}	1.10^{7}
Rn-222[a]	1.10^{1}	1.10^{8}
Ra-223[a]	1.10^{2}	1.10^{5}
Ra-224[a]	1.10^{1}	1.10^{5}
Ra-225	1.10^{2}	1.10^{5}
Ra-226[a]	1.10^{1}	1.10^{4}
Ra-227	1.10^{2}	1.10^{6}
Ra-228[a]	1.10^{1}	1.10^{5}
Ac-224	1.10^{2}	1.10^{6}
Ac-225[a]	1.10^{1}	1.10^{4}
Ac-226	1.10^{2}	1.10^{5}
Ac-227[a]	1.10^{-1}	1.10^{3}
Ac-228	1.10^{1}	1.10^{6}
Th-226[a]	1.10^{3}	1.10^{7}
Th-227	1.10^{1}	1.10^{4}
Th-228[a]	1.10^{0}	1.10^{4}
Th-229[a]	1.10^{0}	1.10^{3}
Th-230	1.10^{0}	1.10^{4}
Th-231	1.10^{3}	1.10^{7}
Th-232	1.10^{1}	1.10^{4}
Th-234[a]	1.10^{3}	1.10^{5}
Pa-227	1.10^{1}	1.10^{6}
Pa-228	1.10^{1}	1.10^{6}
Pa-230	1.10^{1}	1.10^{6}
Pa-231	1.10^{0}	1.10^{3}
Pa-232	1.10^{1}	1.10^{6}
Pa-233	1.10^{2}	1.10^{7}
Pa-234	1.10^{1}	1.10^{6}
U-230[a]	1.10^{1}	1.10^{5}
U-231	1.10^{2}	1.10^{7}
U-232[a]	1.10^{0}	1.10^{3}
U-233	1.10^{1}	1.10^{4}
U-234	1.10^{1}	1.10^{4}
U-235[a]	1.10^{1}	1.10^{4}
U-236	1.10^{1}	1.10^{4}
U-237	1.10^{2}	1.10^{6}
U-238[a]	1.10^{1}	1.10^{4}
U-239	1.10^{2}	1.10^{6}
U-240	1.10^{3}	1.10^{7}
U-240[a]	1.10^{1}	1.10^{6}
Np-232	1.10^{1}	1.10^{6}
Np-233	1.10^{2}	1.10^{7}
Np-234	1.10^{1}	1.10^{6}
Np-235	1.10^{3}	1.10^{7}
Np-236	1.10^{2}	1.10^{5}
Np-236m	1.10^{3}	1.10^{7}
Np-237[a]	1.10^{0}	1.10^{3}
Np-238	1.10^{2}	1.10^{6}
Np-239	1.10^{2}	1.10^{7}
Np-240	1.10^{1}	1.10^{6}
Pu-234	1.10^{2}	1.10^{7}
Pu-235	1.10^{2}	1.10^{7}
Pu-236	1.10^{1}	1.10^{4}
Pu-237	1.10^{3}	1.10^{7}
Pu-238	1.10^{0}	1.10^{4}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Pu-239	1.10^{0}	1.10^{4}
Pu-240	1.10^{0}	1.10^{3}
Pu-241	1.10^{2}	1.10^{5}
Pu-242	1.10^{0}	1.10^{4}
Pu-243	1.10^{3}	1.10^{7}
Pu-244	1.10^{0}	1.10^{4}
Pu-245	1.10^{2}	1.10^{6}
Pu-246	1.10^{2}	1.10^{6}
Am-237	1.10^{2}	1.10^{6}
Am-238	1.10^{1}	1.10^{6}
Am-239	1.10^{2}	1.10^{6}
Am-240	1.10^{1}	1.10^{6}
Am-241	1.10^{0}	1.10^{4}
Am-242	1.10^{3}	1.10^{6}
Am-242m[a]	1.10^{0}	1.10^{4}
Am-243[a]	1.10^{0}	1.10^{3}
Am-244	1.10^{1}	1.10^{6}
Am-244m	1.10^{4}	1.10^{7}
Am-245	1.10^{3}	1.10^{6}
Am-246	1.10^{1}	1.10^{5}
Am-246m	1.10^{1}	1.10^{6}
Cm-238	1.10^{2}	1.10^{7}
Cm-240	1.10^{2}	1.10^{5}
Cm-241	1.10^{2}	1.10^{6}
Cm-242	1.10^{2}	1.10^{5}
Cm-243	1.10^{0}	1.10^{4}
Cm-244	1.10^{1}	1.10^{4}
Cm-245	1.10^{0}	1.10^{3}
Cm-246	1.10^{0}	1.10^{3}
Cm-247	1.10^{0}	1.10^{4}
Cm-248	1.10^{0}	1.10^{3}
Cm-249	1.10^{3}	1.10^{6}
Cm-250	1.10^{-1}	1.10^{3}
Bk-245	1.10^{2}	1.10^{6}
Bk-246	1.10^{1}	1.10^{6}
Bk-247	1.10^{0}	1.10^{4}
Bk-249	1.10^{3}	1.10^{6}
Bk-250	1.10^{1}	1.10^{6}
Cf-244	1.10^{4}	1.10^{7}
Cf-246	1.10^{3}	1.10^{6}
Cf-248	1.10^{1}	1.10^{4}
Cf-249	1.10^{0}	1.10^{3}
Cf-250	1.10^{1}	1.10^{4}
Cf-251	1.10^{0}	1.10^{3}
Cf-252	1.10^{1}	1.10^{4}
Cf-253	1.10^{2}	1.10^{5}
Cf-254	1.10^{0}	1.10^{3}
Es-250	1.10^{2}	1.10^{6}
Es-251	1.10^{2}	1.10^{7}
Es-253	1.10^{2}	1.10^{5}
Es-254	1.10^{1}	1.10^{4}
Es-254m	1.10^{2}	1.10^{6}
Fm-252	1.10^{3}	1.10^{6}
Fm-253	1.10^{2}	1.10^{6}
Fm-254	1.10^{4}	1.10^{7}
Fm-255	1.10^{3}	1.10^{6}
Fm-257	1.10^{1}	1.10^{5}
Md-257	1.10^{2}	1.10^{7}

Radionuclide	Specific activity, Bq/g	Activity, Bq
Md-258m	1.10^2	1.10^5

Notes:

(1) Potassium salts are released when present in quantities of less than 1000 kg.

(a) Prefix [a] denotes the radionuclides with daughter nuclides which have been taken into account in the evaluation of the doses.

The daughter nuclides of the radionuclides designated by the prefix [a] in Table No.1 are as follows:

Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Y-87	Sr-87m
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Sn-121m	Sn-121 (0.776)
Sn-126	Sb-126m
Xe-122	I-122
Cs-137	Ba-137m
Ba-140	La-140
Ce-134	La-134
Ce-144	Pr-144
Gd-146	Eu-146
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m (0.241)
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195 (0.542)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Bi-210m	Tl-206
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Rn-220	Po-216
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Po-213 (0.978), Tl-209 (0.0216), Pb-209 (0.978)
Ac-227	Fr-223 (0.0138)
Th-226	Ra-222, Rn-218, Po-214
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212,Tl-208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-240	Np-240m
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

Table No. 2

Specific activities levels of radionuclides under which activities are not subject to regulation (for large quantities – over 1000 kg)

Radionuclide	Specific activity, Bq/g
H-3	100
Be-7	10
C-14	1
F-18	10
Na-22	0.1
Na-24	1
Si-31	1000
P-32	1000
P-33	1000
S-35	100
Cl-36	1
Cl-38	10
K-42	100
K-43	10
Ca-45	100
Ca-47	10
Sc-46	0.1
Sc-47	100
Sc-48	1
V-48	1
Cr-51	100
Mn-51	10
Mn-52	1
Mn-52m	10
Mn-53	100
Mn-54	0.1
Mn-56	10
Fe-52[a]	10
Fe-55	1000
Fe-59	1
Co-55	10
Co-56	0.1
Co-57	1
Co-58	1
Co-58m	10 000
Co-60	0.1
Co-60m	1000
Co-61	100
Co-62m	10
Ni-59	100
Ni-63	100
Ni-65	10
Cu-64	100
Zn-65	0.1
Zn-69	1000
Zn-69m[a]	10
Ga-72	10
Ge-71	10 000
As-73	1000
As-74	10
As-76	10
As-77	1000
Se-75	1
Br-82	1
Rb-86	100
Sr-85	1
Sr-85m	100
Sr-87m	100
Sr-89	1000
Sr-90[a]	1
Sr-91[a]	10
Sr-92	10
Y-90	1000
Y-91	100
Y-91m	100
Y-92	100
Y-93	100
Zr-93	10
Zr-95[a]	1
Zr-97[a]	10
Nb-93m	10
Nb-94	0.1
Nb-95	1
Nb-97[a]	10
Nb-98	10
Mo-90	10
Mo-93	10
Mo-99[a]	10
Mo-101[a]	10
Tc-96	1
Tc-96m	1000
Tc-97	10
Tc-97m	100
Tc-99	1
Tc-99m	100
Ru-97	10
Ru-103[a]	1
Ru-105[a]	10
Ru-106[a]	0.1
Rh-103m	10 000
Rh-105	100
Pd-103[a]	1000
Pd-109[a]	100
Ag-105	1
Ag-110m[a]	0.1
Ag-111	100
Cd-109[a]	1
Cd-115[a]	10
Cd-115m[a]	100
In-111	10
In-113m	100
In-114m[a]	10
In-115m	100
Sn-113[a]	1
Sn-125	10
Sb-122	10

