This is an unofficial translation of the text,
as being effective from January 2, 2016
(this translation was made on April 10, 2016)

Govt. decree 487/2015. (XII. 30.) Korm.

on the protection against ionizing radiation and the corresponding licensing, reporting (notification) and inspection system

The Government, based on the authorization given in Subsections *a), b), c), n), x)*, and *y)* of Section 67 of the Act CXVI of 1996 on atomic energy, and in relation to Section 73 in Paragraph *a)* of Subsection (1) of Section 31 of the Act CXXX of 2010, in its competence established in Subsection (1) of Section 15 of the Fundamental Law orders the following:

Chapter I

GENERAL PROVISIONS

1. Scope of the decree

Section 1

(1) This decree shall apply, with the exemption of those determined in Subsections (2)–(4), to

a) the application of radioactive material,

b) activities relating to equipment generating ionizing radiation without incorporating radioactive material,

c) those performing activities determined in Paragraphs *a)* and *b)*,

d) those who submit a license application for performing activities determined in Paragraphs *a)* and *b)* or provide a notification of that,

e) radiation protection related regulatory procedures.

(2) This decree shall not apply to the defence sector determined in Section 26 of the Act CXVI of 1996 on atomic energy (hereinafter referred to as Atomic Act).

(3) This decree shall not apply to

a) the radioactive material containing radionuclides listed in Column A of Paragraph 1.1. of Annex 1, which activity concentration does not exceed the corresponding general exemption activity concentration value defined in Column B, in a way that if the radioactive material contains more than one radionuclide or if more kinds of radionuclides are used in a radiation hazardous workplace, then the sum of the quotients calculated as the activity concentration of each radionuclide divided by the corresponding exemption values does not exceed 1;

b) the radioactive material containing radionuclides listed in Column A of Paragraph 1.1. of Annex 1, which activity does not exceed the corresponding specific exemption activity value defined in Column D, in a way that if the radioactive material contains more than one radionuclide or if more kinds of radionuclides are used in a radiation hazardous workplace, then the sum of the quotients calculated as the activity of each radionuclide divided by the corresponding exemption values does not exceed 1, unless the mass of the radioactive material is less than 1 ton;

c) the radioactive material containing radionuclides listed in Column A of Paragraph 1.1. of Annex 1, which activity concentration does not exceed the corresponding specific exemption activity concentration value defined in Column C, in a way that if the radioactive material contains more than one radionuclide or if more kinds of radionuclides are used in a radiation hazardous workplace, then the sum of the quotients calculated as the activity concentration of each radionuclide divided by the corresponding exemption values does not exceed 1, provided that the mass of the radioactive material is less than 1 ton,

d) the manufacturing and the operation of electrical equipment containing components emitting ionising radiation and operating with a voltage not exceeding 5 kV,

e) the electron microscope,

f) the below listed radioactive material and equipment under ordinary use, provided that their production, generation, assembly, repair, storage shall not be considered as extraordinary use:

fa) the instrument and watch containing radioactive illuminating material,

fb) smoke detector operating with built-in radioactive source (in the case of a transuranium element, the activity of the radioisotope shall not exceed 100 kBq),

fc) light source and welding rod containing thorium in natural isotope composition,

fd) cold beacon light containing radioactive isotope, and

g) material from permitted discharge, which is contaminated with radioactivity.

(4) The scope of this Decree shall not apply to

a) exposure to the natural level of radiation, such as radionuclides contained in the human body and cosmic radiation detectable at ground level,

b) exposure of members of the public or workers other than air or space crew staff in flight or in space, and

c) ground level exposure to radionuclides present in the undisturbed earth's crust.

(5) The qualification, examinations and labour safety rules of the Decree shall not exempt the licensee and the workers from complying with labour safety and qualification obligations determined by other law.

(6) The provisions of this Decree shall be interpreted to the nuclear facility, without their violation, in harmony with the provisions of the government decree on the nuclear safety regulations for nuclear facilities and the corresponding regulatory activity.

Section 2

(1) The provisions of this Decree shall not apply to

a) those equipment generating ionising radiation that does not incorporate radioactive material, or

b) those equipment generating ionising radiation that incorporates radioactive material in the case of their ordinary use,

which are exempted by the Hungarian Atomic Energy Authority (hereinafter referred to as HAEA) under the effect of this Decree, until the end of the period of exemption or its revoking. The list of exempted equipment generating ionising radiation shall be published by the HAEA on its website.

(2) In the case determined in Paragraph *b)* of Subsection (1) the generation, production, assembly, repair, and storage of radioactive material shall not be qualified as ordinary use.

2. Exemption and release

Section 3

(1) Equipment not listed in Section 2 can be exempted by the HAEA through a licensing procedure, with or without keeping the notification obligation. The list of exempted equipment shall be published by the HAEA on its website.

(2) Radioactive material can be released from regulatory control with a notification or licensing obligation, if

a) the radioactive material's

aa) activity concentration decreases below the general exemption value, or

ab) activity concentration or activity decreases below the specific exemption value, provided that the mass of the radioactive material is less than 1 ton, or

b) its reprocessing, reuse or disposal as non-hazardous waste (including burning) does not induce an individual annual dose to any member of the public exceeding 30 μSv effective dose.

3. Definitions

Section 4

(1) Under the scope of this Decree:

1. *activation*: a process through which a stable nuclide is transformed into a radionuclide by irradiating the material in which it is contained with particles or high-energy photons;

2. *activity:* the expected value of the number of nuclear transitions in a given amount of a radionuclide at a particular energy state, at a given time; its sign is A;

3. *activity-concentration:* activity of the radionuclide contained in the material related to its unit mass; its unit is: Bq/kg;

4. *accident exposure:* an exposure to individuals other than emergency workers, as a result of an accident;

5. *Becquerel:* the unit of activity, its sign is Bq; one Becquerel means one nuclear transition in one second: 1 Bq = 1/s;

6. *exposure:* the act of exposing or the condition of being exposed to ionising radiation emitted outside the body (external exposure) or within the body (internal exposure);

7. *intake:* the total activity of a radionuclide entering the body from the external environment in various ways;

8. *decontamination:* total or partial removal of the contamination through a purposefully applied physical, chemical or biological process;

9. *dosimetry service:* a body or an individual competent to calibrate, read or interpret individual monitoring devices, or to measure radioactivity in the human body or in biological samples, or to assess doses, whose capacity to act in this respect is recognised by the competent authority;

10. *dose limit:* the value of the effective dose, the committed effective dose or the equivalent dose in a specified period, which shall not be exceeded for an individual;

11. *dose constraint:* a constraint set as a prospective upper bound of individual doses, used to define the range of options considered in the process of optimisation for a given radiation source or a planned exposure situation;

12. *effective dose:* the sum of the equivalent doses weighted with w_T tissue weighting factors in all the tissues and organs of the body from internal and external exposure; the sign of the effective dose is E;

13. *health detriment:* reduction in length and quality of life occurring in a population following exposure, including those arising from tissue reactions, cancer and severe genetic disorder;

14. *equivalent dose:* the absorbed dose, in a tissue or organ T weighted with the type and quality of radiations, averaged over the tissue or organ; the sign of equivalent dose is H_T;

15. *equivalent dose rate:* The quotient of the increase of H_T equivalent dose (dH_T) within the period of dt and dt, its unit is: Sievert per second (Sv/s);

16. *controlled area:* an area subject to special rules for the purpose of protection against ionising radiation or preventing the spread of radioactive contamination and to which access is controlled;

17. *absorbed dose:* the energy absorbed per unit mass; the sign of absorbed dose is D;

18. *building material:* any construction product to inbuilt in a permanent manner in a building or parts thereof and the performance of which has an effect on the performance of the building with regard to exposure of its occupants to ionising radiation;

19. *responsible health professional:* a professional taking directly or indirectly part in the diagnosis or therapy of patients that involves the application of ionising radiation, who is not a medical doctor, but who is responsible for his/her practice and its consequences;

20. *supervised area:* an area subject to supervision for the purpose of protection against ionising radiation or the spread of radioactive contamination;

21. *uptake:* the total activity of radionuclides entered or intake into the human body from the external environment, resulting in uptake by body fluids;

22. *occupational health service:* a health professional or body competent to perform medical surveillance of exposed workers and whose capacity to act in that respect is registered in the registry established by the ministerial decree on health services and registration of their operational license;

23. *occupational exposure:* exposure of workers, apprentices and students, incurred in the course of their work;

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

25. *gray:* unit of absorbed dose, its sign is Gy; one gray refers to one joule per one kilogram: 1 Gy = 1 J/kg;

26. *apprentice:* a person receiving training or instruction within a licensee with a view to exercising a specific skill;

27. *accelerator:* an equipment or installation in which particles are accelerated, emitting ionising radiation with energy higher than 1 mega-electron volt (MeV);

28. *disused radioactive source:* a sealed source which is no longer used or intended to be used for the practice for which authorisation was granted;

29. *ICRU sphere*: An object introduced by the International Commission on Radiation Units and Measurements international organization in order to model the human body, a sphere of 30 cm diameter made of tissue equivalent material with a density of 1 g/cm3 and a mass composition of 76.2% oxygen, 11.1% carbon, 10.1% hydrogen and 2.6% nitrogen;

30. *INES-rating:* rating of events according to the International Nuclear Event Scale established by the International Atomic Energy Agency, with the aim to facilitate the provision of information to the public by professional organizations, it indicates the safety importance of an event in a form agreed by the licensee and the authority;

31. *operation of equipment generating ionising radiation:* possession, commissioning, operation, maintenance or keeping maintained, and installation, operation, maintenance or keeping maintained of the installation hosting the operation of this equipment;

32. *special facility:* a nuclear facility, a uranium mine, a radioactive waste repository, a Level A laboratory;

33. *remedial action:* the removal of a radiation source or the reduction of its magnitude (in terms of activity or amount) 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;

34. *ambient dose equivalent:* the dose generated by an extensive environmental radiation source at a point of the ICRU sphere having the depth of d; its sign is: H*(d);

35. *environmental monitoring:* the measurement of external dose rates due to radioactive substances in the environment or of concentrations of radionuclides in environmental media;

36. *outside worker:* any exposed worker who is not employed by the licensee, but performs activities in areas exposed to radiation, including, apprentices and students;

37. *public exposure:* exposure of individuals, excluding any occupational or medical exposure;

38. *committed effective dose:* its sign is E(t), its unit is one Sievert (Sv); the sum of the committed organ or tissue equivalent doses $H_T(t)$ resulting from an intake, each multiplied by the appropriate tissue weighting factor w_T;

39. *committed equivalent dose:* the integral of the equivalent dose rate in a tissue or organ T over time (t) that will be received by an individual as a result of an intake; its sign is $H_T(t)$; in order to keep the dose limits, t = 50 years for adults, and the period up to the age of 70 for infants and children;

40. *existing exposure situation:* 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. *exemption level:* a value established in this Decree and expressed in terms of activity concentration or total activity at or below which a radiation source is not subject to the scope of this Decree;

42. *quality assurance:* all those planned and systematic actions necessary to provide adequate assurance that a structure, system, component or procedure will perform satisfactorily in compliance with agreed standards;

43. *quality control:* the set of operations (programming, coordinating, implementing) intended to maintain or to improve quality. It includes monitoring, evaluation and maintenance at required levels of all characteristics of performance of equipment that can be defined, measured, and controlled;

44. *workplace monitoring:* continuous measurement of the dose rate in a workplace, monitoring of radioactive concentrations in the air and on the surfaces of the workplace;

45. *non-medical imaging exposure:* any deliberate exposure of humans for imaging purposes where the primary intention of the exposure is not to bring a health benefit to the individual being exposed;

46. *normal exposure:* exposure expected to occur under the normal operating conditions of a facility or practice (including maintenance, inspection, decommissioning), including minor incidents that can be kept under control, i.e. during normal operation and anticipated operational occurrences;

47. *medical radiological:* pertaining to medical diagnostic and radiation therapy procedures (including radiodiagnostic, nuclear medicine, radiotherapeutic procedures and interventional radiology), or other medical uses of ionising radiation for planning, guiding and verification purposes;

48. *medical exposure:* exposure incurred by patients or asymptomatic individuals as part of their own medical or dental diagnosis or treatment, and intended to benefit their health, as well as exposure incurred by carers and comforters and by volunteers in medical or biomedical research;

49. *protective measure:* 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;

50. *patient:* a sick individual subject to medical examination or an asymptomatic individual taking part in medical examination to benefit his/her health;

51. *potential exposure:* 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;

52. *application of radioactive material:* possession, production, generation, management, storage, use, transfer, putting into the market and trade, preparation for transport of radioactive material, and possession, commissioning, operation, maintenance or keeping maintained of an equipment containing radioactive material and emitting ionizing radiation, and the construction, operation, maintenance or keeping maintained of a facility hosting the operation, with the exemption of systems and components belonging to the operation of nuclear facilities and radioactive waste repositories and activities connected to the processing of radioactive wastes in radioactive waste repositories;

53. *radioactive source:* a radiation source incorporating radioactive material for the purpose of utilising its radioactivity;

54. *radon:* the Rn-222 radionuclide and its progenies, if appropriate;

55. *radon-exposition:* exposure to radon progenies;

56. *representative person:* an individual receiving a dose that is representative of the higher exposed individuals in the population, excluding those individuals having extreme or rare habits;

57. *Sievert:* unit of equivalent dose and effective dose; its sign is Sv; one Sievert refers to one joule per one kilogram: 1 Sv = 1 J/kg;