Radionuclide	Specific activity, Bq/g
Sb-124	1
Sb-125[a]	0.1
Te-123m	1
Te-125m	1000
Te-127	1000
Te-127m[a]	10
Te-129	100
Te-129m[a]	10
Te-131	100
Te-131m[a]	10
Te-132[a]	1
Te-133	10
Te-133m	10
Te-134	10
I-123	100
I-125	100
I-126	10
I-129	0.01
I-130	10
I-131	10
I-132	10
I-133	10
I-134	10
I-135	10
Cs-129	10
Cs-131	1000
Cs-132	10
Cs-134	0.1
Cs-134m	1000
Cs-135	100
Cs-136	1
Cs-137[a]	0.1
Cs-138	10
Ba-131	10
Ba-140	1
La-140	1
Ce-139	1
Ce-141	100
Ce-143	10
Ce-144[a]	10
Pr-142	100
Pr-143	1000
Nd-147	100
Nd-149	100
Pm-147	1000
Pm-149	1000
Sm-151	1000
Sm-153	100
Eu-152	0.1
Eu-152m	100
Eu-154	0.1
Eu-155	1
Gd-153	10
Gd-159	100
Tb-160	1
Dy-165	1000
Dy-166	100

Radionuclide	Specific activity, Bq/g
Ho-166	100
Er-169	1000
Er-171	100
Tm-170	100
Tm-171	1000
Yb-175	100
Lu-177	100
Hf-181	1
Ta-182	0.1
W-181	10
W-185	1000
W-187	10
Re-186	1000
Re-188	100
Os-185	1
Os-191	100
Os-191m	1000
Os-193	100
Ir-190	1
Ir-192	1
Ir-194	100
Pt-191	10
Pt-193m	1000
Pt-197	1000
Pt-197m	100
Au-198	10
Au-199	100
Hg-197	100
Hg-197m	100
Hg-203	10
Tl-200	10
Tl-201	100
Tl-202	10
Tl-204	1
Pb-203	10
Bi-206	1
Bi-207	0.1
Po-203	10
Po-205	10
Po-207	10
At-211	1000
Ra-225	10
Ra-227	100
Th-226	1000
Th-229	0.1
Pa-230	10
Pa-233	10
U-230	10
U-231	100
U-232[a]	0.1
U-233	1
U-236	10
U-237	100
U-239	100
U-240[a]	100
Np-237[a]	1
Np-239	100

Radionuclide	Specific activity, Bq/g
Np-240	10
Pu-234	100
Pu-235	100
Pu-236	1
Pu-237	100
Pu-238	0.1
Pu-239	0.1
Pu-240	0.1
Pu-241	10
Pu-242	0.1
Pu-243	1000
Pu-244[a]	0.1
Am-241	0.1
Am-242	1000
Am-242m[a]	0.1
Am-243[a]	0.1
Cm-242	10
Cm-243	1
Cm-244	1
Cm-245	0.1
Cm-246	0.1
Cm-247[a]	0.1
Cm-248	0.1
Bk-249	100
Cf-246	1000
Cf-248	1
Cf-249	0.1
Cf-250	1
Cf-251	0.1
Cf-252	1
Cf-253	100
Cf-254	1
Es-253	100
Es-254[a]	0.1
Es-254m[a]	10
Fm-254	10 000
Fm-255	100

Note. Prefix [a] denotes the radionuclides with daughter nuclides that are taken into account in the dose evaluation.

The daughter nuclides of the radionuclides designated by the prefix [a] in Table No. 2 are as follows:

Fe-52	Mn-52m
Zn-69m	Zn-69
Sr-90	Y-90
Sr-91	Y-91m
Zr-95	Nb-95
Zr-97	Nb-97m, Nb-97
Nb-97	Nb-97m
Mo-99	Tc-99m
Mo-101	Tc-101
Ru-103	Rh-103m
Ru-105	Rh-105m
Ru-106	Rh-106
Pd-103	Rh-103m
Pd-109	Ag-109m
Ag-110m	Ag-110
Cd-109	Ag-109m
Cd-115	In-115m
Cd-115m	In-115m
In-114m	In-114
Sn-113	In-113m
Sb-125	Te-125m
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te132	I-132
Cs-137	Ba-137m
Ce-144	Pr-144, Pr-144m
U-232sec	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208
U-240	Np-240m, Np-240
Np237	Pa-233
Pu-244	U-240, Np-240m, Np-240
Am-242m	Np-238
Am-243	Np-239
Cm-247	Pu-243
Es-254	Bk-250
Es-254m	Fm-254

Table No. 3

Specific activities levels of natural radionuclides to release from regulation

Radionuclide	Specific activity, Bq/g
K-40	10
Each radionuclide of the families of uranium-238 and thorium-232	1

Table No. 4

Specific activities levels for release from regulation of metals to be recycled (1, 2 and 3)

Radionuclide	Specific activity, Bq/g
H-3	1000
C-14	100
Na-22	1
S-35	1000
Cl-36	10
Ca-45	1000
Sc-46	1
Mn-53	10 000
Mn-54	1
Fe-55	10 000
Co-56	1
Co-57	10
Co-58	1
Co-60	1
Ni-59	10 000
Ni-63	10 000
Zn-65	1
As-73	100
Se-75	1
Sr-85	1
Sr-90	10
Y-91	10
Zr-93	10
Zr-95	1
Nb-93m	1000
Nb-94	1
Mo-93	100
Tc-97	1000
Tc-97m	1000
Tc-99	100
Ru-106	1
Ag-110m	1
Cd-109	10
Sn-113	1
Sb-124	1
Sb-125	10
Te-123m	10
Te-127m	100
I-125	1
I-129	1
Cs-134	1
Cs-135	10
Cs-137	1
Ce-139	10
Ce-144	10
Pm-147	10 000
Sm-151	10 000
Eu-152	1
Eu-154	1
Eu-155	10
Gd-153	10
Tb-160	1
Tm-170	100
Tm-171	1000
Ta-182	1
W-181	100
W-185	1000
Os-185	1
Ir-192	1
Tl-204	1000
Pb-210	1
Bi-207	1
Po-210	1
Ra-226	1
Ra-228	1
Th-228	1
Th-229	1
Th-230	1
Th-232	1
Pa-231	1
U-232	1
U-233	1
U-234	1
U-235	1
U-236	10
U-238	1
Np-237	1
Pu-236	1
Pu-238	1
Pu-239	1
Pu-240	1
Pu-241	10
Pu-242	1
Pu-244	1
Am-241	1
Am-242m	1
Am-243	1
Cm-242	10
Cm-243	1
Cm-244	1
Cm-245	1
Cm-246	1
Cm-247	1
Cm-248	1
Bk-249	100
Cf-248	10
Cf-249	1
Cf-250	1
Cf-251	1
Cf-252	1
Cf-254	1
Es-254	10

Notes:

1. In the case of a mixture of radionuclides in the material, the sum of the ratios of the specific activities of the individual radionuclides to the relevant activity limits must be less than or equal to 1.

2. The short-lived radionuclides belonging to the respective radioactive decay chains are included in the specific

activity of their maternal nuclides, and therefore their specific activity limits are not given separately in the table.

3. For radionuclides not listed in Table No. 4, the release levels (specific activity limits) are determined on a case-by-case basis by the Nuclear Regulatory Agency and the Ministry of Health.

Annex No. 4
to Article 50, paragraph 2, point 2

Typical contents of the radiation protection instruction for SIR facilities

1. Purpose and scope of the instruction.

2. Allocation of responsibilities for providing radiation protection.

3. Main characteristics and features of used and stored SIR:

a) sealed sources:

aa) categorization of the sources under §1, point 9 of the Additional Provisions of the Act on the Safe Use of Nuclear Energy and the related activities with them;

bb) types and number of sources, single and total activity of the radionuclides contained therein;

b) unsealed sources:

aa) types and number of sources, single and total activity of radionuclides, maximum activity at work places, annual consumption;

bb) type and class of work with unsealed sources;

c) ionising radiation generators:

aa) types and number of ionising radiation generators;

bb) supply voltages and anode current (maximum and operating values), ray yield of the X-ray tubes.

4. Designation of a controlled area (serviced, semi-service and non-serviced premises) and surveillance area, schematic location.

5. Determination of dose constraints and control levels for optimisation of radiation protection.

6. Determination of specific technical and organisational measures for radiation protection.

7. Means of individual protection when working with sources of ionising radiation (types, number, intended purpose, internal rules for their use).

8. Recording and control of sealed and unsealed sources and providing physical protection.

9. Recording and control of generated radioactive waste.

10. Internal administrative control over observance of the requirements and rules for radiation protection in the facility, specialized training and medical surveillance of the personnel.

Note. The radiation protection instruction shall be endorsed by the head of the undertaking and periodically updated. The head of the undertaking shall notify the Nuclear Regulatory Agency when making amendments and supplements to the instruction.

Annex No. 5
to Article 50, paragraph 2, point 3

Typical contents of the internal emergency plan for facilities with SIR

1. Purpose and scope of the emergency plan.

2. Determination of the emergency preparedness category of a facility with SIR under the Regulation for Emergency Planning and Emergency Preparedness for Nuclear and Radiation Accident.

3. Description of possible scenarios for occurrence and development of an accident with SIR in the facility.

4. Requirements and criteria for implementation of the emergency plan and for termination of its implementation.

5. Allocation of duties and responsibilities of the emergency team in the facility.

6. Provided technical means for radiation monitoring, individual dosimetric control, individual protection and communication in the event of an emergency situation with SIR or other extraordinary event in the facility with possible radiation consequences.

7. The procedure for notification and response to the occurrence of an emergency situation with SIR or other extraordinary event in the facility with possible

radiological consequences, including in the event of an industrial accident, fire, explosion, natural disaster or other occurrence related to facility safety.

8. The procedure for recording and reporting of extraordinary events and requesting external assistance for the mitigation of the occurred radiological consequences.

9. The requirements and procedure for maintaining emergency preparedness and conducting instructions and trainings of the personnel on the implementation of the internal emergency plan, current telephone numbers and addresses for notification to the Nuclear Regulatory Agency and the specialised control bodies in case of extraordinary events in the site.

10. Actual list of the responsible officials for notification and emergency response in the event of an emergency situation or other extraordinary events in the facility, current phone numbers and addresses for communication between these persons, the Nuclear Regulatory Agency and the specialized control bodies.

Notes:

1. Facilities with high-activity sources or facilities with particle accelerators shall be assigned to Category III of emergency preparedness.

2. For facilities and activities with ionising radiation generators, the emergency plan shall include points 1 to 4 as well as:

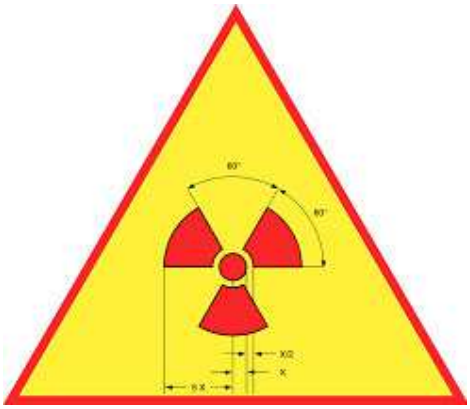
a) the persons responsible for the notification of an accident or other extraordinary event occurring in the facility;

b) current telephone numbers and addresses for notification to the Nuclear Regulatory Agency, the specialized control bodies and other agencies in case of extraordinary events in the facility;

c) procedure for response and request for external assistance in the event of an accident or other extraordinary events occurring in the facility.

Annex No. 6
to Article 51, paragraph 2

Radiation warning symbol



Note. It is possible to replace the red colour with black.

Annex No. 7
to Article 116, paragraph 4
(Amended, SG No. 110/2020)

An indicative list of types of building materials whose specific activity index may not meet the requirements of Article 116, paragraph 3
(Title amended, SG No. 110/2020)

1. Natural materials:

a) igneous rock (peridotite, gabbro, basalt, diorite, andesite, granite, rhyolite).

2. Materials containing residues from the industries processing natural radioactive materials such as:

a) fly ash;

b) phosphogypsum;

c) phosphorus slag;

d) tin slag;

e) copper slag;

f) red mud (residual product of aluminum production);

g) residual steel products.

3. Inert and additive materials – mining wastes from the liquidation of uranium mining sites.

Annex No. 8
to Article 124, paragraph 1

Standard registration form for high-activity sources (HAS)

STANDARD RECORD SHEET FOR HIGH-ACTIVITY SEALED SOURCES (HASS) *(optional in italics)*

1. HASS identification number *Manufacturer device number* *Field of use:*	**2. Identification of the licenced undertaking** Name: Address: Country: Manufacturer ☐ Suplier ☐ User ☐	**3. Location of HASS** (Use or storage) if not the same as in 2. Name: Address: Country: Fixed use ☐ Storage ☐ Mobile use ☐
4. Recording Date of start of recording: Date of transfer of records to historic file:	**5. Licence** Number: Date of issue: Date of expiry:	**6. Operational controls of HASS** Date: Date: Date:
7. HASS characteristics *Year of manufacture:* Radionuclide: Activity at the date of manufacturing: Activity reference date: Manufacturer/Supplier (*): Name: Address: Country: Physical and chemical characteristics *Source type identification:* *Capsule identification:* *ISO classification:* *ANSI classification:* *LAEA source category:* *Neutron source:* *Yes* ☐ *No* ☐ *Neutron source target:* *Neutron flux:*	**8. Receipt of HASS** Date of receipt: Receipt from: Name: Address: Country: Manufacturer ☐ Supplier ☐ Another user ☐ **9. Transfer of HASS** Date of transfer: Transfer to: Name: Address: Country: Licence number: Date of issue: Date of expiry: Manufacturer ☐ Supplier ☐ Other undertaking ☐ Facility for long term storage or disposal ☐	Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: **10. Further information** Loss ☐ Date of loss: Theft ☐ Date of theft: *Findings:* *Yes* ☐ *No* ☐ *Date:* *Place:* *Other information:*

(*) Where the manufacturer of the source is established outside the Community, the name and address of the importer-supplier may be provided instead.

Annex No. 9
to Article 124, paragraph 2

Standard reporting and control form for unsealed SIR

No	Revenue					Expenditure		Balance		Note
	Name of the supplier	Name of the source, device, apparatus, system	No and date of issue of the certificate	Quantity and specific activity	Certificate activity	Who is given or delivered	Quantity and activity on the day of transmission	Quantity	Activity on the day of transmission in the storage facilitiy	Return, description, and disposal with confirmation documents

Note. Tables are filled in for each source individually. Completed source data tables are collated and archived in the revenue and expenditure book.

Annex No. 10
to Article 135, paragraph 2

Specific requirements for site selection, design and construction of nuclear facilities and facilities with sources of ionising radiation

1. The design basis, the requirements for the nuclear power plant site characteristics, the safety requirements for the design of a nuclear power plant and its safety systems and the requirements for the construction and commissioning of a nuclear power plant are specified in the Regulation on the Safety of Nuclear Power Plants.

2. It is not allowed to locate a nuclear facility or facility with SIR to areas where it is prohibited by a statutory instrument or to sites which do not comply with the requirements for protection of the environment, radiation protection, fire safety and physical protection or other requirements set by a statutory instrument.

It is not allowed to locate a nuclear power plant at the sites specified in the Regulation on the Safety of Nuclear Power Plants.

When selecting a site for a nuclear power plant, the requirements for preliminary studies and research according to the Regulation for the Safety of Nuclear Power Plants shall apply.

3. It is prohibited to locate SIR facilities in residential buildings or childcare facilities (nursery and kindergartens, schools).

The ban does not apply to the use of dental X-ray systems.

4. When locating a SIR facility on a selected site, a spatial-development scheme and plan shall be prepared in accordance with the Spatial Development Act, taking into account the projected radiation impact on the population and the environment under normal conditions of operation of the SIR facility and in case of a radiological emergency.

When selecting a site for location of SIR facility, site characteristics and factors of natural and technogenic character that may have a radiation impact on the population and the environment are identified and evaluated. The assessment shall confirm that, from the radiation protection point of view, the selected site is suitable for the location of the SIR facility.

5. Construction of facilities with SIR (including reconstruction), assembly and preliminary tests shall be carried out on the basis of a technical design and measures for provision of radiation protection after obtaining the appropriate permit under the Act on the Safe Use of Nuclear Energy.

Construction of a new SIR facility or reconstruction of an existing one shall be done after an analysis and assessment of the nature and probability of any possible exposure and expected doses as a result of the envisaged activities with SIR.

6. The holder of a permit for construction of a SIR facility, assembly and preliminary tests shall be obliged:

6.1. to control the execution of the design, construction and assembly works, as well as the quality of the works carried out in compliance with the applicable statutory requirements for the construction of the respective facility;

6.2. to ensure author supervision by the designer for the purposes of building control;

6.3. to prepare and execute a program for preliminary testing and phased commissioning of SIR facility and to submit to the Nuclear Regulatory Agency a report on the results of the implementation of the program within the term specified in the permit under point 5;

6.4. to monitor compliance with the written procedures for preliminary testing and phased commissioning of the SIR facility and to document and evaluate the

results of the tests carried out on the basis of predetermined criteria for success of the tests.

7. When designing a SIR facility, a justification of the radiation protection in carrying out the envisaged activity with SIR shall be performed.

The radiation protection justification is an integral part of the design documentation of the facility.

Radiation protection justification is also required for the reconstruction of an existing SIR facility when this is related to a change of SIR and the conditions and measures for radiation protection in the facility.

8. In the radiation protection justification under point 7 the following shall be included:

8.1. Description and justification of the envisaged activity and technology of using SIR in the respective facility.

8.2. Description of the design and technical characteristics of the envisaged SIR, including: radionuclide types; single and total activity, physical and chemical form of radioactive sources; maximum permissible activities of radioactive sources by workplaces; average annual consumption of unsealed sources; maximum supply voltage, maximum working current and consumed electric power for ionising radiation generators or particle accelerators; permissible number of simultaneous operating systems with SIR at a specific location; specific restrictive conditions imposed by the manufacturer of a given SIR.

8.3. Description and showing the schematic location of the selected site for construction of a SIR facility, assessment of compliance of the site with the statutory requirements for radiation protection.

8.4. Description of probable scenarios and exposure pathways for occupationally exposed workers and members of the public when performing the intended activities in the facility, estimating the expected doses under normal operation conditions and in case of emergency situations in the facility.

8.5. Description of the methodology used to calculate the radiation protection (stationary and non-stationary barriers, safety screens, doors or labyrinths, etc.), as well as the envisaged protective materials, thicknesses and dimensions of the shielding barriers provided for the SIR facility.

8.6. Scheme of SIR location and working premises in the controlled and surveillance area, description of the serviced, semi-serviced and non-serviced premises in the controlled area of the SIR facility.

8.7. Description of the envisaged technical and organisational measures for provision of radiation protection in the designed SIR facility in normal and emergency conditions, including ventilation systems, radioactive gas and aerosol purification systems, special sewerage systems, acoustic and light signs, automated protection and lockouts to prevent uncontrolled exposure.

8.8. Provided methods and technical means for radiation monitoring of the working environment and for individual dosimetric control of the personnel in the facility, recommended volume and frequency of the radiation monitoring, location and number of control points for monitoring.

8.9. Justified design control levels in the work premises of the facility and dose constraints in terms of effective and equivalent doses to optimise the radiation protection of staff and members of the public.

8.10. Expected amounts, activities and radionuclide composition of generated radioactive waste in the site.

8.11. Assessment of compliance with the radiation protection regulatory requirements applicable to the respective SIR facility.

9. Assessment of radiation protection measures is a systematic process that takes place in site selection, design, construction, commissioning, operation and decommissioning of a nuclear facility or SIR facility in order to determine the implementation of all applicable requirements for radiation protection in the relevant design. Designing and assessing safety are elements of a complex iterative process.

Radiation protection measures should be aimed at limiting the doses of occupationally exposed workers and members of the public under the statutory dose limits and maintaining exposure doses to the lowest possible reasonably achievable level.

10. When designing protection from external radiation (shielding structures) in nuclear facilities and SIR facilities, the average annual value of the projected effective dose rate for work premises in a facility is determined by the formula:

$H = D / (k \times h)$,

where D is the annual effective dose limit for occupationally exposed workers or for the members of the public;

k – security factor;

h – the expected average duration of exposure of personnel in category A or B to SIR facility or members of the public for one year, expressed in number of hours.