58. *radiation source:* an entity that may cause exposure, such as by emitting ionising radiation or by releasing radioactive material;

59. *source container:* 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 and providing mechanical and thermal protection during its transport and handling;

60. *radiotherapy:* utilization of ionising radiation for health benefit, including nuclear medicine for therapeutic purposes;

61. *radiation exposure:* dose induced by the energy absorbed in the human body from an external or internal radiation source;

62. *exposed worker:* a person, either self-employed or working under an employer, who is subject to exposure at work carried out within a practice regulated by this Decree and who is liable to receive doses exceeding one or other of the dose limits for public exposure;

63. *radiation protection:* protection against the harmful effects of ionising radiations;

64. *radiation protection officer:* an individual who is appointed in writing by the licensee for performing radiation protection tasks and keeping contact with the competent authority;

65. *radiation protection categorization:* categorization of radiation hazardous activities based on the parameters of the applied radioactive material and/or equipment generating ionising radiation without incorporating radioactive material;

66. *radiation hazardous workplace:* a unit of radiation protection regulation, the licensee or notifier of which is the user of atomic energy, involving the supervised and controlled area, the applied radioactive materials, the operated equipment generating ionising radiation without incorporating radioactive material, the activities performed and the workers;

67. *radiation hazardous job position:* a job position entailing the performance of radiation hazardous practice;

68. *radiation hazardous practice:* a human activity managed as a planned exposure situation, which can increase the dose of exposed workers from any radiation source;

69. *personal dose equivalent*: the dose equivalent in a soft tissue below a specified point on the body at an appropriate depth d; its sign is Hp(d);

70. *contamination:* the unintended or undesirable presence of radioactive substances on surfaces or within solids, liquids or gases or on the human body;

71. *conversion coefficients and relationships:* conversion coefficients and relationships recommended to use for the estimation of doses from external sources by the International Committee of Radiation Protection in Chapters 4 and 5 in its publication No. 116, and in Chapter 1 in its publication No. 119;

72. *storage:* interim placement of radioactive material (including spent nuclear fuel elements), radioactive source or radioactive waste in a facility with the intention of retrieval;

73. *natural radiation source:* a source of ionising radiation of natural, terrestrial or cosmic origin;

74. *planned exposure situation:* 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;

75. *emergency:* a non-routine situation or event involving a radiation source that necessitates prompt action to mitigate serious adverse consequences for human health and safety, quality of life, property or the environment, or a hazard that could give rise to such serious adverse consequences;

76. *emergency response plan:* arrangements to plan for adequate response in the event of an emergency exposure situation on the basis of postulated events and related scenarios;

77. *emergency management system:* a legal or administrative framework establishing responsibilities for emergency preparedness and response, and arrangements for decision making in the event of an emergency exposure situation;

78. *emergency operational exposure:* exposure received in an emergency exposure situation by an emergency worker;

79. *emergency worker:* any person having a defined role in an emergency and who might be exposed to radiation while taking action in response to the emergency;

80. *emergency exposure situation:* a situation of exposure due to an emergency;

81. *extremities:* the hands, forearms, feet and ankles;

82. *reference level:* in an emergency exposure situation or in an existing exposure situation, the level of effective dose or equivalent dose or activity concentration above which it is judged inappropriate to be exceeded;

83. *sealed radioactive source:* a radioactive source in which the radioactive material is permanently sealed in a capsule or incorporated in a solid form with the objective of preventing, under ordinary use, any dispersion of radioactive substances;

(2) The rules for the calculations connecting to the definitions in Paragraphs 2, 12, 14, 17, 38 and 39 in Subsection (1) are in Annex 2.

Chapter II

RADIATION PROTECTION REQUIREMENTS

4. Justification

Section 5

(1) The use of ionising radiation shall be justified.

(2) A protective measure are justified to be introduced in an existing exposure situation or emergency exposure situation, if it entails more good than harm.

(3) The justification of a protective measure in the case of the application of ionising radiation, existing exposure situation or emergency exposure situation shall be reviewed, whenever there is new and important evidence about their efficacy or potential consequences or new and important information about other techniques and technologies.

(4) Practices involving both occupational and public exposures shall be justified, taking into account both the occupational and public groups.

(5) Practices involving medical exposure shall be justified taking into account the provisions of the decree on the protection of the health of persons exposed to ionising radiation during the provision of health services; Section 6 shall be applied to consumer products. Non-medical imaging practices shall be justified pursuant to Subsection (1) of Section 47.

5. Prohibition of practices

Section 6

(1) The deliberate addition of radioactive material in the production/manufacture of foodstuffs, animal feeding stuffs, toys, personal ornaments and cosmetics is prohibited; additionally, placing on the market, import and export of such products is prohibited.

(2) Practices involving the increase of the activity in consumer products, toys and personal ornaments, resulting in a total activity, which cannot be disregarded from a radiation protection point of view at the time of the placing on the market of the products.

(3) Placing on the market, import and export of products having increased activity as determined in Subsection (2) is prohibited.

(4) Manufacturing, placing on the market or making available to the public of consumer products having importance from radiation protection point of view is prohibited, if their intended use is not justified.

(5) If a product can be considered to fall under the scope of Section 6 of this Decree, then the HAEA may oblige the dealer to prepare an expert opinion that includes a risk assessment, which shall cover

a) the determination of the intentional nature of the practice increasing the activity,

b) the physical and chemical characteristics of the added radioactive material,

c) the construction of the product and accessibility of the radioactive material,

d) the ordinary use of the product during its whole life-cycle, and the associated exposure pathways and potential doses,

e) the dose induced by extraordinary use under credible conditions,

f) the guideline describing the expected lifetime of the product, its ordinary use, installation, maintenance and repair, and

g) the information on the labels serving for informing the end-user, consumer.

(6) Based on the expert opinion made by the radiation protection expert, the HAEA may license, prohibit or bind to conditions the placement of the product on the market or may exempt from the scope of the Atomic Act.

6. Optimisation

Section 7

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.

7. Tools for optimisation

Section 8

(1) In order to optimise the occupational exposure, dose constraints shall be established for occupational exposure induced by the performance of work processes important from radiation protection point of view in special facilities and practices involving the application of radioactive materials belonging to Radiation Protection Category I. The dose constraint shall be established by the licensee. In the case of outside workers the dose constraint shall be established in cooperation between the employer and the concerned user of atomic energy.

(2) In order to optimise the public exposure, in the case of a special facility, the dose constraint for public exposure shall be licensed by the HAEA, based on the proposal of the licensee. The dose constraint shall be set taking account of the public dose limit established for the sum of doses received from each licensed practice and existing exposure situation.

(3) Dose constraints shall be established in terms of individual effective or equivalent doses over a defined appropriate time period.

Section 9

(1) The reference levels for emergency exposure situations and existing exposure situations shall be as follows:

a) reference level expressed in effective dose

aa) 1 mSv per for existing exposure situations,

ab) 100 mSv for emergency exposure situations,

b) after the end of the emergency situation, when further protective measures are unnecessary or unfeasible, the transition from the emergency exposure situation to existing exposure situation shall be performed only if the effective dose rate is lower than 3 mSv per year,

c) the individuals shall be informed about their doses, if the dose exceeds 1 mSv per year in an existing exposure situation or 20 mSv in an emergency exposure situation.

(2) The doses above the reference level shall be primarily taken into account during the optimisation of the protection, but the protective measures shall be continued below the reference level.

(3) For existing exposure situations involving exposure to radon, the reference levels shall be set in terms of radon activity concentration in air as specified in Section 49 for members of the public and Subparagraph *dd)* of Paragraph *d)* of Subsection (1) of Section 25 for workers.

8. Dose limitations

Section 10

In planned exposure situations, the sum of doses to an individual shall not exceed the dose limits laid down for occupational exposure or public exposure.

9. Limitations for exposed workers

Section 11

Individuals under the age of sixteen shall not be required to perform tasks where they might be exposed to radiation. The specific limitations in Subsection (2) and (3) of Section 14 shall apply to apprentices and students between the ages of sixteen and eighteen.

Section 12

(1) The dose limits prescribed in Subsection (2) shall apply to the sum of the annual occupational exposure of workers, to the occupational radon exposure in workplaces falling under notification obligation according to Subparagraph *dd)* of Paragraph *d)* of Subsection (1) of Section 25, and to other occupational exposure situations in agreement with Subparagraph *aa)* of Paragraph *a)* of Subsection (1) of Section 9.

(2) The effective dose limit for occupational exposure shall be 20 mSv. Under justified circumstances the HAEA may license higher effective dose of up to 50 mSv in a single year, 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.

(3) In addition to the effective dose limits determined in Subsection (2) the following limits shall apply to equivalent doses:

a) the limit on the equivalent dose for the eye-lens shall be 20 mSv in a year,

b) 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 cm^2 , regardless of the area exposed,

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

Section 13

As soon as a pregnant worker informs the licensee or, in the case of an outside worker, the employer, of the pregnancy, the pregnant worker shall not be employed in a radiation hazardous job position.

Section 14

(1) The dose limits for apprentices aged 18 years or over and students aged 18 years or over who, if in the course of their studies are obliged to work with radiation sources, shall be the same as the dose limits for occupational exposure laid down in Subsections (2) and (3) of Section 12.

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

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

a) the limit on the equivalent dose for the lens of the eye shall be 15 mSv in a year,

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

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

(4) The dose limits for apprentices and students who are not subject to the provisions of Subsections (1) and (2) shall be the same as the dose limits for members of the public as specified in Section 16.

Section 15

(1) The dose limit for individuals taking part in response to the consequences of an emergency shall be 50 mSv effective dose. An exemption is the individual who takes part in preventing significant public exposure or saving life. The individuals shall be prepared and their actions shall be planned in a way that their expected dose shall not exceed 100 mSv effective dose, the dose of an individual taking part in saving life shall not exceed 250 mSv effective dose.

(2) The employer shall be liable for the protective measures in connection with emergency response.

(3) A woman with childbearing potential, student or apprentice shall not be involved in emergency response.

(4) Emergency workers who are liable to undertake actions whereby an effective dose of 100 mSv may be exceeded shall be clearly and comprehensively informed in advance of the associated health risks and the available protection measures.

(5) If higher than 100 mSv effective dose is expected during the performance of protective measures, than these measures shall be undertaken voluntarily.

(6) In the event of an emergency occupational exposure, the emergency workers shall be subject to radiological monitoring or assessment of the individual doses shall be carried out as appropriate to the circumstances.

(7) An emergency worker can be ordered to perform emergency response measures only if medical examination verifies his/her physiological and psychological ability to perform the measures in a high stress situation with the use of protective equipment. If such a change occurred in the health conditions of the worker

from the last such examination, which may jeopardize the performance of emergency response measures, then he/she shall immediately request a re-examination. The employer shall resign the worker from the obligation to perform emergency response measures, if the worker is no longer able to perform these measures.

(8) For those emergency workers, to whom it cannot be excluded that the sum of the doses received during the performance of emergency response measures exceed 100 mSv effective dose, the employer shall

a) take action to involve them in a life-long medical surveillance system,

b) ensure, including the costs arisen in connection with their travel, their presence at the examinations and treatments (hereinafter referred to as examinations) as part of the medical surveillance system without any condition.

(9) If the period of examination is not a sick leave and the presence at examinations being part of the medical surveillance system is in the working hours applied by the employer, then the employer shall take into account the time needed for the examinations and travels as work spent in normal working hours.

10. Dose limits for public exposure

Section 16

(1) The dose limits for public exposure established in Subsection (2) and (3) shall apply to the sum of annual exposures of a member of the public resulting from all authorised practices.

(2) The limit on the effective dose for public exposure at 1 mSv in a year.

(3) In addition to the dose limit referred to in Subsection (2), the following limits on the equivalent dose shall apply:

a) the limit on the equivalent dose for the lens of the eye shall be 15 mSv in a year, and

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

11. Estimation of effective dose and equivalent dose

Section 17

The conversion coefficients and relationships shall be applied to the estimation of effective doses and equivalent doses.

CHAPTER III

RADIATION PROTECTION TRAINING AND RETRAINING

Section 18

Any practice falling under the scope of the use of atomic energy shall be performed by an individual having appropriate radiation protection qualification, who possesses the professional qualification required for the practice as determined by law.

12. Qualification requirements

Section 19

(1) At least basic level radiation protection qualification shall be obtained by those, who are

a) in job position connecting to radiation hazardous practice, but do not work with radiation sources,

b) managers and workers of such facilities, where orphan sources are most likely to be found or processed,

c) managers and workers of significant transport interchanges, including border and custom offices,

d) in the group of those emergency workers, who contribute in the performance of protective measures, or

e) obliged by the decree on the protection of the health of individuals exposed to ionising radiation during the provision of health services.

(2) At least extended level radiation protection qualification shall be obtained by those, who

a) work with a radiation source in industrial or medical radiological workplace applying ionising radiation, and/or

b) are in the group of those emergency workers, who contribute to the assessment of the emergency radiological situation.

(3) At least comprehensive level radiation protection qualification shall be obtained by those, who

a) lead or supervise the performance of tasks requiring the involvement of Category “A” workers,

b) design the radiation protection of radiation hazardous workplaces or evaluate such plans from radiation protection point of view,

c) design, lead or supervise from radiation protection point of view a therapy process applying ionising radiation in a medical workplace,

d) conduct regulatory inspection at radiation hazardous workplaces,

e) work as radiation protection experts,

f) provide lecture and conduct testing in radiation protection courses,

g) are responsible for the development and evaluation of emergency response plans,

h) are such emergency workers, who contribute to the preliminary development of radiation protection measures, or

i) are such emergency workers, who can order the implementation of protective measures.