The minimum design security factor is k = 2,5 for occupationally exposed workers and for members of the public.

11. When designing external radiation protection, the presence of all SIR in a given site and the perspective of mounting additional SIR in the facility shall be taken into account. The purpose of each premises of the facility and the category of workers subjected to occupational exposure is also taken into account.

The design limits for the effective dose rates, calculated according to the formula in point 10, for category A or category B occupationally exposed workers and for members of the public are as follows:

Exposed persons	Purpose of the premises and the territory	Duration of exposure (number of hours per year)	Maximum design value of dose rate (*)
Occupationally exposed workers	Premises being a permanent workplace of category A workers in facilities with SIR	1700 h	5 μSv/h
	Premises being a temporary workplace of category A workers in facilities with SIR	850 h	10 μSv/h
	Premises at facilities with SIR, where category B workers have their workplaces	2000 h	1 μSv/h
Members of the public	Any other premises and territories in the country	8800 h	0,05 μSv/h

(*) Radiation from the natural background is not taken into account when designing shielding structures.

12. For the optimisation of radiation protection, the control design levels for measurable operating variables in the working premises of a nuclear facility or SIR facility shall be determined on the basis of dose limits for occupationally exposed workers and members of the public which shall be justified in the design concerned.

13. The commissioning of a nuclear power plant shall be carried out in accordance with the requirements of the Regulation on the Safety of Nuclear Power Plants and after obtaining a permit for commissioning in accordance with the procedure laid down in the Regulation on the Procedure for Issuing Licenses and Permits for the Safe Use of Nuclear Energy.

Prior to the commissioning of a nuclear power plant, a program for radiation protection of workers and a program for radiation monitoring of the environment shall be developed and coordinated with the competent state authorities.

14. The commissioning of a facility with SIR shall be carried out in accordance with the procedure laid down in the Regulation on the Procedure for Issuing Licenses and Permits for the Safe Use of Nuclear Energy.

Annex No 11
to Article 136, paragraph 2

Specific requirements for storage of radioactive substances in storage facilities

1. Specially equipped facilities for storage of radioactive substances shall be located, as a general rule, in premises situated at the lowest floors of the buildings (basements, first floor) or in separate parts of buildings.

A suitable temperature have to be maintained in the storage facilities so as to exclude the possibility of damage to stored radioactive substances (sealed or unsealed sources, radioactive materials) and their packaging or containers due to freezing or overheating.

The equipment of unsealed source storage premises shall meet the requirements for fitment of premises of the appropriate class but not lower than Class II.

2. Storage facilities for radioactive substances (niches, wells, safes, etc.) shall be designed so that workers are not exposed to other sources in the storage facility when placing or removing separate sources.

In the storage facilities, the doors of the individual sections with radioactive substances as well as the containers with radioactive substances must be opened effortlessly and have a durable mark that indicates the type of radionuclides and their activity.

A map (scheme) for current location of the sources in the storage facility shall be maintained by the undertaking.

Glass containers with radioactive liquids are placed in metal or plastic packages (vessels) the capacity of which can take over all the stored liquid if the integrity of the primary glass container is impaired.

3. Radioactive substances the storage of which is possible to release radioactive gases, vapours or aerosols shall be stored in special enclosed cupboards, boxes and chambers with purge filters made of non-combustible materials, with the exhaust gases being drawn off to the exhaust ventilation system.

4. When transferring radioactive substances from storage facilities to premises, buildings and to the facility site, containers and other special handling and moving equipment shall be used, observing the rules on radiation protection and taking into account the physical condition, activity and type of sources, the intensity of the ionising radiation, the dimensions and the weight of the packages/containers.

5. Undertakings which store radioactive substances shall be required to ensure the physical protection of the storage facilities so as to exclude the possibility of loss, theft or uncontrolled use of the stored sources.

The undertakings are required to provide fire and emergency safety to the storage facilities they operate.

6. Radioactive substances, which are not in operating state, shall be stored in storage facilities or in appropriate locations which are equipped and arranged to exclude the possibility of uncontrolled access by outside persons and to ensure their safe storage.

The activity of the stored radioactive substances in a storage facility is not allowed to exceed the limit values specified in the respective permit issued by the Nuclear Regulatory Agency.

7. The storage of radioactive substances in temporary storage sites located outside the facility site, including gamma radiography devices, logging devices, humidity meters, density meters and other built-in equipment used in field conditions, shall be allowed after coordination with the relevant Regional Departments of the Ministry of Interior.

8. The dose rate on the outer surfaces of a temporary storage facility for radioactive substances or on its fence shall not exceed 1 μSv/h.

Annex No. 12
to Article 137
(Amended, SG No. 110/2020)

Requirements for use of sealed sources and generators of ionising radiation

1. Facilities in which sealed sources are placed shall be resistant to mechanical, thermal, chemical and other impacts, shall be consistent with the type of sources, the manner and conditions of their use, and shall have radiation warning symbol.

In the non-operating state, the sealed sources shall be held in protective devices or containers, and the ionising radiation generators shall be switched off.

When removing sealed sources from their containers, special tools or devices for remote handling are used. It shall be prohibited to touch sealed sources regardless of their type and activity.

When the sealed sources are removed from the containers, suitable shields and handling devices are used.

When the ambient dose rate is greater than 2 mSv/h at a distance of 1 m from a given source, the activities shall be performed by means of special protective devices with remote control.

2. (Amended, SG No. 110/2020)The ambient dose rate of portable and stationary gamma radiography devices, therapeutic devices or other types of devices with sealed sources installed therein shall not exceed 20 μSv/h at a distance of 1 m from their surface.

For devices with sealed sources used for technology control in facilities, including for neutron sources, the ambient dose rate measured at any accessible point on the surface of the source protection block shall not exceed 100 μSv/h, and at a distance of 1 m of its surface – 3 μSv/h.

The ambient dose rate of devices in which X-ray radiation occurs should not exceed 1,0 μSv/h at a distance of 0,1 m from their outer surface.

For mobile and stationary gamma radiography devices and therapeutic devices, the ambient dose rate is allowed to be greater than 20 μSv/h at a distance of 1 m from the surface of the indoor unit with a sealed source if the working time of staff with such apparatus is less than the standard. In this case, the permissible dose rate is determined by the formula according to point 10 of Annex No. 10.

3. The working part (irradiator unit) of stationary apparatus and devices with unlimited in the direction beam of ionising radiation shall be located in a separate room, separate building or separate building wing, taking into account the primary and diffuse radiation and all possible real conditions of the source and directions of the beam.

Control panels for stationary apparatus and devices with unlimited in the direction beam of ionising radiation shall be located in a room separated from the sources (control room). With an open door (barrier) to the room in question, the placement of a radioactive source in the working position or the inclusion of a high (accelerating) voltage of the ionising radiation generator must be automatically blocked to exclude the possibility of accidental human exposure.

4. The premises where stationary apparatuses and systems with high-activity sources are located shall be equipped with an automated indication, signalling and locking system regarding the position and movement of the source (irradiator unit) and for signalling when the dose rate increases above the permissible level. A device is required to remotely move a source to a storage location if the power supply to the system is switched off accidentally or other emergency occurs such as fire, earthquake, or flood.

When storing high-activity sources under water in the facilities, systems for automatically maintaining the water level in the pool shall be required to alarm for a change in water level and an increase in the dose rate in the working and control room.

5. No special requirements shall be set out in terms of the location of premises with sealed source appliances and installations when the ambient dose rate does not exceed 1,0 μSv/h at a distance of 1 m from the available parts of the surface of the system in the working position and when storing the sources in protective devices in the non-operating position.

When the ambient dose rate is greater than 1.0 μSv/h at a distance of 1 m from the accessible parts of the surface, the stationary devices and the systems are positioned in premises located in a separate building or in a separate building part.

6. When working with sealed sources, there shall be no special requirements for the layout of the premises, and applicable building, hygiene, fire-fighting and other norms and standards, as for the production premises in business facilities shall be applied.

Premises in which dismantling, refilling, repairs, temporary storage or other specific work related to the maintenance and control of sealed sources are carried out shall be equipped in accordance with the requirements applicable to work activities involving unsealed source class III.

When using ionising radiation generators, the availability of general ventilation in the respective premises is necessary.

7. In the case of use of irradiation facilities with high-activity sources, where it is possible to accumulate toxic substances in excess of the permissible concentrations in the air of the working premises, the sites are required to have intake-suction ventilation.

8. Where apparatus and equipment with sealed sources or ionising radiation

generators are used in general production premises of a site or out of premises under field conditions, the following requirements shall be complied with:

a) the direct beam ionisation radiation is preferably directed to the ground or to a direction where no human beings are present;

b) the sources used are placed as far as possible by the service personnel and other persons;

c) prevent access to, and the staying of, near sources used and take measures to temporarily store and physical protection such sources;

d) if necessary, protective screens and movable shieldings are provided and used to reduce exposure;

e) radiation warning symbols and warning signs are placed around sources;

f) the time spent by persons in proximity to the sources shall be limited to a minimum.