13. Obtaining and demonstrating the qualification

Section 20

(1) Basic level radiation protection qualification can be obtained and demonstrated through the participation in basic level radiation protection training and passing the exam successfully.

(2) Extended level radiation protection qualification can be obtained and demonstrated through

a) passing a successful exam of the radiation protection course in a secondary school by a student, provided that the course is named as radiation protection and part of the education programme of the institute,

b) participation in extended level radiation protection training and passing the exam successfully,

c) passing a successful exam of the radiation protection course in a high level education institute by a student, provided that the course is named as radiation protection and part of the education programme of the institute,

d) passing a successful exam of the radiation protection subject at the final examination in a high level education institute,

e) passing a successful exam of the radiation protection subject as a part of postgraduate education.

(3) Comprehensive level radiation protection qualification can be obtained and demonstrated through the participation in comprehensive level radiation protection training and passing the exam successfully.

(4) Each radiation protection qualification is valid for five years after the successful passing of the exam. The qualification shall be renewed prior to the end of the validity period.

(5) The renewal of the radiation protection qualification can be demonstrated through participation in a radiation protection training or retraining and passing the exam successfully. The participation in a retraining requires a valid radiation protection qualification; in addition, participation is allowed within one year after the validity period of the qualification.

(6) In the case of workers working in workplaces requiring radiation protection qualification, the costs of trainings and retraining needed for obtaining and renewing the radiation protection qualification shall be born by the licensee, in the case of outside workers by the employer.

(7) If a worker performs an activity directly relating to radiation protection (including research), then the licensee may initiate at the HAEA the authorization of the examination of the worker without participating in retraining.

(8) The thematic requirements for the radiation protection trainings authorized by the HAEA are detailed in Annex 4.

(9) The licensee shall be responsible for the existence and registration of the appropriate level of radiation protection qualifications. In the case of outside workers the registration shall be the task of the employer; the employer shall present the qualifications of the workers to the licensee prior to the commencement of employment in radiation hazardous job positions.

(10) The worker not having radiation protection qualification can perform radiation hazardous practice until obtaining the appropriate qualification, but one year at maximum, under the supervision of a worker having appropriate radiation protection qualification.

(11) A worker, who obtained the radiation protection qualification abroad, may demonstrate the qualification with an English document issued abroad or a document officially translated to Hungarian.

14. Requirements for trainings and retrainings

Section 21

(1) In basic level training and retraining the lectures can be delivered by only one lecturer. In extended level training and retraining the lectures shall be delivered by at least two lecturers; in comprehensive level training and retraining the lectures shall be delivered by at least four lecturers selected according to the themes.

(2) The radiation protection training and retraining shall be terminated with an examination. The exam shall be taken in front of an examination committee. The extended level and comprehensive level training and retraining shall be terminated with written and oral, or only oral exam. The chair of the examination committee and at least one lecturer shall be members of the examination committee.

(3) The chair of the examination committee is appointed by the HAEA among the radiation protection experts.

(4) The lecturers and the chair of the examination committee shall receive a fee and his/her travel costs shall be reimbursed; their payment shall be made by the organiser of the training. The fee of the chair of the examination committee shall be one twentieth of the salary basis of public servants.

(5) The successful examination shall be demonstrated by a certificate issued by the organizer of the training and retraining. The certificate shall present the level of training and retraining, the natural personal data and social insurance number of the examinee. The issuance of the certificate is free of charge, its costs shall be part of the costs connecting to the examination.

(6) A report shall be made on the training, retraining and the examination. The report shall be signed by the chair of the examination committee. The report shall be stored for 5 years by the organiser of the training, retraining.

CHAPTER IV

REQUIREMENTS AGAINST THE LICENSEE AND OBLIGATIONS OF THE WORKERS

15. Employment requirements

Section 22

(1) The licensee shall assess and implement measures ensuring the radiation protection of exposed workers.

(2) Radiation hazardous work, with the exemption of those described in Subsections (3) and (4), shall be performed by at least two workers, one out of them shall

a) have appropriate professional and radiation protection qualification, and

b) be responsible for the compliance with radiation protection requirements.

(3) If the supervision of the work can be accomplished by remote supervision ensuring image and voice transmission, then the radiation hazardous work can be performed by only one worker having appropriate professional and radiation protection qualification.

(4) Medical X-ray diagnostic imaging can be performed by only one physician or responsible medical professional having appropriate professional and radiation protection qualification.

(5) The responsibility of the licensee shall cover

a) the provision of workers with personal protective equipment,

b) the dosimetry monitoring of workers, as appropriate with respect to the nature of radiation, and

c) in the case of all practices performed in a controlled area, the local reading of personal monitoring data, requesting the reading of regulatory dosimeters with the periodicity determined in the Workplace Radiation Protection Rules (WRPR), and the registration of the measured data.

(6) The provisions of Subsections (1) and (5) shall be effective, even if the exceedance of the reference level is possible in the case of workers exposed to radon in their workplaces.

(7) The employer shall take into account the information from the National Personal Dosimetry Register on the potentially received doses of their employees from a radiation source at another employer or licensee.

(8) The provisions in Subsections (1)–(7) shall apply to the protection of self-employed workers and volunteers.

Section 23

(1) The licensee can employ an outside worker in a controlled area only on the basis of the contract bound with the employer of the outside worker.

(2) During its radiation hazardous work the outside worker shall be provided with the same protection as it is provided to the own workers by the licensee.

(3) The licensee shall check if the outside worker working in a radiation hazardous workplace has the appropriate radiation protection qualification and is aware of the radiation protection arrangement specific to the given workplace.

(4) The licensee shall be responsible for providing the radiation protection for outside emergency workers called for performing protective measures on the site of the facility in the case of an emergency.

(5) The institute performing the remediation or decontamination shall provide the radiation protection of outside workers involved in the remediation of contaminated land, buildings and other constructions, unless the parties agreed otherwise in writing.

(6) Outside worker may work in controlled area abroad, only if possessing appropriate individual dosimetry monitoring certificate.

(7) At the completion of the work performed abroad by an outside worker, the worker shall make his/her individual dosimetry data recorded in the individual dosimetry monitoring certificate. The recorded data shall be reported to the National Personal Dosimetry Register and the employer within 15 days at most following the completion of the work performed abroad.

Section 24

(1) The licensee shall ensure that the exposure conditions and operational protection of apprentices and students aged 18 years or over is equivalent to that of exposed workers of Category "A" or "B" as appropriate.

(2) The licensee shall ensure that the exposure conditions and operational protection of apprentices and students aged between 16 and 18 years is equivalent to that of exposed workers of Category "B".

16. Radiation protection categorization of the practices of the use of atomic energy

Section 25

(1) The practices of the use of atomic energy shall be categorized, based on the danger meant by the applied radioactive material, its intended use, the nature of events deviating from the intended conditions of the practice and the potential accident consequences, in a decreasing order of their danger, shall be categorized as follows:

a) special radiation protection category consists of the operation of special facilities,

b) radiation protection category I consists of:

ba) the application of a radioactive source or radioactive waste belonging to Category 1 according to Annex 1 of the Govt. decree 190/2011. (IX. 19.) Korm. on physical protection requirements for various applications of atomic energy, and on the corresponding system of licensing, reporting and inspection (hereinafter referred to as Physical Protection decree),

bb) production, operation, placement on the market and commercial maintenance of equipment generating ionising radiation and incorporating a radioactive source belonging to Category 1 according to Annex 1 of the Physical Protection decree,

bc) operation of an industrial laboratory categorized to Level B according to the Hungarian Standard MSZ 62-7:2011, or

bd) operation of a medical laboratory categorized to Type II and III according to the Hungarian Standard MSZ 62-7:2011,

be) teletherapy, brachytherapy (afterloading), isotope-therapy workplace,

c) radiation protection category II consists of:

ca) application of a radioactive source or radioactive waste belonging to Category 2 or 3 according to Annex 1 of the Physical Protection decree, with the exemption of Subparagraph *bc)*,

cb) production, operation, placement on the market, sale and commercial maintenance of equipment generating ionising radiation and incorporating a radioactive source belonging to Category 2 or 3 according to Annex 1 of the Physical Protection decree,

cc) operation of laboratories categorized to Level C according to the Hungarian Standard MSZ 62-7:2011, or

cd) operation of a medical laboratory categorized to Type I according to the Hungarian Standard MSZ 62-7:2011,

ce) brachytherapy (implantation) medical therapy workplace,

cf) nuclear imaging workplace,

d) radiation protection category III consists of:

da) application of a radioactive material (a radioactive source or radioactive waste) belonging to Category 4 or 5 according to Annex 1 of the Physical Protection decree, with the exemption of Subparagraph *bc)*, *ce) and cf)*,

db) production, operation, placement on the market, sale and commercial maintenance of equipment generating ionising radiation and incorporating a radioactive source belonging to Category 4 or 5 according to Annex 1 of the Physical Protection decree,

dc) a workplace, where the average annual radon concentration exceeds the reference level specified in Paragraph *b)* of Subsection 3) of Section 49,

dd) practices processing natural, non-nuclear radioactive materials, eventually increasing their concentration,

de) non-medical imaging practices conducted with non-medical radiological equipment.

(2) Annex 5 includes the radiation protection informed categorization, which takes into account the intended application and operation of equipment generating ionising radiation without incorporating radioactive material, the events deviating from the intended operational circumstances and potential consequences occurring in an accident situation.

(3) If the user of atomic energy conducts more practices categorized to category I, II or III, then the provisions relating to the most dangerous practice shall be complied with.

17. Categorization and control of work areas

Section 26

(1) The user of atomic energy shall designate supervised areas and inside them controlled areas in a given radiation hazardous workplace or work area, where appropriate, on the basis of an assessment of the expected annual doses and the probability and magnitude of potential exposures.

(2) The designation of supervised and working areas shall be regularly reviewed and if the radiation protection related changes occur.

(3) The use of atomic energy shall regularly review the working conditions in controlled and supervised areas.

Section 27

(1) That work area shall be designated as a controlled area,

a) where the annual individual dose from the practice may exceed 1 mSv effective dose, 15 mSv for the lens of the eye, 10% of the equivalent dose limits specified in Subsection (3) of the Section 12 for the skin and extremities, or

b) where the dispersion of radioactive contamination or the probability of potential exposure shall be controlled.

(2) In order to control the dose and the probability of potential emergency exposure, and to prevent the dispersion of radioactive contamination in a controlled area, the following radiation protection measures and safety provisions shall be complied with:

a) the boundaries of the controlled area shall be clearly indicated, the entrance shall be provided with signs and inscriptions warning of radiation hazard, the nature of the radiation source and the risk, and of the name of the work area and workplace,

b) with the exemption of the patient, carer and comforter, such person may enter the controlled area, who knows the radiation protection rules to be applied in the controlled area,

c) wherever there is a significant risk of spreading of radioactive contamination, specific arrangements shall be made, including the access and exit of individuals and goods and monitoring of contamination within the controlled area and, where appropriate, in the adjacent area,

d) taking into account the nature and extent of radiological risks in the controlled area, radiological surveillance of the workplace shall be organised,

e) workplace instructions shall be developed in harmony with the radiological risks and the concerned actions and shall be specified in the WRPR,

f) the worker shall be provided with appropriate personal protection equipment, and

g) with the exemption of Subsection (3) only such activity can be performed in the controlled area, which is in relation with the use of atomic energy, and only such tools and materials can be stored, which are required for this activity.

(3) The exemption from the provision determined in Paragraph *g)* of Subsection (2) shall be

a) the industrial radiography, where, if justified, other type of material testing activities can be performed at a different time, and

b) the medical service provision.

(4) During the introduction and implementation of the provisions listed in Subsection (2), the user of atomic energy shall take into account the advice of the radiation protection expert.

Section 28

(1) Under normal circumstances, the special radiation protection provisions and safety rules determined in Subsection (2) of Section 27 shall not be applied in a supervised area.

(2) Requirements for the supervised area are:

a) taking into account the nature and extent of radiological risks, the supervision of the supervised area and its radiological surveillance by authenticated instruments shall be organized,

b) the entrance of the supervised area shall be provided with signs and inscriptions warning of radiation hazard, the nature of the radiation source, and of the name of the work area and workplace,

c) depending on the decision of the radiation protection officer working instructions appropriate to the radiological risk associated with the sources and the operations involved shall be laid down,

d) depending on the decision of the radiation protection officer, the scope of activities that might be performed in the workplace and the tools and materials that might be stored can be limited,

e) the unintentional access shall be prevented to the supervised area, where the ambient dose equivalent rate exceeds 20 μSv/h in more than half of the daily working period, or the ambient dose equivalent may exceed 50 μSv per exposure, but its qualification as a controlled area is not justified.

(3) During the implementation of the provisions listed in Subsection (2), the user of atomic energy shall take into account the advice of the radiation protection expert.

Section 29

(1) The user of atomic energy shall ensure that the radiation protection supervision applied in accordance with Paragraph *d)* of Subsection (2) of Section 27 and Paragraph *a)* of Subsection (2) of Section 28 includes

a) the measurement of the ambient dose equivalent rate or individual equivalent dose, with the indication of the nature and quality of the given radiation, and

b) the measurement of the activity concentration in air and the surface density of contaminating radionuclides, indicating their nature and their physical and chemical states.

(2) The results of these measurements specified in Subsection (1) shall be recorded and shall be used, if necessary, for estimating individual doses, as appropriate.

18. Categorization of exposed workers and individual monitoring

Section 30

(1) The exposed workers shall be categorized, in relation to their dosimetry service and radiation protection monitoring as follows:

a) Category "A": those exposed 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,

b) Category "B": those exposed workers, who are not classified as Category "A" workers.

(2) The licensee, or in the case of outside workers the employer, shall decide on the aptitude and categorization of each of the workers prior to their taking up work that may give rise to exposure. This categorization shall be regularly reviewed by the licensee based on the workplace conditions and medical surveillance. The potential exposures shall also be taken into account during the differentiation.

(3) The workers in Category "A" shall wear individual authority dosimeter.

(4) The licensee shall perform additional individual dosimetry monitoring measures, if the workers in Category "A" are exposed to significant beta and neutron exposure, significant internal exposure, or significant exposure to the lens of the eye or the extremities.

(5) In the case of workers in Category "B" the licensee shall be responsible for justifying the adequacy of the categorization by monitoring. In the frame of its regulatory oversight, the HAEA may require individual dose monitoring and if necessary the individual measurements for workers in Category "B".

(6) In special facilities, in controlled areas where the external exposure of workers may exceed 6 mSv effective dose in a year, a dosimeter with continuous operation and indication that can be read on the scene or an individual dose level indicator giving sound or light warning shall be used in addition to the authority personal dosimeter used in the National Personal Dosimetry Register that shall be provided by the licensee.

(7) Where the effective dose to the air crew is liable to receive an effective dose greater than 1 mSv per year, then the employer shall:

a) assess the exposure of the crew concerned,

b) take into account the assessed exposure when organising working schedules with a view to reducing the doses of highly exposed crew, and

c) inform the workers concerned of the health risks their work involves and their individual dose.

(8) The individual dosimetry measurements of workers receiving beta and neutron exposure shall be ensured by the licensee.

(9) The laboratory performing measurements on beta and neutron exposure shall be accredited.

(10) The appropriate dosimetry measurements of workers receiving internal exposure shall be ensured by the licensee in accordance with the WRPR approved in the frame of licensing.

(11) The laboratory performing measurements on internal exposure shall be accredited.

(12) In cases where individual measurements are not possible or inadequate, the individual monitoring shall be based on an estimate obtained from individual measurements made on other exposed workers, from the results of the surveillance of the workplace provided for Section 28 or on the basis of calculation methods approved by the HAEA.

(13) In the case of an emergency, the licensee shall assess the relevant doses and their distribution in the body of the persons concerned.

19. National Personal Dosimetry Register

Section 31

(1) The results of the individual monitoring performed in the case of all the workers in Category "A" and those who are obliged pursuant to Subsection (5) of Section 30 shall be recorded in the National Personal Dosimetry Register in accordance with Section 33.

(2) In the application of Subsection (1) the following information about exposed workers shall be retained

a) the values of measured or estimated doses,

b) the records on activities performed with the exceedance of the annual dose limit with the approval of the HAEA, and the records on the circumstances and implemented measures in the case of emergency exposures,

c) the workplace monitoring results used for calculation of individual doses.

(3) The information determined in Section 16/A of the Atomic Act and in Subsections (4)-(9) of Section 33 shall be separately recorded in the dose register.

Section 32

(1) The National Personal Dosimetry Register shall provide the recorded data

a) to the licensee and the employer of the outside worker in every evaluation period,

b) to the concerned worker, at request,

c) to the competent occupational medical service, in order to allow the health consequences of the results as required by Subsection (5).

(2) The licensee, in the case of the outside worker the employer, shall ensure that the concerned worker, at request, can have access to

a) his/her individual dosimetry monitoring data, including the results of those measurements, which has provided basis for the calculation of the monitoring results, or

b) the results of dose-calculation made in relation to him/her during the surveillance of the workplace.

(3) In the case of an emergency, the licensee shall immediately inform the concerned person, the National Personal Dosimetry Register and in the case of an outside worker the employer on the results of individual dosimetry monitoring and dose calculation.

(4) The employment in a radiation hazardous job position or re-classification to a job position belonging to Category "A" shall be decided through preliminary occupational medical examination. The data needed for performing the medical examination and supporting the continuous radiation protection surveillance of the worker are provided mutually among the licensee, in the case of an outside worker, the employer, the HAEA, the occupational health service, the radiation protection expert and the competent dosimetry service.

(5) If the worker is employed in radiation hazardous job positions by more than one employer, then each employer shall provide him/her with authority personal dosimeter.

Section 33

(1) The National Personal Dosimetry Register shall acquire the authority dosimeters (hereinafter referred to as authority personal dosimeters) and the provision to the users of atomic energy.

(2) The authority personal dosimeters, depending on the potential individual exposures and applied measurement methods, shall be read with a regularity and quantity as specified in the WRPR. The employer shall inform the HAEA on the fact of suspension or termination of the employment and/or radiation monitoring of a worker subject to individual dose monitoring, and shall immediately return the authority individual dosimeters.

(3) The authority personal dosimeter shall be stored in a such location out of working hours and after the stop of the daily radiation hazardous activity, where it cannot be subject to radiation beyond (in addition to those received during the employment) the natural background radiation. The authority personal dosimeter shall not suffer any damage during its handling or wearing, unauthorized person shall not have access to it.

(4) The National Personal Dosimetry Register shall read the submitted authority personal dosimeters. The quantity determined as the result of the evaluation in the soft body tissue at the depth of 10 mm is the individual dose equivalent [$H_p(10)$]. In the case of external gamma exposure the effective dose specified in the dose limitation shall be considered as equivalent to the $H_p(10)$ individual dose equivalent.

(5) The quantity determined as the result of beta dose measurement in the soft body tissue at the depth of 7 mm is the individual dose equivalent [$H_p(0,07)$]. The equivalent dose for skin specified in the dose limitation shall be considered as equivalent with the $H_p(0,07)$ individual dose equivalent.

(6) The dose received by the lens of the eye shall be evaluated by the use of $H_p(3)$ individual dose equivalent. The equivalent dose for the lens of the eye specified in the dose limitation shall be considered as equivalent with the $H_p(3)$ individual dose equivalent.

(7) The quantity determined as the result of neutron dose measurement in the soft body tissue at the depth of 10 mm under the body surface is the individual dose equivalent [$H_p(10)$]. The effective dose in the case of neutron exposure specified in the dose limitation shall be considered as equivalent with the $H_p(10)$ individual dose equivalent.

(8) The result of the internal dose exposure shall be given in committed effective dose. The effective doses caused by inhalation and ingestion of every radionuclide measureable by the accredited measurement methodology shall be summed.

(9) In order to inform the central register, the beta, neutron and internal dosimetry results shall be submitted to the National Personal Dosimetry Register with the regularity specified to the workplace and immediately after their reading in the case of measurements made in an emergency situation.

(10) The doses induced by external and internal exposures are summed by the National Personal Dosimetry Register.

(11) The authorized extraordinary doses shall be recorded in separation from the doses received under normal circumstances.

20. Medical examination and surveillance

Section 34

(1) The decree of the minister responsible for health established provisions in relation to the medical examination and qualification of exposed workers, their employment, professional and personal hygiene aptitude and opinionating.

(2) The worker, who is qualified as inapt to the given job position from medical viewpoint by the occupational health service during his/her examination shall not be employed in a radiation hazardous job position.

21. Management of extraordinary events

Section 35

(1) During the use of atomic energy, extraordinary events from radiation protection point of view are specially

a) the exceedance of the public or occupational dose limit,

b) the exceedance of the public or occupational dose constraint,

c) the loss or unauthorized use of a radioactive source,

d) the loss of integrity of a sealed radioactive source within its service period or within the authorized extension of the service period, or

e) every such event, including fires, during which radioactive sources might be damaged, or as a result of which radioactive isotopes may be discharged to the environment in an unauthorized manner.

(2) With the exemption of the exceedance of the public dose limit, the licensee shall investigate the circumstances of every event listed in Subsection (1) and implement remedial actions to prevent the recurrence of the event or occurrence of a similar event.

(3) With the exemption of radioactive sources disposed in a radioactive waste repository, the licensee shall verify the integrity of each radioactive source subsequent to events, including fires, which may cause damage to the radioactive sources.

(4) If an extraordinary event occurs, then the HAEA can order the extraordinary reading of dosimeters.

22. Persons performing radiation protection tasks at the licensee

Section 36

The licensee shall perform its radiation protection related tasks with the involvement of radiation protection expert and radiation protection officer, who is designated in writing by the user of atomic energy.

Section 37

(1) The licensee shall prepare, with the involvement of a radiation protection expert the application for obtaining the required license and its annexes for

a) the application of radioactive material,

b) the operation of equipment generating ionizing radiation not incorporating radioactive material.

(2) The radiation protection expert shall, if appropriate, consult with the medical physicist.

(3) The professional knowledge, qualification requirements and professional practical experience required for the radiation protection expert activity are determined in Annex 9.

Section 38

(1) The licensee, in order to supervise the radiation protection tasks shall designate in writing a radiation protection officer within the organization of the licensee. The licensee shall provide the radiation protection officer with all those human and material resources, which are required for the accomplishment of his/her tasks. The radiation protection officer shall be subordinated directly under that manager of the licensee, who is responsible for the compliance with the radiation protection requirements.

(2) Depending on the nature of the practice, the radiation hazardous workplace and the operated equipment, the scope of the tasks of the radiation protection officer shall include:

1. assuring that the work activity performed with radiation be in compliance with the relevant requirements and the provisions of the WRPR,
2. the preparation of the WRPR or making it prepared by the radiation protection expert,
3. the supervision of the workplace surveillance programme, handling of the prepared documentation connected thereto,
4. the participation in the development of work plans through their radiation protection related opinionating,
5. preparation of reports to the managers,
6. teaching the special radiation protection rules and procedures relating to the given practice to the new workers and the documentation thereof,
7. the provision of information to workers working in the radiation hazardous workplace, the organization of their training, the registration of their participation in training programmes, the organization of occupational aptitude medical examination and the maintenance of the record, the organization of the individual dose monitoring and the maintenance of their results,
8. the consent with the request for radioactive material, the receipt of the material, the inspection of its use, the organization of its removal and the maintenance of the records thereof,
9. the supervision of the movement of radioactive material within the site,
10. the development of radiation protection provisions or making them developed at the introduction of new radiation hazardous procedure, methodology, the consent with the implementation of the new procedure from radiation protection point of view,
11. the inspection of the potential contamination of the work area, the direction of its decontamination,
12. the regular testing of relevant safety and warning systems,
13. the assurance of continuous maintenance and periodic authentication and calibration, as required by a separate law, of instrument and tools serving for radiation protection purposes,
14. the maintenance of records on measurements performed after radiation protection related repair and maintenance works,
15. the supervision of the collection, storage and management of radioactive wastes, the monitoring and recording of the radioactivity of discharged materials,
16. the inspection of the environment of the radiation hazardous workplace from radiation protection point of view,
17. the participation in preventive, preparation and response activities in relation to emergency exposure situations,
18. the participation in the labour safety inspection and authority inspections of radiation hazardous workplaces,
19. the maintenance of the records of the authority licenses granted to the user of atomic energy under the effect of this decree, the supervision of their validity, the initiation of their renewal, modification or termination, as appropriate,
20. keeping contact with authorities, the data provision to authorities,

21. the fulfilment of notification obligation prescribed in this decree,

22. the consultation with the radiation protection expert,

23. the fulfilment of all those radiation protection tasks, which are designated to his/her competence by law, the WRPR or the user of atomic energy in writing,

24. the adequate maintenance of the local register according to the provisions of the decree on the rules of registration and verification of radioactive materials and the corresponding data provisions.

(3) At special facilities, and within the licensees of practices in radiation protection categories I and II, a deputy radiation protection officer shall also be designated in writing.

(4) At the special facility, the tasks of the radiation protection officer shall be accomplished by the facility radiation protection organization established within the organization of the user of atomic energy. The leader of the radiation protection organization is the radiation protection officer.

(5) The user of atomic energy can establish a radiation protection service to harmonize the tasks of the radiation protection officers within its organizations.

(6) If more users of atomic energy perform practices within one site, then a site radiation protection service can be established for the harmonization of the tasks of radiation protection officers, the detailed rules of its operation shall be described in the WRPR.

(7) The radiation protection officer and his/her deputy shall have radiation protection qualifications as follows

a) comprehensive level radiation protection qualification in the case of special facilities and practices belonging to radiation protection category I,

b) extended level radiation protection qualification in the case of practices belonging to radiation protection categories II and III.

(8) If the needed measure is beyond the authority and competence of the radiation protection officer or his/her deputy, then the radiation protection officer shall immediately report the radiation protection non-compliance or omission to the manager responsible for the compliance with the radiation protection requirements, and shall propose a solution.

23. Obligations of the workers

Section 39

The worker performing work in supervised or controlled area, including the outside worker, shall

a) know the WRPR and comply with its provisions,

b) adequately use and store the protective equipment,

c) adequately wear and store the personal dosimeters,

d) cooperate with the examiners in examination aiming at assessing the internal dose, and

e) immediately notify the radiation protection officer of radiation protection related events requiring radiation protection measures.

Chapter V

REQUIREMENTS FOR THE APPLICATION OF RADIOACTIVE MATERIAL AND OPERATION OF EQUIPMENT GENERATING ISONISING RADIATION

Section 40

(1) A sealed source shall be used within the service period specified by the manufacturer or within the period of its authorized extension.