Annex No. 13
to Article 138, paragraph 2

Grouping of radionuclides on radiotoxicity

Group 1: Radionuclides with very high radiotoxicity

Chemical element	Mass numbers of radionuclides
Lead	210
Polonium	210
Radium	223, 225, 226, 228
Actinium	227
Thorium	227, 228, 229, 230
Protactinium	231
Uranium	230, 232, 233, 234
Neptunium	237
Plutonium	236, 238, 239, 240, 241, 242
Americium	241, 242m, 243
Curium	240, 242, 243, 244, 245, 246, 247, 248
Californium	248, 249, 250, 251, 252, 254
Einsteinium	254

Group 2: Radionuclides with high radiotoxicity

Chemical element	Mass numbers of radionuclides
Sodium	22
Chlorine	36
Calcium	45
Scandium	46
Cobalt	60
Strontium	90
Yttrium	91
Zirconium	93
Niobium	94
Ruthenium	106
Silver	110m
Cadmium	115m
Indium	114m
Antimony	124, 125
Iodine	124, 125, 126, 131
Caesium	134
Barium	140
Cerium	144
Europium	152, 154
Terbium	160
Thulium	170
Hafnium	181
Tantalum	182
Iridium	192
Thallium	204
Lead	212
Bismuth	207, 210
Astatine	211
Radium	224
Actinium	228
Thorium	232, natural thorium
Protactinium	230
Uranium	236
Plutonium	244
Americium	242
Curium	241
Berkelium	249
Californium	246, 253
Einsteinium	253, 254m
Fermium	255, 256

Group 3: Radionuclides with medium radiotoxicity

Chemical element	Mass numbers of radionuclides
Beryllium	7
Carbon	14
Fluorine	18
Sodium	24
Silicon	31
Phosphorus	32, 35
Sulphur	35
Chlorine	38
Argon	41

Chemical element	Mass numbers of radionuclides
Potassium	42, 43
Calcium	47
Scandium	47, 48
Vanadium	48
Chromium	51
Manganese	52, 54
Iron	52, 55, 59
Cobalt	55, 56, 57, 58
Nickel	63, 65
Copper	65
Zink	65, 69m
Gallium	72
Arsenic	73, 74, 76, 77
Selenium	75
Bromine	82
Krypton	74, 77, 87, 88
Rubidium	86
Strontium	83, 85, 89, 91, 92
Yttrium	90, 92, 93
Zirconium	86, 88, 89, 95, 97
Niobium	90, 93m, 95, 96
Molybdenum	90, 93, 99
Technetium	96, 97, 97m, 99
Ruthenium	97, 103, 105
Rhodium	105
Palladium	103, 109
Silver	105, 111
Cadmium	109, 115
Indium	115m
Tin	113, 125
Antimony	122
Tellurium	121, 121m, 123m, 125m, 127m, 129m, 131, 131m, 132, 133m, 134
Iodine	120, 123, 130, 132m, 133, 135
Xenon	135
Caesium	132, 136, 137
Barium	131
Lanthanum	140
Cerium	134, 135, 137m, 139, 141, 143
Praseodymium	142, 143
Neodymium	147, 149
Promethium	147, 149
Samarium	151, 153
Europium	152m, 155
Gadolinium	153, 159
Dysprosium	165, 166
Holmium	166
Erbium	169, 171
Thulium	171
Ytterbium	175
Lutetium	177
Tungsten	181, 185, 187
Rhenium	183, 186, 188
Osmium	18, 191, 193
Iridium	190, 194
Platinum	191, 193, 197
Gold	196, 198, 199
Mercury	197, 197m, 203
Thallium	200, 201, 202
Lead	203
Bismuth	206, 212
Radon	220, 222
Thorium	226, 231, 234
Protactinium	233
Uranium	231, 237, 240
Neptunium	239, 240
Plutonium	234, 237, 245
Americium	238, 240, 244m, 244
Curium	238
Berkelium	250
Californium	244
Fermium	254

Group 4: Radionuclides with low radiotoxicity

Chemical element	Mass numbers of radionuclides
Hydrogen (tritium)	3
Oxygen	15
Argon	37
Manganese	51, 52m, 53, 56
Cobalt	58m, 60m, 61, 62m
Nickel	59
Zink	69
Germanium	71
Krypton	76, 79, 81, 83m, 85, 85m
Strontium	80, 81, 85m, 87m
Yttrium	91m
Niobium	38, 89, 97, 98
Molybdenum	93m, 101
Technetium	96m, 99 m
Rhodium	103m
Indium	113m
Tellurium	116, 123, 127, 129, 133
Iodine	120m, 121, 128, 129, 134
Xenon	131m, 133
Caesium	125, 127, 129, 130, 131, 134m, 135, 135m, 138
Cerium	137
Osmium	191m
Platinum	193m, 197m
Polonium	203, 205, 207
Radium	227
Uranium	235, 238, 239, natural uranium
Plutonium	235, 243
Americium	237, 239, 245, 246m, 246
Curium	249

Note. Natural thorium with an activity of 1 Bq corresponds to 0,5 Bq of thorium-232

and 0,5 Bq of thorium-228. Natural uranium is a mixture of three isotopes: uranium-234 (0,006%), uranium-235 (0,712%) and uranium-238 (99,282%).

Annex No. 14
to Article 139, paragraph 1

Classes work with unsealed SIR (radioactive substances) (1, 2, 3, 4 and 5)

Radionuclides by groups of radiotoxicity	Workplace activity		
	works of I class	works of II class	works of III class
Very high	over 0.1 GBq	0.1 MBq to 0.1 GBq	below 0.1 MBq
High	over 1 GBq	1 MBq to 1 GBq	below 1 MBq
Medium	over 10 GBq	10 MBq to 10 GBq	below 10 MBq
Low	over 100 GBq	100 MBq to 100 GBq	below 100 MBq

1. In case of uncomplicated fluid operations (i.e. operations without evaporation, bubbling, distillation), workplace activity is allowed to be 10 times greater than the maximum activity for the corresponding class of work.

2. In the case of complex operations involving a risk of spillage and radioactive contamination, the workplace activity shall be 10 times less than the maximum activity for the corresponding class of work.

3. When stored unsealed SIR (radioactive substances in a different physical state), workplace activity is allowed to be 100 times greater than the maximum activity for the corresponding class of work.

4. For operations involving unsealed SIR leading to the risk of radioactive contamination of the air and premises ("dry" operations with dust extraction), the workplace activity shall be 100 times less than the maximum activity for the corresponding class of work.

5. In the case of generating (elution) and cutting of generators of short-lived radionuclides for medical purposes, workplace activity is allowed to be 20 times gerater than the maximum activity for the corresponding class of work.

Annex No. 15
to Article 139, paragraph 2

Classification of premises in the controlled areas of nuclear facilities and facilities with unsealed sources and specific requirements for performance of works in I, II and III class with unsealed sources

1. Depending on the extent of the possible radiation impact on occupationally exposed workers, the premises in the controlled areas of nuclear facilities and facilities with unsealed sources are classified into three categories:

(a) non-serviced premises where technological equipment and components are installed, in the operation of which the radiation situation prevents the presence of occupationally exposed workers in those premises;

(b) periodically serviced premises in which the conditions of use and the radiological situation allows temporary presence of occupationally exposed workers in such premises;

(c) permanently occupied premises where the radiation situation allows permanent presence of occupationally exposed workers during the fixed working time.

The category and purpose of each room in the controlled area of a nuclear facility or facilities with unsealed sources shall be

determined and justified in the design concerned.

2. In the facilities with unsealed sources, the premises in the controlled area shall be located in one place, in a separate part of a particular building or in a separate building on the facility.

When class I, II and III works are performed at a given facility, the premises are separated from each other in accordance with the class of their work.

3. Premises in the controlled area of a nuclear facility or unsealed sources facilities for performing Class I work shall be located in a separate building or isolated part of a building with a separate entrance and access through a sanitary check-point.

Class I rooms are equipped with chambers, boxes and other containment devices and are generally divided into three categories as specified in point 1.

To prevent the spread of radioactive substances, sanitary lockers are created between non-serviced and periodically serviced premises, as well as between periodically serviced premises and permanently occupied working premises.

In unsealed sources Class I works, depending on the purpose and specificity of the facility and the type of protective barriers used, it is allowed to divide the work premises into the facility into only two categories.

4. The premises intended for dealing with unsealed sources class II shall be located in a separate building part. Designing is required to provide premises for permanent and temporary presence of staff. In the composition of premises intended for dealing with unsealed sources of the II class it is required to have a sanitary check-point and dosimetric control at the exit.

The unsealed sources class II rooms are equipped with cabinets, fireplaces or boxes and ventilated by general air-exchange ventilation system. Powder operations, solution evaporation, handling of emanating solutions and volatile substances, etc., related to potential radioactive contamination of indoor air, should be carried out in chimney-pieces and boxes with exhaust ventilation.

When works of II and III class with unsealed SIR connected to a single technology are carried out at a given site, a common block of premises should be separated, is equipped in accordance with the requirements applied for unsealed SIR class II works.

5. There are no special requirements for placement of workplaces (laboratories) in facilities, where works of class III are carried out with unsealed sources. Works with unsealed sources class III are held in separate rooms or rooms that meet the general requirements for chemical laboratories.

Works with unsealed sources class III, which are related to the potential for radioactive air pollution in the respective premises (operations with powders, evaporation of solutions, manipulation with emanating and volatile substances), are carried out in cabinets with exhaust ventilation.

It is recommended premises intended for dealing with unsealed sources class III to be equipped with a bathroom with shower and a separate room for storage and treatment of radioactive solutions that are being carried out. It is recommended that these rooms be ventilated by forced-exhaust ventilation system.

6. In the case of activities with unsealed sources of ionising radiation of class I and II, the general electrical panels and the control of the general heating, ventilation, water supply, gas and compressed air systems are located outside the main operating premises of the site.

7. For the purpose of reducing the external exposure of the workers by unsealed sources of ionising radiation,

automated systems and remote control of the technological processes as well as shielding of the sources of ionising radiation and diminishing of the duration of work operations shall be used.

Operations with unsealed sources in chambers and boxes shall be performed by remote controlled equipment or by gloves, airtight sealed to the front wall of the chambers or boxes. The placing in or taking out of the processed products or equipment shall be done without disturbing the hermetic sealing of the respective chambers or boxes. In the case of replacement or repair of the manipulators, chamber gloves and other components, temporary disturbance of the air tightness of the chambers or boxes is permissible, with the application of adequate individual means of protection of the workers and the execution of the necessary dosimetric and radiation control.

The control of the accessory equipment for supply of water, gas, and air or for creating of vacuum shall be performed from the side of the front wall of the chambers or boxes.

8. For works of I or II class with unsealed sources of ionising radiation the area per worker in a given room shall be minimum 10 square meters.

9. Measures shall be taken for decontamination of the premises and equipment in the controlled area.

The technological equipment, protection devices and working equipment in the premises at the facilities with unsealed sources of ionising radiation shall be with smooth surface, of simple design and with coatings with low sorption, which facilitate the removal of radioactive contamination and which are resistant to the working materials, substances, solutions and chemical agents used. Use of upholstered furniture is not permitted.