(2) A radioactive source belonging to Categories 1-3 of the Physical Protection decree shall only be bought with return guarantee of the manufacturer.

(3) The integrity of the radioactive source shall not be jeopardized by non-allowed mechanical impact, heating or other ways.

(4) The radioactive source shall be stored in its determined storage place.

(5) Equipment generating ionising radiation incorporating radioactive material shall not be operated with a radioactive source, which service period has been expired. At request, the HAEA can extend the service period.

(6) The extended service period has no valid maximum for every sealed radioactive source. Exemptions are the sealed radioactive sources of installed equipment providing measurement technology tasks of industrial processes, for which the maximum of the extended service period shall not be greater than 25 years, or 30 years for radioactive sources having a half-life of 30 years or longer.

(7) Under special circumstances and based on safety analysis the HAEA can authorize specific service period.

24. Requirements for the storage of radioactive materials

Section 41

A radioactive source, prior to its management as radioactive waste, shall be stored for a period longer than 3 years only in a radioactive source holder that is in compliance with the provisions on the transport of radioactive goods of the international agreements on the transport of dangerous goods or in other container providing equivalent level of safety.

25. Requirements for sealed radioactive sources

Section 42

In the case of application of radioactive sources in Categories 1-3 according the Annex 1 of the Physical Protection decree, the user of atomic energy shall:

a) ensure that direct or indirect integrity tests are performed every 5 years to verify and maintain the intactness of each sealed radioactive source,

b) verify with the a regularity specified in the Physical Protection decree that each sealed radioactive source is at its place of intended use or storage, and that the equipment incorporating the radioactive source is in an adequate technical condition,

c) ensure that adequate, documented measures and written guidelines and procedures exist for each fix and portable sealed radioactive source to prevent the unintentional access to the sealed radioactive source, the loss of the sealed radioactive source and the damage to the radioactive source in case of fire,

d) return each sealed radioactive source immediately after the termination of its application to the manufacturer, or transfer temporarily or permanently to another user of atomic energy, and

e) verify that the receiver possesses the necessary license prior to transferring the sealed radioactive source.

26. Requirements for unsealed radioactive sources

Section 43

(1) The preparatory activity with the radioactive material in the case of the regular work with unsealed radioactive sources, and tracer, agricultural examination or experiment shall be performed in an isotope laboratory.

(2) The layout and equipment of the isotope laboratory shall ensure protection against external and internal exposure. The requirements for the layout and equipment of the isotope laboratory primarily depend on the activity and type of the used radioactive isotope and the type of the use and performed measures.

(3) The use of an unsealed radioactive source outside of an isotope laboratory shall be planned and licensed for each type of examination.

(4) The layout of the isotope laboratory shall ensure the separation of the workplace, where work with the radioactive isotope is performed from other workplaces.

(5) The furniture, tools, floor and walls of the workplace where an unsealed radioactive source is applied shall be selected and arranged in a way that allows their effective decontamination.

(6) Appropriate measures shall be implemented to avoid contamination during practices involving dust generation, evaporation.

(7) The licensee shall implement adequate measures to prevent any uncontrolled discharge of radioactive material from the isotope laboratory.

(8) The radioactive waste accumulating in the isotope laboratory shall be classified and collected separately based on their physical and chemical properties, and it shall be stored until the decay of the waste or until it is transported away.

(9) The rules of the radiation protection associated with a practice involving unsealed radioactive sources are as follows:

a) the working area within the area of the isotope laboratory where, as an inevitable consequence of the practice, the ambient dose equivalent rate temporarily exceeds 20 μSv/h, shall be marked with a warning sign,

b) in the laboratory single-use tools shall be used, if it does not increase the amount of generated waste in an unjustified extent,

c) all working places of potential occupational exposure shall be equipped with working tools, personal protection means, decontamination materials and radiation measuring instruments (accompanied with user's

instructions in Hungarian), which are appropriate for the type and activity of the radionuclides used, for the work to be performed and for the purposes of radiation protection,

d) the Radiation Protection Description shall specify whether the significant risk of internal contamination exists in the isotope laboratory; if it does, then the personal monitoring of the employees shall be completed with internal contamination assessment, the necessity and methodology of the assessment shall be determined by the WRPR,

e) the employee shall immediately report the inhalation or ingestion of radioactive substances as a consequence of deviation from licensed technology processes, or the suspicion thereof, to the radiation protection officer and to the head of the working place,

f) in the controlled area activity other than the permitted practice with radioactive isotope shall not be performed, objects not associated with the practice shall not be taken or stored,

g) the laboratory shall store the radioactive waste with a half-life shorter than 65 days in the interim waste storage within the institute that is established for this purpose, as long as it is classified as radioactive waste,

h) the character of the waste, the type of the radionuclide, the estimated activity and the date of the estimation and the planned date of disposal shall be marked on the substances stored in the interim waste storage,

i) in laboratories using open radioactive substances a decontamination set shall be kept ready for use; it shall be provided by the licensee, taking into consideration the working areas of the laboratories, the number of the workers, the type and activity of the radioactive substances used,

j) the decontamination set, which may be used only for the decontamination of the radioactive contamination, shall be stored on an easily accessible, properly labelled place, close to the working area; the employees shall be trained to its use,

k) in case of contamination of the floor, walls and equipment of the working place the immediate decontamination of the contaminated surfaces shall be the task of the employees working there, under the direction of the radiation protection officer, and

l) if the contamination is discovered after the termination of the practice, then the decontamination and the initiation of the inactive status declaration procedure, as a proof of the effectiveness of the decontamination, shall be the responsibility of the owner of the contaminated area.

(10) Prior to transferring the unsealed radioactive source the user of atomic energy shall verify that the receiver possesses the appropriate license.

27. Requirements for equipment generating ionising radiation

Section 44

(1) After maintenance, the equipment can be put into practice only after documented radiation protection measurement and status checking, which demonstrates that the equipment operates within its licensed parameters.

(2) Prior to transferring the equipment generating ionising radiation the user of atomic energy shall verify that the receiver possesses the appropriate license.

CHAPTER VI

NON-MEDICAL IMAGING EXPOSURE

Section 45

(1) The non-medical imaging practices involving intentional exposure include:

a) practices using medical radiological equipment, as

aa) radiological health assessment for employment purposes,

ab) radiological health assessment for immigration purposes,

ac) radiological health assessment for insurance purposes,

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

ae) radiological age assessment,

af) use of ionising radiation for the identification of concealed objects within the human body,

b) practices not using medical radiological equipment, as

ba) use of ionising radiation for detection of concealed objects on or attached to the human body,

bb) use of ionising radiation for detection of concealed humans as part of cargo screening,

bc) practices involving the use of ionising radiation for legal or security purposes.

(2) Each type of non-medical imaging practices involving exposure shall be justified, before being generally accepted.

(3) Each particular application of a generally accepted practice shall be justified.

(4) Each particular application of non-medical imaging exposures performed with medical radiological equipment shall be justified in advance, taking into account the specific objectives of the procedure and the characteristics of the target individual.

(5) The general and particular justification of practices involving non-medical imaging exposure, as specified in Subsection (3)-(4), may be subject to review.

(6) If a particular non-medical imaging exposure is justified and authorized, then

a) the requirements for medical exposures shall be applied for procedures performed with the use of medical radiological equipment,

b) the HAEA establishes a dose constraint significantly lower than the public dose limit for practices performed with non-medical radiological equipment.

(7) The user of atomic energy shall provide information to and consent sought from the individual to be exposed, allowing for cases where the law enforcement authorities may proceed without consent of the individual according to other law.

(8) The proceeding law enforcement authority shall justify the ordered exposures.

CHAPTER VII

RADIATION PROTECTION OF THE PUBLIC

Section 46

(1) In the case of the special facility and practices in radiation protection category I, II and II, the user of atomic energy shall take every reasonable measure to prevent the discharge of the radiation to the environment and the uncontrolled and unmonitored discharge of radioactive contamination.

(2) In the case of the special facility and the practice in radiation protection category I, the user of atomic energy shall

a) take into account the relevant demographic, meteorological, geological, hydrological and ecological conditions during the examination of the proposed siting of the facility from a radiation protection point of view,

b) prepare plans for environmental radioactive discharges, where appropriate, according to the limit values and environmental discharge conditions specified in the ministerial decree on radioactive discharges to air and water and their monitoring during the use of atomic energy, and

c) control the access of the members of the public to the facility or the workplace.

(3) Radiation protection equivalent to the requirements for radiation hazardous workplaces shall be ensured during the operation of portable equipment generating ionising radiation.

28. Tasks of the user of atomic energy

Section 47

The user of atomic energy shall

a) establish and maintain the optimum protection of the members of the public,

b) in the case of the special facility, put the equipment applicable to measure the parameters needed for the assessment of the radioactive contamination of the environment and the dose received by the members of the public into operation, introduce the relevant procedures,

c) in the case of the special facility, verify the effectiveness and maintenance of the equipment determined in Paragraph *b)* and ensure the regular calibration of the instruments, and

d) take into account the advice provided by the radiation protection expert during the implementation of the tasks determined in Paragraphs *a)–c)*.

CHAPTER VIII

EXISTING EXPOSURE SITUATIONS

29. Contaminated areas

Section 48

(1) The owner of the area shall develop an optimised protection strategy for managing contaminated areas, which strategy shall include

a) objectives, including long-term goals pursued by the strategy and the corresponding reference levels,

b) delineation of the affected areas and identification of the affected members of the public,

c) consideration of the need for and extent of protective measures to be applied to the affected areas and members of the public,

d) consideration of the need to prevent or control access to the affected areas, or to impose restrictions on living conditions in these areas,

e) assessment of the exposure of different groups in the population and assessment of the means available to individuals for controlling their own exposure.

(2) For areas with long-lasting residual contamination in which the HAEA has decided to allow habitation and the resumption of social and economic activities, the owner of the area shall ensure, in consultation with stakeholders, that arrangements are in place, as necessary, for the ongoing control of exposure with the aim of establishing living conditions that can be considered as normal, including:

a) establishment of appropriate reference levels,

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

c) if appropriate, remediation measures,

d) if appropriate, designation of delineated areas.

30. Indoor exposure to radon

Section 49

(1) National action plans shall be established and implemented according to a separate law for the optimised reduction of the health risk meant by radon and radon progeny in living and public buildings, and in workplaces.

(2) The reference levels for the annual average activity concentration in air shall not be higher than:

a) 300 Bq/m^3 in living and public buildings,

b) 300 Bq/m^3 in workplaces.

(3) The reference level for radon and radon progeny concentrations shall be reviewed at least every 5 calendar years, based on the nation-wide radon measurement results of the national action plan.

31. Gamma radiation from building materials

Section 50

(1) The reference level applying to indoor external exposure to gamma radiation emitted by building materials, in addition to outdoor external exposure, shall be 1 mSv per year.

(2) The building materials, incorporating especially those elements listed in Annex 6, the use of which may result in dose greater than the reference level based on the corresponding activity concentration index or a more accurate calculation related to the given circumstances shall not be placed on the market.

CHAPTER IX

REGULATORY SYSTEM

32. Guidance on the fulfilment of radiation protection requirements

Section 5

(1) The guidance on the methodology of fulfilling radiation protection requirements and the selected radiation protection information, and the principles on the risk level and data provision are provided in the guidelines issued by the HAEA. The guidelines shall be published on the website of the HAEA.

(2) If the user of atomic energy submits its license application as per Subsection (1) of Section 53 according to the guidelines, and if the user of atomic energy performs its radiation protection related activities according to the guidelines, then the HAEA accepts the selected method as suitable to meet the radiation protection requirements, and the adequacy of the applied method shall not be assessed by the HAEA.

(3) If methods other than described in the guidelines are applied, then the HAEA shall assess in detail the adequacy, suitability and comprehensiveness of the applied method.

(4) The HAEA may authorize the use of special methods taking account of the physical-chemical characteristics of a given radionuclide, a given radiation exposure situation or the characteristics of an individual subject to a given radiation exposure.

33. Exemption

Section 52

(1) The HAEA may exempt from the radiation protection regulatory control established in this decree the equipment generating ionising radiation without incorporating radioactive material, provided that

a) it contains electrical components operating at a potential difference greater than 5 kV,

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, and

c) it is equipped with such a safety lock, which immediately stop the operation of the equipment, if the user tries to access the radiation area or any part generating ionising radiation.

(2) The HAEA, without prejudice to the notification obligation, may exempt from the radiation protection regulatory control established in this decree the equipment generating ionising radiation incorporating radioactive material, which

a) incorporates the radioactive material in the form of a sealed radioactive source that efficiently prevents the direct contact with the radioactive material and the discharge of the radioactive material to the environment, and

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.

(3) The list of exempted equipment shall be published on its website by the HAEA.