10. The floors and ceilings of the premises for operations of II class with unsealed sources of ionising radiation and of the premises for operations of class I with unsealed sources of ionising radiation shall be coated with materials of low sorption, which are durable to cleansing means. It is recommended to paint the premises belonging to different classes and areas of operations in different colours. These requirements shall be valid for the ceilings of the non-serviced premises and periodically serviced for performing activities of class I with unsealed sources, as well as for the floors of rooms for activities of class III with unsealed sources.

The edges of the floor coatings shall be glued to the walls, bent in advance at 10 cm height from the floor. If special sewage system is available, the floors of the rooms shall slope down to the facilities for draining of the water. The corners of the rooms shall be rounded and the doors and window frames shall be of simplified design.

11. For class I and II work, moving equipment from one premises to another when it is of a different class is allowed after radiation control being performed.

12. The amount of unsealed sources with which the workplaces are equipped should be the minimum necessary for the particular job, using appropriate safety devices.

In manual operations with radioactive solutions, suitable protective devices should be used.

13. When working with unsealed sources, auxiliary materials and devices for single use (plastic vessels and coatings, paper filters, etc.) shall be used for limiting the radioactive contamination of surfaces, equipment and rooms. The work shall be performed on mats of materials with low sorption.

14. When working with unsealed sources, a room or storage space shall be separated into the facilities for the necessary decontamination solutions,

devices, materials and equipment for cleansing of the rooms as well as other means for removal of radioactive contamination.

15. The activities at facilities with unsealed sources of ionising radiation shall be organised and performed in such a way, that the quantity of the released radioactive waste during the corresponding technological processes and manipulations shall be as little as possible.

16. The requirements for class I, II and III works shall also be applied to certain premises and types of work in nuclear facilities.

17. In accordance with the requirements in Annex No. 17, the professionally exposed workers shall be obliged, when operating in the controlled area of a nuclear facility and in works of class I or individual works of class II in a facility with unsealed sources, to use basic and additional means of individual protection and to comply with the sanitary-access regime established by the undertaking concerned.

Annex No. 16
to Article 140, paragraph 2

Specific requirements to the ventilation, cleaning of dust, gases and aerosols, sewage and water supply systems and decontamination

1. Ventilation and air purification systems for dust, gases and aerosols in nuclear facilities and facilities with unsealed sources shall:

a) ensure safe working conditions for the workers by ventilation of the premises;

b) prevent contamination of the airspace in the premises and of the ambient air with radioactive and toxic substances;

c) maintain optimum operating conditions for the technological equipment.

This is achieved through the proper organisation of the operation of the ventilation and gas cleaning systems envisaged by the design, the use of protective structures and components (boxes, chambers, shielding barriers, etc.) and the rational placement of the premises and the equipment in compliance with the applicable legal requirements.

2. The design documentation of ventilation and air cleaning systems at nuclear facilities and facilities with unsealed sources shall be coordinated with the Ministry of Health.

The workrooms, boxes, cabinets and other technological equipment shall be designed in such a way, that the air flow is directed from less polluted space to relatively more polluted space.

3. When designing nuclear facilities and facilities with unsealed sources, the following shall be envisaged:

a) inlet-suction and general-purpose ventilation systems as well as systems for ventilation of the technological equipment providing optimal conditions for its operation;

b) special ventilation and cleaning systems for the release into the atmosphere of gaseous radioactive substances generated during the operation.

The filtration components of the special ventilation and cleaning systems must be sufficiently reliable to perform their functions with the required cleaning factor for all design modes of operation, and means of testing and controlling their effectiveness are also envisaged in the design.

4. In the controlled area it is not allowed to combine air ducts of ventilation systems that ventilate the air in non-serviced, temporary serviced and permanently serviced premises.

Ventilation systems intended for chimney-pieces, boxes and chambers shall be separated from the ventilation systems

provided for other premises in unsealed source facilities.

5. The systems and components for the management and control of released gaseous radioactive substances shall be so designed that the amount and specific activities of the expected radioactive releases into the atmosphere are reasonably achievable at a low level and not exceed the dose constraints for the members of the public, determined for a nuclear facility or facility with unsealed sources.

For nuclear facilities and facilities with unsealed sources, for works of class I the construction of ventilation pipes (chimneys) for the discharge of air into the atmosphere shall be envisaged, the height of which shall be justified in the respective design

6. The air from the ventilated rooms boxes, chambers, sealed cabinets shall be cleaned from radioactive contamination before it is released in the atmosphere, and the activity of the released radioactive substances shall be monitored. The filters used for cleaning shall possess sufficient efficiency, which shall be justified in the design documentation of the respective facilities with unsealed sources of ionising radiation. Rarefaction of the radioactive contaminated air before passing it to through the cleaning filters shall not be allowed.

The permissible levels of activity of the gas-aerosol discharges into the atmosphere are justified in the design of a nuclear facility and facility with unsealed sources.

Emission of air into the environment without cleaning is permitted if this is justified in the design of a facility with unsealed sources.

7. The airflow rate through the openings of the special ventilation equipment shall be determined in the design and shall not exceed 1,5 m/s.

The estimated air speed in the openings of ventilated cabinets is assumed to be 1,5 m/s.

In hermetic chambers and boxes at closed openings the dilution must be not less than 150 Pa (15 mm water column). Cameras and boxes shall be equipped with dilution control devices.

A reduction in dilution in hermetic chambers and boxes of up to 100 Pa (10 mm water column) and a reduction of air velocity in the openings to 0,5 m/s is allowed for a limited period of time.

8. Ventilators serving boxes, chambers and enclosed cabinets shall be located in specially designed rooms. For class I unsealed source operations, the ventilation suction chamber is part of the periodic service rooms. Ventilation systems serving premises involving class I unsealed source operations are supplied with spare units with a performance of no less than 1/3 of the full rated performance.

The players of the electric motors shall have a light signalling to indicate their status (on and off) and shall be located in premises of permanent presence of workers. The ventilators shall have a light signal to indicate their engines stopping.

9. When working with emissive and volatile radioactive substances, a permanently working suction ventilation system for storage facilities, work rooms and boxes shall be used. The system shall be fitted with a back-up ventilation unit with a performance of not less than 1/3 of the full rated power output.

In class I and class II unsealed source work areas, hose and movable ventilation devices are fitted to the exhaust ventilation systems to enable repairs to be carried out in the respective area.

10. When designing and operating systems and equipment for the cleaning of dust and gases in nuclear facilities and facilities with unsealed sources, the following requirements shall be complied with:

a) the number of dust-cleaning and scrubbing equipment is limited to a reasonable minimum;

b) the processes for servicing, repairing and replacing dust and gas cleaning equipment are mechanized and, where necessary, carried out remotely;

c) control and signalling systems on the efficiency of cleaning apparatuses and filters are provided and used;

d) reliable isolation of the dust-cleaning and scrubbing equipment as a source of ionising radiation is provided and radiation protection is assured to workers when performing inspections and maintenance of the equipment concerned.

11. The filters and apparatuses of the dust-cleaning and gas cleaning equipment shall be placed as close as possible to the relevant boxes, chambers and cabinets so as to minimize contamination of the mains ducts. The time limits for the use of filters and apparatus are determined by considering the reduction of the throughput of the treated air and the degree of radiation hazard arising from the accumulation of radioactive substances in them.

When installing dust-cleaning and gas cleaning equipment in separate rooms, parts of a building or individual buildings, the requirements applicable to the main premises intended for work with unsealed sources shall be observed.

Premises in which dust and gas cleaning equipment are located shall be isolated and not connected by airborne route with the main production facilities and areas of nuclear facilities and facilities with unsealed sources. The entrance to these premises is through a sanitary lock and a separate entrance.

12. Separate hermetic spaces or hermetically ventilated areas for the repair, dismantling, temporary storage of filters, apparatus and their components, as well as the storage of cleaning and decontamination devices shall be provided in the premises of the dust-cleaning and gas cleaning systems.

In the case of centralized layout of dust-cleaning and gas cleaning equipment, the workspaces involving work with unsealed sources class I shall be planned as part of the general unit, on the basis of zoning principle.

13. In non-serviced premises designated for work with unsealed source class I, an air supply system shall be used to insulate individual hoses for personal protection (pneumatic suits, pneumatic guns, hose gas masks).

For air supply to the respiratory protection hoses, there should be a separate pneumatic line or individual fans to provide the required pressure (5000 Pa) and the required air flow (15 m^3/h) at the point of attachment. Hose couplings should have spherical or spring automatic valves.

The heating of premises for work with unseaaled sources is required to be such that it does not cause further spreading of dust and aerosols.

14. Permanently operating ventilation systems shall be provided in workplaces where ozone accumulation above 0,1 mg/m^3 and nitrogen oxides above 5 mg/m^3 in air may occur.

When using air recirculation systems for the I and II class rooms, its purification should be ensured, observing the limits of the volume activities defined for the relevant radionuclides in Table No. 3 of Annex No. 2.

15. Premises for work with unsealed sources, are required to have a system for hot and cold water supply and sewerage. An exception is allowed only for field laboratories where unsealed sources class III works are performed and which are situated outside settlements or in settlements without central water supply.

16. In the unsealed source class I and II premises, the water supply in the sinks is

fitted with mixers that are operated with a pedal, elbow or non-contact device.

17. Special sewerage systems shall provide the opportunity to purify the waste radioactive waters. The cleaning facilities of the special sewerage system shall be located in a separate room or in a separate section of the facility with unsealed sources. The special sewerage system shall be complemented with technical means for control and measurement of the quantities and activities of the incoming and processed waste radioactive waters.

18. Receivers for pouring radioactive solutions (sinks, drains, stacks, etc.) into the special sewer system shall be made of corrosion-resistant materials or covered with easily decontaminated corrosion-resistant coatings on their outer and inner surfaces. The design of the receivers is such that it prevents spraying of the spent radioactive solutions.

19. Systems and components for the management and control of released liquid radioactive material shall be designed such that the amount and specific activities of the expected liquid radioactive releases into the environment are as low as reasonably achievable and do not exceed the dose constraints for members of the public designated for a nuclear facility or unsealed source facility.