34. Licensing procedures

Section 53

(1) The HAEA shall license

1. the application of radioactive material,
2. the operation of equipment generating ionising radiation without incorporating radioactive material,
3. the manufacturing of equipment generating ionising radiation and its placing on the market,
4. the commercial maintenance (maintenance by other than the operator of the equipment) of the equipment generating ionising radiation,
5. the radiation protection qualification of protective equipment against ionising radiation for placing it on the market,
6. the performance of radiation protection trainings and retrainings,
7. the exemption from radiation protection retraining, and the examination without participation in retraining,
8. the conduct of radiation protection expert activity in the scope of use of atomic energy, without prejudice to Subsection (1) of Section 16/B of the Atomic Act,
9. the determination of the public dose constraint of special facilities,
10. the facility level WRPR of special facilities,
11. the exceedance of the annual effective dose limit,
12. production of the consumer product, its placement on the market and use, if its ordinary use falls under the effect of this decree,
13. the management of the radioactively contaminated area, and the stay for living, the conduct of societal and economical practice on those areas, where the radioactive contamination is permanent,
14. the exemption of the type of equipment generating ionising radiation without incorporating radioactive material,
15. the exemption of the type of equipment generating ionising radiation that incorporates radioactive material from regulatory authorization and inspection,
16. the inactive status declaration after the termination of the application of radioactive material,
17. the radiation protection related release of the applied radioactive material from the regulatory oversight established in this decree, if the activity concentration, or activity concentration and activity of the radioactive material does not decrease below the exemption level,
18. the use of the unsealed radioactive source in the isotope laboratory, for each type of examination,
19. the extension of the service period of the sealed radioactive source.

(2) The modification license of the HAEA shall be required for any deviation from the documents attached to the license application providing background for the valid license, excepting those modifications that fall under notification obligation.

(3) The license granted by the HAEA shall be valid for five years at maximum.

(4) The license shall lose its validity, upon the notification of the termination of the authorized practice.

(5) In the case of Paragraph 8 of Subsection (1) the right to conduct radiation protection expert practice shall terminate and the HAEA shall revoke the issued license, if

a) such a circumstance appears, which would not allow granting the license,

b) the radiation protection expert does not comply with his/her retraining obligation.

(6) The applicant shall demonstrate the compliance with the relevant requirements of this decree in the license application submitted for obtaining the licensing as per Subsection (1) or modification license as per Subsection (2).

(7) The placement of the type of the equipment generating ionising radiation on the market shall be registered by the HAEA.

(8) The HAEA shall issue an authority certificate for the recognition of the adequacy of the foreign radiation protection qualification.

35. License applications

Section 54

(1) The license applications shall include:

a) the name and address of the applicant,

b) the indication of the practice to be licensed and

c) the demonstration of the payment of the administration service fee.

(2) The Radiation Protection Description prepared according to Annex 7 and the WRPR prepared according to Annex 8 shall be attached to the license application submitted to obtain license determined in Paragraphs 1, 2 and 18 of Subsection (1) of Section 53.

(3) The license application submitted to obtain license determined in Paragraph 3 of Subsection (1) of Section 53 shall include the following data and information:

a) the detailed description of the equipment generating ionising radiation, its radiation protection categorization,

b) the purpose and intended use of the equipment generating ionising radiation,

c) the technical characteristics of the equipment, product generating ionizing radiation,

d) the description of materials in the case of products that incorporate radioactive material, and the way of their fixation,

e) the measurable dose rate at a distance that is relevant to the use of the product (among others, locations at a distance of 0.1 m from any accessible surface of the product),

f) the extent of doses expected to be received by the operators of the equipment generating ionising radiation,

g) the extent of doses expected to be received by the patients, in the case of the medical radiological equipment,

h) the extent of doses expected to be received by the concerned individuals, in the case of the non-medical imaging equipment,

i) the demonstration of compliance with the requirements of the relevant standard,

j) the user manual and handbook in Hungarian language, and

k) the CE conformity declaration of the manufacturer; the certificate of the recognised body that the manufacturer implements full scope quality management system in the case of medical radiological equipment.

(4) The license application submitted to obtain license determined in Paragraph 4 of Subsection (1) of Section 53 shall include the following data and information:

a) the identification of the equipment to be maintained and their radiation protection categorization, and

b) the WRPR prepared according to Annex 8.

(5) The license application submitted to obtain license determined in Paragraph 5 of Subsection (1) of Section 53 shall include the following data and information:

a) the purpose and intended use of the protective equipment,

b) the technical characteristics of the protective equipment,

c) the demonstration of the compliance with the requirements of the relevant standard,

d) the user manual and handbook in Hungarian language, and

e) the CE conformity declaration of the manufacturer; the certificate of the recognised body that the manufacturer implements full scope quality management system in the case of medical radiological equipment.

(6) The license application submitted to obtain license determined in Paragraph 6 of Subsection (1) of Section 53 shall include the following data and information:

a) the training programme according to Annex 4,

b) the demonstration of the at least three years professional experience of the lecturers, their professional curriculum and copies of certificated corresponding to the lectures to be delivered,

c) the certificate of the lecturers' comprehensive level radiation protection qualification,

d) the form of the certificate to be issued provided that the exam is taken successfully, and

e) the way how the examination of the participants will be performed.

(7) The license application submitted to obtain license determined in Paragraph 7 of Subsection (1) of Section 53 shall be submitted on a form or an electronic form provided by the HAEA and shall include the following data and information:

a) the natural personal identification data, nationality and mailing address, and

b) the application for the exemption from the participation in retraining, and the documents substantiating the possibility to take the examination without participation in the retraining.

(8) The license application submitted to obtain license determined in Paragraph 8 of Subsection (1) of Section 53 shall be submitted on a form or an electronic form provided by the HAEA and shall include the following data and information:

a) the natural personal identification data, nationality and mailing address,

b) the copy of the certificate demonstrating the required qualification, if the certificate has been issued by a foreign high education institute, then the Hungarian translation of the certificate and the decision on its nationalization or recognition,

c) the detailed description of the professional experience and its duration in the frame of a detailed professional curriculum, and

d) the demonstration of the professional experience, especially through employment relation or commercial activity.

(9) The license application submitted to obtain license determined in Paragraph 9 of Subsection (1) of Section 53 shall include the following data and information:

a) the description of the special facility and its site,

b) the description of the applied radioactive materials,

c) the planned and emergency discharge routes, and

d) the value of the proposed dose constraint and the substantiation of the value from radiation protection point of view.

(10) The Radiation Protection Description prepared according to Annex 7 and the WRPR prepared according to Annex 8 shall be attached to the license application submitted to obtain license determined in Paragraph 10 of Subsection (1) of Section 53.

(11) The license application submitted to obtain license determined in Paragraph 11 of Subsection (1) of Section 53 shall include the following data and information:

a) the personal identification data of the concerned individual or individuals as appear in the National Personal Dosimetry Register,

b) the justification of the necessity of the exceedance of the annual effective dose limit,

c) the description of the planned activities and

d) the extent of the expected dose and the document substantiating its optimized nature.

(12) The license application submitted to obtain license determined in Paragraph 12 of Subsection (1) of Section 53 shall include the following data and information:

a) the purpose of the product,

b) the technical characteristics of the product,

c) in the case of products incorporating radioactive materials, the physical, chemical and technical fixation method of these materials,

d) the measurable dose rate at a distance that is relevant to the use of the product (among other, locations at a distance of 0.1 m from any accessible surface of the product), and

e) the dose expected to be received by those who regularly use the product.

(13) The license application submitted to obtain license determined in Paragraph 13 of Subsection (1) of Section 53 shall include the following data and information:

a) the exact specification of the radioactively contaminated area,

b) the cause and description of the radioactive contamination,

c) the environmental measurement data,

d) the strategy of measures to be introduced, and

e) the activities planned on a permanently contaminated area, and the value of expected radiation dose.

(14) The license application submitted to obtain license determined in Paragraph 14 of Subsection (1) of Section 53 shall include the following data and information:

a) the detailed description of the equipment generating ionising radiation,

b) the purpose and intended use of the equipment generating ionising radiation,

c) the technical characteristics of the equipment, product generating ionising radiation,

d) the measurable dose rate at a distance that is relevant to the use of the product (among others, locations at a distance of 0.1 m from any accessible surface of the product),

e) the extent of doses expected to be received by the operators of the equipment generating ionising radiation,

f) the extent of doses expected to be received by the patients, in the case of a medical radiological equipment, and

g) the extent of doses expected to be received by the concerned individuals, in the case of non-medical imaging equipment.

(15) The license application submitted to obtain license determined in Paragraph 15 of Subsection (1) of Section 53 shall include the following data and information:

a) the detailed description of the equipment generating ionising radiation,

b) the purpose and intended use of the equipment generating ionising radiation,

c) the technical characteristics of the equipment, product generating ionising radiation,

d) in the case of products incorporating radioactive materials, the description of these materials and the method of their fixation,

e) the measurable dose rate at a distance that is relevant to the use of the product (among others, locations at a distance of 0.1 m from any accessible surface of the product),

f) the extent of doses expected to be received by the operators of the equipment generating ionising radiation,

g) the extent of doses expected to be received by the patients, in the case of a medical radiological equipment, and

h) the extent of doses expected to be received by the concerned individuals, in the case of non-medical imaging equipment.

(16) The license application submitted to obtain license determined in Paragraph 16 of Subsection (1) of Section 53 shall include the radiation data measurable in the workplace.

(17) The license application submitted to obtain license determined in Paragraph 17 of Subsection (1) of Section 53 shall include the following data and information:

a) the description of the radioactive material to be released from regulatory control,

b) the description of the actions to be performed for the release from regulatory control and the associated dose assessment, and

c) the description of the activity to be performed with the released radioactive material.

(18) The modification license application submitted to obtain license determined in Subsection (2) of Section 53 shall include the following data and information:

a) the description of the intended modification and its reason, and

b) the modified version of the documents submitted during the licensing process and concerned with the intended modification, with the indication of the changes.

(19) The license application submitted to obtain license determined in Paragraph 19 of Subsection (1) of Section 53 shall include the following data and information:

a) the safety analysis of the method of use taking into account the evaluation of the events associated with the radioactive source, and

b) the integrity examination record that is not older than one year.

Section 55

(1) If the applicant does not submit the documents substantiating the application through the client gate, then the documentation shall be submitted in two printed versions and in electronic media in a version that is agreed and can be edited by the HAEA.

(2) In procedures as per Paragraph 1 of Subsection (1) of Section 53, the administration deadline of the HAEA shall be:

a) 3 months for special facilities,

b) 30 days for activities belonging to Category I, II or III.

(3) In procedures as per Paragraphs 2-5 and 9-19 of Subsection (1) of Section 53, the administration deadline of the HAEA shall be 30 days.

(4) The manager of the HAEA, if justified, may extend once the administration deadline with 30 days at maximum. The HAEA shall notify the client of the extension of the administration deadline, and those who were notified of the commencement of the procedure.

36. Review and assessment of license applications

Section 56

(1) The HAEA shall review and assess the license application against the requirements of this decree.

(2) In the licensing procedure as per Paragraph 12 of Subsection (1) of Section 53, the HAEA shall review and assess whether:

a) the service provided by the consumer product justifies its intended use,

b) the design is adequate in order to minimise exposures in normal use and the likelihood and consequences of misuse or accidental exposures, or whether there should be conditions imposed on the technical and physical characteristics of the product,

c) the product is adequately designed to meet the exemption criteria, and, where applicable, is of an approved type and does not necessitate specific precautions for disposal when no longer in use,

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

37. Notification obligation

Section 57

(1) The licensee shall notify the HAEA of

a) in relation to the radioactive material or the equipment generating ionising radiation as per Paragraphs 1 and 2 of Subsection (1) of Section 53

aa) the commencement of its application or operation, at least 30 days prior to the commencement of the intended practice,

ab) the termination of its application or operation, at least 30 days prior to the termination of the practice,

ac) the obtaining of the ownership right, at least 30 days prior to the intended obtaining of the ownership right,

ad) the transfer of its use under any legal title, at least 10 days prior to the intended transfer of use,

b) release of radioactive material from regulatory control being below the general exemption activity concentration, or the specific exemption activity concentration or activity values, at least 30 days prior to the intended release,

c) the operation of the equipment generating ionising radiation and incorporating radioactive material that is exempted from regulatory control, at least 10 days prior to the commencement of the intended operation,

d) the transfer of the use of the equipment generating ionising radiation and incorporating radioactive material that is exempted from regulatory control under any legal title, at least 10 days prior to the intended transfer of use,

e) the modification of the data specified in the WRPR under Paragraphs 1.1.1 and 1.1.17 of the Annex 8, within 15 days subsequent to the modification,

f) the data of sale of equipment generating ionising radiation as per Paragraph 3 of Subsection (1) of Section 53, by February 15 of the year subsequent to the year of sale, with the identification of the type, quantity and receiving licensee of the sold equipment.

(2) The HAEA shall inform the notifier of taking note of the notification as per Subsection (1) within 8 days in writing.

(3) The organiser of the radiation protection training and retraining shall notify the HAEA of:

a) the planned date and time of the radiation protection examination, the level of the training or retraining, the venue of the examination completing the training or retraining, at least 15 days prior to the planned date of the examination;

b) the completion of the training, retraining.

(4) The organiser of the radiation protection training and retraining shall submit the report on the examination and the data of the issued certificates within 8 days subsequent to the date of the examination.

(5) The HAEA shall inform the notifier of taking note of the notification as per Subsection (3) and (4), with the designation of the chairperson of the examination for notification as per Paragraph *a)* of Subsection (3), within 8 days.

(6) The radiation protection expert shall notify the HAEA of any changes in his/her registered data, using the form or sheet provided by the Authority, within 15 days subsequent to the change.

(7) The radiation protection expert shall inform the licensing authority of the suspension of his/her expert practice, indicating the first and the last day of suspension. The suspension shall not relate to the rights and obligation of the expert regarding his/her cases in progress.

(8) The HAEA shall inform the notifier of taking note of the notification as per Subsection (6) and (7, within 8 days, in writing.

38. Reportable events

Section 58

(1) The licensee shall report any radiation protection related extraordinary event to the HAEA immediately, but at most within 2 hours after its observation.

(2) Within 16 hours at most subsequent of the observation, the event shall be classified according to the INES scale. The licensee shall provide a proposal for the INES classification and submit it to the HAEA. The final classification is made by the HAEA.

(3) The public shall be informed on events classified as INES 1 or higher within 24 hours subsequent to the observation of the event. The public information shall be made by the licensee in a way agreed with the HAEA; the text of the information release on the event classified as INES 1 or higher shall be sent, for information, to the HAEA and the MoI Directorate General for National Disaster Management.

(4) The licensee shall investigate the circumstances of the event reported as per Subsection (1), and then submit the report to the HAEA on the results of the investigation and the corrective measures aiming at preventing the recurrence of the event or occurrence of similar events within 45 days after the observation of the event.

39. Additional reporting obligations and measures

Section 59

(1) The HAEA shall establish reporting obligation to the licensee in addition to those listed in this decree for the oversight of the operability and effectiveness of the implemented radiation protection system and for the control of the requirements established in this decree.

(2) If the individual dose increment of any worker, including the outside worker, in a reading period exceeds 10% of the relevant annual limit, then the licensee shall immediately investigate the event and submit the result of the investigation to the HAEA.

40. Inspection

Section 60

(1) For the radiation protection of the workers and the public, the HAEA shall regularly and methodically inspect the practices of the users of atomic energy, the condition of the radioactive material applied and equipment operated by them, in accordance with the graded approach.

(2) The HAEA can inspect the radiation protection training and examination.

(3) The HAEA can inspect or make the operation of the organization of the licensee audited and the aptitude of the individuals (including the staff of suppliers) having impact in radiation protection in relation to the designated tasks.

(4) The HAEA can conduct announced and, if needed for the purpose of the inspection, unannounced inspections at the licensee. In the case of unannounced inspection the fact of the inspection shall be reported by the representative of the HAEA to the authorized representative of the licensee on the scene, then the

representative of the HAEA shall immediately commence the conduct of the inspection after the establishment of the necessary circumstances.

(5) During the inspection the HAEA can require the presentation of the practice by the licensee.

(6) During the inspections of the HAEA, the licensee shall cooperate with the HAEA, facilitate the success of the inspection, and provide the results and documents of the internal inspection.

(7) The HAEA shall prepare an annual inspection plan that shall be updated annually.

(8) The inspection of the HAEA shall not release the licensee from the implementation of its internal inspection activity.

(9) The HAEA shall conduct an inspection, if the increment of the recorded individual dose of the worker is greater than 6 mSv effective dose in a reading period, or his/her cumulated dose is greater than 20 mSv effective dose in a given calendar year, or the cumulated dose of the worker in a given year exceeds 30% of the dose limit for any organ.

41. Regulatory inspection prior to commencement of the activity

Section 61

(1) After issuing the license as per Paragraphs 1 and 2 of Subsection (1) of Section 53, the inspection of the HAEA shall be the condition for the commencement of the licensed practice, during which the HAEA shall inspect the compliance with the requirements established in this decree and the implementation of the Radiation Protection Description.

(2) The inspections of special facilities and equipment generating ionising radiation belonging to radiation protection category I or II, including the inspection as per Subsection (1), the National Centre for Public Health (hereinafter referred to as HCPH) shall provide professional support to the HAEA through on-scene measurements, professional assessments, and taking records.

42. Enforcement

Section 62

(1) In order to enforce the compliance with legal provisions and authority requirements, if appropriate, the HAEA shall initiate an enforcement procedure.

(2) Depending on the radiation protection impact of a breach of legislation or authority provision, the enforcement action may be the following:

a) in the case of a breach of a legislative or authority provision having minor radiation protection significance, a written warning to the licensee, in which the HAEA identifies the characteristics and legal basis of the breach, and specifies the duration permitted for the performance of corrective actions;

b) in the case of a breach of a legislative or authority provision having higher radiation protection significance, provision of supplementary conditions for the performance of the licensed activity;

c) in the case of a breach of a legislative or authority provision of major radiation protection significance, a limitation or termination of that licensed activity, withdrawal of license.

(3) In all the above cases the HAEA requires that the licensee investigate comprehensively the identified deviations and implement the necessary measures in order to remedy the deviations and to prevent the occurrence or recurrence of events.

43. Assessment and registration of the occupational individual dosimetry monitoring results – National Personal Dosimetry Register

Section 63

(1) The HAEA shall perform, with the operation of the National Personal Dosimetry Register as per Section 32, the regular individual monitoring of workers classified to Category “A” on the basis of measurements, the interpretation and evaluation of monitoring results.

(2) During the performance of its radiation protection tasks the HAEA shall cooperate with the NPHC and other public health and radiation heath organizations.

44. Assessment of public doses

Section 64

(1) The public exposure shall be assessed by the HAEA, based on environmental measurements made on the territory of the country.

(2) The type and frequency of the measurements needed for the assessment, the method how the measurements results made by various organisations shall be collected are set out in the decree on the monitoring of radiation conditions relevant for public exposure of natural and artificial origin and on the scope of quantities obligatory to be measured.

(3) During the assessment of public doses the HAEA shall take into account

a) the doses received from external radiation, and

b) the radionuclide uptake, the nature of radionuclides, their physical and chemical characteristics if required, and the activity concentration of radionuclides in foodstuff, drinking water and other relevant environment elements.

(4) The HAEA shall maintain records on the measurements made in relation to external exposure and radioactive contamination, the estimations made in relation to the radioactive contamination, the estimations made in relation to the radionuclide uptake, and the results of the assessment of doses received by the representative person.

45. Data provided by the Authority

Section 65

(1) In relation to the rules of regulatory oversight, the HAEA shall publish on its website and keep updated

a) the list of equipment generating ionising radiation that does not incorporate radioactive material and authorized to place on the market,

b) the list of exempted equipment generating ionising radiation,

c) the list of licensed radiation protection protective tools,

d) the list of foreign certificates demonstrating radiation protection qualification that are accepted without regulatory procedure,

e) the results of external dose and radioactive contamination in relation to public exposure, the results of radionuclide uptake estimations, the results of the dose assessments in relation to the dose received by the representative person,

f) its inspection plan, and

g) the list of those, who obtained license to organise radiation protection training and retraining.

(2) The HAEA shall publish the conclusions drawn and experience gained from significant events reported according to Section 57 and the subsequent investigations.

(3) The HAEA shall notify the International Atomic Energy Agency of the event classified as INES 1 or higher within 24 hours after the occurrence or observation of the event.

(4) The HAEA shall notify the contact points of the competent authorities of other member states of the data and information received in the course of the licensing procedure as per Paragraph 12 of Subsection (1) of Section 53; in addition, the HAEA shall provide information, at request, on its corresponding resolution and its technical background.

CHAPTER X

FINAL PROVISIONS

46. Provision on entry into force

Section 66

This government decree enters into force on January 1, 2016.

47. Transient provisions

Section 67

(1) If the user of atomic energy bought a radioactive source without a returning guarantee of the manufacturer, then it shall transfer to such a facility immediately after the termination of its use, where its long-term storage or disposal is ensured, or transfer it to another licensed undertaking.

(2) At the request of the user of atomic energy, the HAEA may exempt from the compliance with the requirements set out in Section 41.

Section 68

(1) Provisions for those licenses and resolutions belonging to the scope of this decree that was issued prior to this decree entered into force are as follows:

a) the licenses and resolutions on exemptions issued by the Office of the Chief Medical Officer of the National Public Health Medical Officers' Service (hereinafter referred to as NPHMOS OCMO) and the capital and county government offices shall preserve their effect by the date determined in the license and resolution, with the conditions that the licenses issued for practices as per Paragraphs 1 and 2 of Subsection (1) of Section 53 shall be effective by the date set out in the license that determined the shortest period of validity and the notification and data provision requirements established in the issued licenses that belong to the scope of this decree shall be provided to the HAEA,

b) the resolutions approving the thematic and examination requirements of radiation protection training and retraining issued with undetermined validity period shall lose the effect on December 31, 2016.

(2) The license applications and documents prepared in these procedures being in progress at the NPHMOS OCMO and the capital and county government offices when this decree entered into force shall be immediately transferred to the HAEA, with parallel notification of the client.

(3) The expert licenses issued by the Health Registration and Training Centre and the Hungarian Chamber of Engineers prior to this decree entered into force are effective by December 31, 2018.

Section 69

(1) The NPHMOS OCMO and the capital and county government offices shall deliver to the HAEA after this decree enters into force, but at most within 90 days

a) the effective licenses and their background documents in relation to procedures established in Section 53,

b) the effective manufacturing license, the list of equipment generating ionising radiation that incorporates radioactive material, the copies of the issued licenses,

c) the list of exempted equipment, the issued exemption licenses and their background documents, and

d) the effective licenses and their background documents issued by the NPHMOS OCMO and the capital and county government offices performing radiation health tasks.

(2) If the documents and data listed in Subsection (1) are available in electronic version at the NPHMOS OCMO and the capital and county government offices, then they shall be provided the HAEA in an electronic medium.

(3) The operation of the dosimetry database shall be the task of the NPHMOS OCMO by December 31, 2020 with the condition that the HAEA shall be provided with full scope user rights from the date when this decree enters into force.

48. Compliance with legal acts of the European Union

Section 70

This Decree is intended to provide compliance with the Council Directive 2013/59/EURATOM of 5th 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.

49. Repealing provisions

Sections 71–73. §[1]

Annex 1 to Govt. Decree 487/2015. (XII. 30.) Korm.

General and specific exemption activity-concentration and specific exemption activity of radionuclides

1. General and specific exemption activity-concentration and specific exemption activity of radionuclides

1.1. Table of general and specific exemption activity-concentration and specific exemption activity of radionuclides

	A	B	C	D
1	**Radionuclide**	**General exemption activity-concentration (Bq/g)**	**Specific exemption activity-concentration (Bq/g)**	**Specific exemption activity (Bq)**
2	H-3	10^2	10^6	10^9
3	Be-7	10	10^3	10^7
4	C-14	1	10^4	10^7
5	O-15	values of column C and D shall apply	10^2	10^9
6	F-18	10	10^1	10^6
7	Na-22	10^{-1}	10^1	10^6
8	Na-24	1	10^1	10^5
9	Si-31	10^3	10^3	10^6
10	P-32	10^3	10^3	10^5
11	P-33	10^3	10^5	10^8
12	S-35	10^2	10^5	10^8
13	Cl-36	1	10^4	10^6
14	Cl-38	10	10^1	10^5
15	Ar-37	values of column C and D shall apply	10^6	10^8
16	Ar-41	values of column C and D shall apply	10^2	10^9
17	K-40[(a)]	10^1	10^2	10^6
18	K-42	10^2	10^2	10^6
19	K-43	10	10^1	10^6
20	Ca-45	10^2	10^4	10^7
21	Ca-47	10	10^1	10^6
22	Sc-46	10^{-1}	10^1	10^6
23	Sc-47	10^2	10^2	10^6
24	Sc-48	1	10^1	10^5
25	V-48	1	10^1	10^5

26	Cr-51	10^{2}	10^{3}	10^{7}
27	Mn-51	10	10^{1}	10^{5}
28	Mn-52	1	10^{1}	10^{5}
29	Mn-52 m	10	10^{1}	10^{5}
30	Mn-53	10^{2}	10^{4}	10^{9}
31	Mn-54	10^{-1}	10^{1}	10^{6}
32	Mn-56	10	10^{1}	10^{5}
33	Fe-52[(b)]	10	10^{1}	10^{6}
34	Fe-55	10^{3}	10^{4}	10^{6}
35	Fe-59	1	10^{1}	10^{6}
36	Co-55	10	10^{1}	10^{6}
37	Co-56	10^{-1}	10^{1}	10^{5}
38	Co-57	1	10^{2}	10^{6}
39	Co-58	1	10^{1}	10^{6}
40	Co-58 m	10^{4}	10^{4}	10^{7}
41	Co-60	10^{-1}	10^{1}	10^{5}
42	Co-60 m	10^{3}	10^{3}	10^{6}
43	Co-61	10^{2}	10^{2}	10^{6}
44	Co-62 m	10	10^{1}	10^{5}
45	Ni-59	10^{2}	10^{4}	10^{8}
46	Ni-63	10^{2}	10^{5}	10^{8}
47	Ni-65	10	10^{1}	10^{6}
48	Cu-64	10^{2}	10^{2}	10^{6}
49	Zn-65	10^{-1}	10^{1}	10^{6}
50	Zn-69	10^{3}	10^{4}	10^{6}
51	Zn-69 m[(b)]	10	10^{2}	10^{6}
52	Ga-72	10	10^{1}	10^{5}
53	Ge-71	10^{4}	10^{4}	10^{8}
54	As-73	10^{3}	10^{3}	10^{7}
55	As-74	10	10^{1}	10^{6}
56	As-76	10	10^{2}	10^{5}
57	As-77	10^{3}	10^{3}	10^{6}
58	Se-75	1	10^{2}	10^{6}
59	Br-82	1	10^{1}	10^{6}