20. Air ducts, water mains and other systems for ventilation, heating and sewerage through walls and partitions, which serve to protect against ionising radiation, shall be designed and operated in such a way as not to weaken the protection at the locations of the technological openings.

21. Floors and outer surfaces of equipment in serviced premises for unsealed source operation shall be cleaned daily using a damp cloth.

The inventory required for cleaning shall be stored in specially designated locations and only used for the premises of the relevant unsealed source class for which it is intended.

22. The effectiveness of decontamination (the degree of removal of radioactive contamination from surfaces) shall be controlled by radiometric measurements with portable and stationary devices. Equipment, tools, coatings that are sources of additional exposure to staff, not liable to be decontaminated, and therefore unsuitable for further use, shall be treated as radioactive waste and shall be subject to replacement.

23. In case of spillage of radioactive solutions, they shall be collected and removed at a suitable location, and when radioactive dust is spilled, ventilation systems that can cause radioactive contamination shall be disconnected, and measures taken to collect and remove spilled dust.

Annex No. 17
to Article 141, paragraph 2

Means of individual protection and sanitary crossing regime for work in the controlled areas of nuclear facilities and facilities with unsealed sources

1. Occupationally exposed persons working in the controlled area of nuclear facilities or facilities with unsealed sources shall be provided by the undertakings concerned with basic and additional means of individual protection, depending on the type and class of works performed and the level and nature of radioactive contamination of the air and the surfaces of the premises and equipment.

2. When carrying out work in the controlled area of a nuclear facility and in the case of work with unsealed sources, the professionally exposed workers shall use basic and additional means of individual protection in accordance with the internal

rules and procedures established by the undertaking concerned.

Depending on the nature of the work performed, the sets of basic and additional means of individual protection include:

a) special clothing for everyday use (workwear, suits, aprons, smocks, pants, underwear, hats, socks);

b) short-term wear (non-woven materials – working workwear and suits; laminated and polymeric materials – semi-smocks, semi-workwear, skirts, aprons, tarpaulins, slippers, rubber boots);

c) respiratory protective devices – filtering respirators, gas masks, autonomic insulating breathing apparatus, hose insulating respirators – half-masked and full-face masks, pneumatic helmets, pneumatic jackets);

d) insulating suits – hose-fitting suits (pneumatic jackets), insulated suits (suitcases);

e) foot protectors – basic decontaminable special footwear, extra special footwear (rubber or plastics shoes, boots, galoshes, leggings);

f) hand protection means – gloves, rubber gloves, latex gloves, special gloves and lead-guards with lead equivalents, protective creams;

g) eye protection – spectacles, shields;

h) head protectors – crash helmets, helmets, berets, hoods.

Personal work clothes and personal clothes shall not be permitted when working in controlled areas of nuclear facilities and facilities with unsealed sources.

3. Depending on the specifics of the work carried out in the controlled area of a nuclear facility or facility with unsealed sources, at the discretion of the undertaking concerned, the main means of individual protection may be:

a) working workwear or suits (jackets and trousers), aprons or smocks;

b) underwear, hats, socks, gloves;

c) special footwear, body wipes, disposable wipes;

d) filter respirators, half-masks, full-face masks, pneumatic helmets, pneumatic jackets.

Additional means of individual protection include: semi-smocks, workwear, jackets, handbags, aprons, tarpaulins made of plastic materials or materials with polymer coating; safety glasses, crash helmets and helmets; rubber and plastics shoes and boots; rubber and latex gloves; gas masks; autonomous breathing apparatus (oxygen devices and oxygen suits).

4. In case of class II works with unsealed sources and in case of some works of class III, professionaly exposed workers shall be required to use aprons, smocks, hats, gloves, lightweight shoes and, if necessary, respiratory protection devices.

5. Personal protective equipment shall be made of easily decontaminated decontaminated materials or single use equipment shall be put into service.

6. Respiratory protection and isolating suits shall be used in airborne atmosphere containing radioactive gases, vapours and/or aerosols with concentrations above the permissible limits for occupationally exposed workers (for repair or welding work with radio-contaminated equipment, work in rooms where leakages of gaseous or liquid radioactive substances have been found, in the handling of radioactive powders or liquids, in the evaporation or collection of radioactive solutions, in the removal of the consequences of radiation accidents or in other cases where the radiation situation requires respiratory protection measures to be taken).

Isolation suits for individual respiratory protection are used in all cases where filtering means of protection cannot provide radiation protection for occupationally exposed workers when working with unsealed sources, for specific repair or technological operations,

or for the mitigation the consequences of radiation incidents and accidents.

7. Occupationally exposed workers who work with radioactive solutions and powders or are engaged in cleaning and deactivation of premises designated for work with unsealed sources shall use the necessary additional means of individual protection in accordance with the type and activity of the radioactive substances and the levels and nature of the radioactive contamination.

Occupationally exposed workers performing operations involving welding or cutting of metals containing or contaminated with radioactive substances shall be obliged to use special means of individual protection against spark-proof and easily decontaminated materials.

8. Upon passing from higher unsealed source work premises to lower class premises, the level of radioactive contamination of the individual protection devices shall be controlled. When passing from semi-serviced to serviced premises in the controlled area of unsealed sources for works of class I, the used additional means of individual protection must be removed.

9. Upon leaving the premises where work with unsealed sources is performed, after the completion of the work it shall be obligatrory:

a) to check the degree of radioactive contamination of working clothing, individual parts of the worker's body and means of individual protection;

b) to remove the means of individual protection and to place them in the designated places;

c) to provide for the decontamination of the means of individual protection in the case of presence of radioactive contamination above the permissible limits;

d) to wash the hands and the body and, if necessary, decontaminate the contaminated skin surfaces by appropriate means.

10. In case of works of I and II class with unsealed sources, the contaminated working clothes shall be subject to decontamination in special laundries. The main workwear, including underwear, shall be replaced periodically with new and/or laundered special clothing.

Additional personal protective equipment (plasticizer, rubber, polymeric coating) shall be pre-decontaminated in a sanitary lock or other specially designated location after each use. When, after decontamination, the residual radioactive contamination exceeds the established limits, additional means of individual protection shall be submitted for decontamination in the special laundry of the facility with unsealed sources.

Personal protective equipment that cannot be decontaminated below acceptable limits shall be treated as radioactive waste and scrapped.

11. Measures to prevent the possibility of radioactive contamination of personal clothing and footwear shall be taken in facilities with unsealed sources. In the event that such contamination is detected, personal clothing and/or footwear shall be decontaminated under the control and with the assistance of the radiation protection officer within the facility concerned. If decontamination is impossible, personal clothing and/or footwear shall be treated as radioactive waste.

12. For the premises designated for work with unsealed sources, it shall be prohibited:

(a) presence of staff and visitors without the necessary means of individual protection;

(b) storage and use of foodstuffs, cosmetics and toiletries, medicines, chewing gum, tobacco, household clothing, books and other non-work articles and materials.

13. In facilities with unsealed sources where radioactive contamination of personnel is possible, suitable detergents

and decontaminants for the body shall be provided and used to remove radioactive contamination and not to cause penetration of radionuclides through the skin into the body.

In facilities where class I unsealed source work is carried out, an emergency reserve of individual protection means and individual dosimeters shall be provided and maintained, necessary for the workers involved in the removal and the mitigation of the consequences of the occurring accidents, including the external teams attracted for this purpose.

14. The sanitary-crossing regime shall be introduced and applied in nuclear facilities and unsealed source facilities, taking into account the nature of the work carried out and the level and nature of possible radioactive contamination in the controlled areas.

The sanitary-crossing regime includes the establishment and maintenance of sanitary checkpoints and sanitary locks and the application of a system of internal rules and procedures aimed at providing radiation protection for professionally exposed workers, adherence to sanitary and hygienic standards and non-proliferation of radioactive contamination outside the premises of the controlled area, as defined in the design of the nuclear facility or facility with unsealed sources.

15. In a nuclear facility and in a facility where unsealed source operations of class I are carried out, a mandatory sanitary checkpoint shall be established which shall be located in a designated building (or in a separate part of the building) which is connected to the main production hull (workplaces and laboratories) through an indoor corridor (gallery). The sanitary checkpoint includes:

a) bathroom with showers, wardrobes for household clothes (personal clothing);

b) wardrobes for workwear, room for surface radioactive contamination control of the body and the specialized clothes;

c) premises for storing and distributing means of individual protection;

d) warehouses for new and washed (decontaminated) workwear;

e) sanitary and hygienic premises for men and women who are equipped with toilets, hot and cold wash basins, detergents, hand dryers;

f) drinking water fountains with a pedal or non-contact control.

Planning of a sanitary checkpoint shall ensure separation of the human flow when entering and exiting occupationally exposed workers in/from the controlled area (workplaces), without mixing the entrants and the outgoing persons.

16. At sites where unsealed source class II works are carried out, there shall be a radioactive contamination control room and a shower bath, and rooms with individual lockers for personal effects and workwear, if for other reasons sanitary checkpoints are not provided.

On sites where unsealed source class III works are carried out, there must be a radioactive contamination control room and a shower bath, if, for other reasons, sanitary checkpoints are not provided.

17. Stationary sanitary locks between semi-serviced and serviced premises in the controlled area shall be established in unsealed source facilities for class I work.

Depending on the volume and nature of the work performed, the sanitary lock includes:

a) places for changing and pre-decontamination additional personal protective equipment stored in lockers and racks;

b) shoe-cleaning device for working shoes when leaving the sanitary lock;

c) radiation control station equipped with radioactive contamination measuring devices;

d) dressing room for radioactive contaminated workwear, equipped with containers for different types of clothing, with benches and washbasins.

The area, layout and components of the sanitary lock may vary depending on the volume, type and specificity of the work performed.

Besides stationary sanitary locks, portable sanitary locks can also be used, which are placed at the entrance to the premises where repairs are carried out with radioactive contaminated equipment.

18. The floors, walls and ceilings of the sanitary-household premises and the surface of wardrobes and workwear locker rooms shall be of moisture-resistant coatings preventing the sorption of radioactive substances and allowing for easy cleaning and decontamination.

The walls of wardrobe rooms, bathrooms, warehouses and radiation control stations at a height of at least 2 m should have adequate coatings which are poorly absorbent, easily cleanable and resistant to acids and alkalis. The rest of the walls and ceilings shall be painted with oil or plastic paint. Floors in bathrooms and toilets shall be covered with non-slip and non-absorbent materials.

19. The sorting of used workwear shall be carried out according to its type and degree of radioactive contamination, which shall be determined by radiometric measurement.

The radioactively contaminated workwear, after sorting, shall be packed and transferred from the dressing room to a store for keeping such clothing.

At the sites for sorting radioactively contaminated workwear, a ventilation system shall be envisaged. Warehouses for storing the contaminated workwear are located near a radiation control station and a cloakroom for the used workwear.

20. The number of places for the storage of personal wear and workwear should correspond to the maximum number of occupationally exposed workers, providing additional places for outside workers temporarily employed in the controlled area of a nuclear facility or facility with unsealed sources.

21. The required area of premises in sanitary checkpoints, the number of showers in the bathrooms, the quantity and type of individual protection devices shall be determined according to the volume, nature and class of the work performed and the number of workers in the controlled area of a nuclear facility or facility with unsealed sources, respecting the sanitary and hygiene standards and rules applicable to industrial undertakings.

22. For nuclear facilities and facilities with unsealed sources, the levels of radioactive contamination for the skin of professionally exposed workers and for the surfaces of workwear, shoes or personal protective equipment shall not exceed the limits indicated for these cases in Table No. 15 of Annex No. 2.

Annex No.18
to Article 142, paragraph 4

Radiation monitoring and individual dosimetric control requirements

1. A radiation monitoring system shall be developed for the design of nuclear facilities and SIR facilities taking into account the expected radiation doses and covering the organisation, procedure and manner of control of the radiation situation.

Radiation monitoring in nuclear facilities and SIR facilities shall be carried out by the radiation protection service or by a specially designated radiation protection officer (or officers) depending on the volume, nature and complexity of the activities performed. Such persons shall be identified in the documentation which is an integral part of the licenses or permits issued by the Nuclear Regulatory Agency for the respective activities.

2. The organisational structure, functions and duties of the radiation protection service (responsible persons) shall be determined by orders and other internal documents (regulations, instructions) prepared by the undertakings concerned.

Persons working in the radiological protection services and responsible for radiation protection in nuclear facilities and SIR facilities are required to undergone specialized training and to hold certificates of vocational qualification issued by a person licensed by the Nuclear Regulatory Agency for conducting of specialized training.

3. Undertakings shall notify the Chairman of the Nuclear Regulatory Agency and the Minister of Health of all cases where radiation or radioactive contamination is detected above the statutory limits.

4. Radiation monitoring in nuclear facilities and SIR facilities, depending on the nature of the activities performed and the specific radiation factors leading to external or internal exposure, includes the measurement and assessment of:

a) dose rate of X-ray, gamma, neutron and other ionising radiation and measurement of the flow density of alpha, beta and other ionising particles at workplaces and production facilities;

b) surface radioactive contamination of working surfaces, equipment, means of transport, personal protective equipment, body and staff clothing;

c) the volume activity of radioactive gases and aerosols on workplaces and in production facilities;

d) the activity of gaseous and liquid radioactive effluents in the environment;

e) the content of radionuclides in various components of the environment (air, water, soil, atmospheric deposition, bottom sediment, vegetation, agricultural production) within the supervised area around nuclear facilities;

f) dose rate, specific activity, radionuclide composition, surface radioactive contamination and the amount of radioactive waste collected, sorted, processed, transported and stored.

5. At nucleas facilities and facilities with SIR systematic monitoring of the external and internal exposure of the personnel shall be performed with the application of proper methods and technical means for individual monitoring. The individual dosimetric control shall include:

a) measurement and/or evaluation of the individual effective and equivalent doses of external gamma, X-ray, neutron and other ionising radiation;

b) determination of the nature, dynamics, and the levels of entry of radioactive substances in the organism for the purpose of evaluation of the individual effective and equivalent doses of internal exposure by direct spectrometric and radiometric measurements of the body

activity and by taking measurements of biologic samples;

c) radiometric control of the surface radioactive contamination of the body and the means for individual protection of the personnel;

d) analysis, assessment and archiving of the registered doses from external and internal exposure of the controlled persons.

6. The radiation monitoring system in nuclear facilities or other facilities which in an emergency may cause radiation exposure to the population or the environment requiring the application of protective measures shall include:

a) operational control of the radiation situation in the controlled area and the surveillance area by appropriate fixed automated technical means and/or portable and mobile technical means of measurement;

b) operational control of the radiation situation in the precautionary action zone and the supervised area by means of portable and mobile technical means of measurement;

c) laboratory methods, technical means, radiometric, spectrometric and dosimetric apparatus for analyses and measurements, ensuring adequate assessment of the radiation environment and pollution with artificial radionuclides on soil, water, sediments, vegetation, aquatic flora and fauna and agricultural production.

7. An automated system for continuous measurement of the controlled radiation quantities in the operating premises in the controlled area and in the surveillance area as well as a system for control of the radiation situation in the precautionary action zone and the supervised area around the nuclear power plant shall be provided for the nuclear power plant. These systems shall provide for the receipt, processing, recording and archiving of the necessary information on the radiation situation, the effectiveness of the envisaged protection barriers and the activity of the existing radionuclides in the technological equipment as well as the information necessary for prediction and control in the changes of the radiation situation and the possible spread of radioactive substances in the environment under different operating states and emergency conditions.

8. When the radiation situation can vary widely within the precautionary action zone of nuclear facilities and in facilities where unsealed source class I operations are performed, appropriate instruments and apparatus for operational control of the respective types of ionising radiation are required, and local light and sound signalling devices. In these cases, the workers must be provided with individual emergency dosimeters.

9. The results of the individual dosimetric control of the staff in the nuclear facilities and the facilities with SIR shall be kept for the period specified in the Regulation under Article 71, para 2 of the Health Act. Reporting and control of effective and equivalent individual doses received each year and every 5 consecutive years as well as accumulated individual doses throughout the period of occupational work in an ionising radiation environment is mandatory.

The resulting individual doses are recorded in a special logbook with subsequent data entry in individual dosimetry cards for each member of the staff. Upon transition to another job, a copy of the individual dosimetric card of the worker concerned shall be, ex officio, transmitted to the new workplace and the original shall remain at the old workplace.

A copy of the completed individual dosimetry cards shall be given to the Eexternal workers or the doses received during their work at an undertaking. The dose data shall be recorded on their individual dosimetric cards by the undertaking in which they are assigned to work.

10. For the purpose of radiation monitoring, control levels shall be determined for the monitored parameters characterizing the radiation environment and the exposure of the workers.

The determination of control levels shall take into account the basic and secondary limits set out in Annex No. 2 and the principle of optimisation of radiation protection taking into account:

a) the uneven radiological impact over time;

b) the need to maintain the level of radiation exposure in the facility below the statutory limits;

c) the effectiveness of the measures implemented to improve radiation protection in the installation.

Determination of control levels for the volume and specific activity of atmospheric air and water in reservoirs shall take into account the possible entry of radionuclides into the food chain and the external radiation from radionuclides into the environment.

11. The frequency, type and volume of radiation control shall be determined in such a way that there is an opportunity to assess the annual intake of radionuclides in the body of occupationally exposed workers and members of the public.

12. Radiation monitoring data shall be collected, analysed, evaluated and stored both during the operation and after the decommissioning of a nuclear facility or facility with SIR.

Radiation monitoring results are analysed and evaluated by reference to the baseline and secondary limits set out in Appendix No. 2 and to the specified control levels and dose constraints for a facility. If these values are exceeded, the facility manager is required to analyse each such case and to notify the Nuclear Regulatory Agency and the Ministry of Health, including the reasons for and the corrective measures taken.

Annex No. 19
to Article 143

Specific requirements for decommissioning of a facility with radioactive substances

1. Before a decision is taken on the decommissioning of a facility with radioactive substances, a comprehensive investigation of the radiation and technical condition of the technological systems and equipment, the construction structures and the adjacent site shall be carried out.

2. A plan shall be developed for the decommissioning of sites or parts thereof.

The decommissioning plan includes measures to ensure safety at all stages of its decommissioning: shut down, conservation, dismantling, repair works, removal, storage and disposal, rehabilitation of the affected areas in and around the facility.

The decommissioning plan includes:

a) preparation of the necessary equipment for carrying out dismantling work;

b) methods and means of decontamination of dismantled equipment;

c) order and manner of radioactive waste management;

d) assessment of the expected individual and collective exposure doses for staff and the population.

3. After the decommissioning, the use for other purposes of the premises where the radioactive substances were handled shall be authorized by the state health control authorities under the Health Act.

Annex No. 20
to § 1, point 6 of the Additional Provisions

Activity values for different radionuclides over which sealed sources are considered as high-activity sources

Radionuclide	Activity (TBq)
Am-241	6×10^{-2}
Am-241/Be	6×10^{-2}
Cf-252	2×10^{-2}
Cm-244	5×10^{-2}
Co-60	3×10^{-2}
Cs-137	1×10^{-1}
Gd-153	1×10^{0}
Ir-192	8×10^{-2}
Pm-147	4×10^{1}
Pu-238	6×10^{-2}
Pu-239/Be	6×10^{-2}
Ra-226	4×10^{-2}
Se-75	2×10^{-1}
Sr-90 (Y-90)	1×10^{0}
Tm-170	2×10^{1}
Yb-169	3×10^{-1}

Notes:

1. For neutron sources Am-241/Be and Pu 239/Be, the indicated activity refers to the corresponding alpha-emitter.

2. For radionuclides not listed in the table, the corresponding activity is the same as the D-value determined for the respective radionuclide in the IAEA publication "Hazardous quantities of radioactive material (D-Values)" (EPR-D-VALUES 2006).