60	Kr-74	values of column C and D shall apply	10^2	10^9
61	Kr-76	values of column C and D shall apply	10^2	10^9
62	Kr-77	Values of column C and D shall apply	10^2	10^9
63	Kr-79	Values of column C and D shall apply	10^3	10^5
64	Kr-81	Values of column C and D shall apply	10^4	10^7
65	Kr-83 m	Values of column C and D shall apply	10^5	10^{12}
66	Kr-85	Values of column C and D shall apply	10^5	10^4
67	Kr-85 m	Values of column C and D shall apply	10^3	10^{10}
68	Kr-87	Values of column C and D shall apply	10^2	10^9
69	Kr-88	Values of column C and D shall apply	10^2	10^9
70	Rb-86	10^2	10^2	10^5
71	Sr-85	1	10^2	10^6
72	Sr-85 m	10^2	10^2	10^7
73	Sr-87 m	10^2	10^2	10^6
74	Sr-89	10^3	10^3	10^6
75	Sr-90 [(b)]	1	10^2	10^4
76	Sr-91 [(b)]	10	10^1	10^5
77	Sr-92	10	10^1	10^6
78	Y-90	10^3	10^3	10^5
79	Y-91	10^2	10^3	10^6
80	Y-91 m	10^2	10^2	10^6
81	Y-92	10^2	10^2	10^5
82	Y-93	10^2	10^2	10^5
83	Zr-93	10	10^3	10^7
84	Zr-95 [(b)]	1	10^1	10^6
85	Zr-97 [(b)]	10	10^1	10^5
86	Nb-93 m	10	10^4	10^7
87	Nb-94	10^{-1}	10^1	10^6

88	Nb-95	1	10^{1}	10^{6}
89	Nb-97 [(b)]	10	10^{1}	10^{6}
90	Nb-98	10	10^{1}	10^{5}
91	Mo-90	10	10^{1}	10^{6}
92	Mo-93	10	10^{3}	10^{8}
93	Mo-99 [(b)]	10	10^{2}	10^{6}
94	Mo-101 [(b)]	10	10^{1}	10^{6}
95	Tc-96	1	10^{1}	10^{6}
96	Tc-96 m	10^{3}	10^{3}	10^{7}
97	Tc-97	10	10^{3}	10^{8}
98	Tc-97 m	10^{2}	10^{3}	10^{7}
99	Tc-99	1	10^{4}	10^{7}
100	Tc-99 m	10^{2}	10^{2}	10^{7}
101	Ru-97	10	10^{2}	10^{7}
102	Ru-103 [(b)]	1	10^{2}	10^{6}
103	Ru-105 [(b)]	10	10^{1}	10^{6}
104	Ru-106 [(b)]	10^{-1}	10^{2}	10^{5}
105	Rh-103 m	10^{4}	10^{4}	10^{8}
106	Rh-105	10^{2}	10^{2}	10^{7}
107	Pd-103 [(b)]	10^{3}	10^{3}	10^{8}
108	Pd-109 [(b)]	10^{2}	10^{3}	10^{6}
109	Ag-105	1	10^{2}	10^{6}
110	Ag-110 m [(b)]	10^{-1}	10^{1}	10^{6}
111	Ag-111	10^{2}	10^{3}	10^{6}
112	Cd-109 [(b)]	1	10^{4}	10^{6}
113	Cd-115 [(b)]	10	10^{2}	10^{6}
114	Cd-115 m [(b)]	10^{2}	10^{3}	10^{6}
115	In-111	10	10^{2}	10^{6}
116	In-113 m	10^{2}	10^{2}	10^{6}
117	In-114 m [(b)]	10	10^{2}	10^{6}
118	In-115 m	10^{2}	10^{2}	10^{6}
119	Sn-113 [(b)]	1	10^{3}	10^{7}
120	Sn-125	10	10^{2}	10^{5}
121	Sb-122	10	10^{2}	10^{4}

122	Sb-124	1	10^{1}	10^{6}
123	Sb-125 [(b)]	10^{-1}	10^{2}	10^{6}
124	Te-123 m	1	10^{2}	10^{7}
125	Te-125 m	10^{3}	10^{3}	10^{7}
126	Te-127	10^{3}	10^{3}	10^{6}
127	Te-127 m [(b)]	10	10^{3}	10^{7}
128	Te-129	10^{2}	10^{2}	10^{6}
129	Te-129 (m) [(b)]	10	10^{3}	10^{6}
130	Te-131	10^{2}	10^{2}	10^{5}
131	Te-131 m [(b)]	10	10^{1}	10^{6}
132	Te-132 [(b)]	1	10^{2}	10^{7}
133	Te-133	10	10^{1}	10^{5}
134	Te-133 m	10	10^{1}	10^{5}
135	Te-134	10	10^{1}	10^{6}
136	I-123	10^{2}	10^{2}	10^{7}
137	I-125	10^{2}	10^{3}	10^{6}
138	I-126	10	10^{2}	10^{6}
139	I-129	10^{-2}	10^{2}	10^{5}
140	I-130	10	10^{1}	10^{6}
141	I-131	10	10^{2}	10^{6}
142	I-132	10	10^{1}	10^{5}
143	I-133	10	10^{1}	10^{6}
144	I-134	10	10^{1}	10^{5}
145	I-135	10	10^{1}	10^{6}
146	Xe-131 m	Values of column C and D shall apply	10^{4}	10^{4}
147	Xe-133	Values of column C and D shall apply	10^{3}	10^{4}
148	Xe-135	Values of column C and D shall apply	10^{3}	10^{10}
149	Cs-129	10	10^{2}	10^{5}
150	Cs-131	10^{3}	10^{3}	10^{6}
151	Cs-132	10	10^{1}	10^{5}
152	Cs-134	10^{-1}	10^{1}	10^{4}
153	Cs-134 m	10^{3}	10^{3}	10^{5}
154	Cs-135	10^{2}	10^{4}	10^{7}

155	Cs-136	1	10^{1}	10^{5}
156	Cs-137 [(b)]	10^{-1}	10^{1}	10^{4}
157	Cs-138	10	10^{1}	10^{4}
158	Ba-131	10	10^{2}	10^{6}
159	Ba-140 [(b)]	1	10^{1}	10^{5}
160	La-140	1	10^{1}	10^{5}
161	Ce-139	1	10^{2}	10^{6}
162	Ce-141	10^{2}	10^{2}	10^{7}
163	Ce-143	10	10^{2}	10^{6}
164	Ce-144	10	10^{2}	10^{5}
165	Pr-142	10^{2}	10^{2}	10^{5}
166	Pr-143	10^{3}	10^{4}	10^{6}
167	Nd-147	10^{2}	10^{2}	10^{6}
168	Nd-149	10^{2}	10^{2}	10^{6}
169	Pm-147	10^{3}	10^{4}	10^{7}
170	Pm-149	10^{3}	10^{3}	10^{6}
171	Sm-151	10^{3}	10^{4}	10^{8}
172	Sm-153	10^{2}	10^{2}	10^{6}
173	Eu-152	10^{-1}	10^{1}	10^{6}
174	Eu-152 m	10^{2}	10^{2}	10^{6}
175	Eu-154	10^{-1}	10^{1}	10^{6}
176	Eu-155	1	10^{2}	10^{7}
177	Gd-153	10	10^{2}	10^{7}
178	Gd-159	10^{2}	10^{3}	10^{6}
179	Tb-160	1	10^{1}	10^{6}
180	Dy-165	10^{3}	10^{3}	10^{6}
181	Dy-166	10^{2}	10^{3}	10^{6}
182	Ho-166	10^{2}	10^{3}	10^{5}
183	Er-169	10^{3}	10^{4}	10^{7}
184	Er-171	10^{2}	10^{2}	10^{6}
185	Tm-170	10^{2}	10^{3}	10^{6}
186	Tm-171	10^{3}	10^{4}	10^{8}
187	Yb-175	10^{2}	10^{3}	10^{7}
188	Lu-177	10^{2}	10^{3}	10^{7}

189	Hf-181	1	10^{1}	10^{6}
190	Ta-182	10^{-1}	10^{1}	10^{4}
191	W-181	10	10^{3}	10^{7}
192	W-185	10^{3}	10^{4}	10^{7}
193	W-187	10	10^{2}	10^{6}
194	Re-186	10^{3}	10^{3}	10^{6}
195	Re-188	10^{2}	10^{2}	10^{5}
196	Os-185	1	10^{1}	10^{6}
197	Os-191	10^{2}	10^{2}	10^{7}
198	Os-191 m	10^{3}	10^{3}	10^{7}
199	Os-193	10^{2}	10^{2}	10^{6}
200	Ir-190	1	10^{1}	10^{6}
201	Ir-192	1	10^{1}	10^{4}
202	Ir-194	10^{2}	10^{2}	10^{5}
203	Pt-191	10	10^{2}	10^{6}
204	Pt-193 m	10^{3}	10^{3}	10^{7}
205	Pt-197	10^{3}	10^{3}	10^{6}
206	Pt-197 m	10^{2}	10^{2}	10^{6}
207	Au-198	10	10^{2}	10^{6}
208	Au-199	10^{2}	10^{2}	10^{6}
209	Hg-197	10^{2}	10^{2}	10^{7}
210	Hg-197 m	10^{2}	10^{2}	10^{6}
211	Hg-203	10	10^{2}	10^{5}
212	Tl-200	10	10^{1}	10^{6}
213	Tl-201	10^{2}	10^{2}	10^{6}
214	Tl-202	10	10^{2}	10^{6}
215	Tl-204	1	10^{4}	10^{4}
216	Pb-203	10	10^{2}	10^{6}
217	Pb-210	Values of column C and D shall apply	10^{1}	10^{4}
218	Pb-212[(b)]	Values of column C and D shall apply	10^{1}	10^{5}
219	Bi-206	1	10^{1}	10^{5}
220	Bi-207	10^{-1}	10^{1}	10^{6}
221	Bi-210	Values of column C and D shall apply	10^{3}	10^{6}

222	Bi-212 [b]	Values of column C and D shall apply	10^{1}	10^{5}
223	Po-203	10	10^{1}	10^{6}
224	Po-205	10	10^{1}	10^{6}
225	Po-207	10	10^{1}	10^{6}
226	Po-210	Values of column C and D shall apply	10^{1}	10^{4}
227	At-211	10^{3}	10^{3}	10^{7}
228	Rn-220 [b]	Values of column C and D shall apply	10^{4}	10^{7}
229	Rn-222 [b]	Values of column C and D shall apply	10^{1}	10^{8}
230	Ra-223 [b]	Values of column C and D shall apply	10^{2}	10^{5}
231	Ra-224 [b]	Values of column C and D shall apply	10^{1}	10^{5}
232	Ra-225	10	10^{2}	10^{5}
233	Ra-226 [b]	Values of column C and D shall apply	10^{1}	10^{4}
234	Ra-227	10^{2}	10^{2}	10^{6}
235	Ra-228 [b]	Values of column C and D shall apply	10^{1}	10^{5}
236	Ac-228	Values of column C and D shall apply	10^{1}	10^{6}
237	Th-226[b]	10^{3}	10^{3}	10^{7}
238	Th-227	Values of column C and D shall apply	10^{1}	10^{4}
239	Th-228[b]	Values of column C and D shall apply	10^{0}	10^{4}
240	Th-229 [b]	10^{-1}	10^{0}	10^{3}
241	Th-230	Values of column C and D shall apply	10^{0}	10^{4}
242	Th-231	Values of column C and D shall apply	10^{3}	10^{7}
243	Th-234 [b]	Values of column C and D shall apply	10^{3}	10^{5}
244	Pa-230	10	10^{1}	10^{6}
245	Pa-231	Values of column C and D shall apply	10^{0}	10^{3}
246	Pa-233	10	10^{2}	10^{7}

247	U-230	10	10^{1}	10^{5}
248	U-231 [(b)]	10^{2}	10^{2}	10^{7}
249	U-232 [(b)]	10^{-1}	10^{0}	10^{3}
250	U-233	1	10^{1}	10^{4}
251	U-234	Values of column C and D shall apply	10^{1}	10^{4}
252	U-235 [(b)]	Values of column C and D shall apply	10^{1}	10^{4}
253	U-236	10	10^{1}	10^{4}
254	U-237	10^{2}	10^{2}	10^{6}
255	U-238 [(b)]	Values of column C and D shall apply	10^{1}	10^{4}
256	U-239	10^{2}	10^{2}	10^{6}
257	U-240	Values of column C and D shall apply	10^{3}	10^{7}
258	U-240 [(b)]	10^{2}	10^{1}	10^{6}
259	Np-237 [(b)]	1	10^{0}	10^{3}
260	Np-239	10^{2}	10^{2}	10^{7}
261	Np-240	10	10^{1}	10^{6}
262	Pu-234	10^{2}	10^{2}	10^{7}
263	Pu-235	10^{2}	10^{2}	10^{7}
264	Pu-236	1	10^{1}	10^{4}
265	Pu-237	10^{2}	10^{3}	10^{7}
266	Pu-238	10^{-1}	10^{0}	10^{4}
267	Pu-239	10^{-1}	10^{0}	10^{4}
268	Pu-240	10^{-1}	10^{0}	10^{3}
269	Pu-241	10	10^{2}	10^{5}
270	Pu-242	10^{-1}	10^{0}	10^{4}
271	Pu-243	10^{3}	10^{3}	10^{7}
272	Pu-244 [(b)]	10^{-1}	10^{0}	10^{4}
273	Am-241	10^{-1}	10^{0}	10^{4}
274	Am-242	10^{3}	10^{3}	10^{6}
275	Am-242 m [(b)]	10^{-1}	10^{0}	10^{4}
276	Am-243 [(b)]	10^{-1}	10^{0}	10^{3}
277	Cm-242	10	10^{2}	10^{5}
278	Cm-243	1	10^{0}	10^{4}

279	Cm-244	1	10^{1}	10^{4}
280	Cm-245	10^{-1}	10^{0}	10^{3}
281	Cm-246	10^{-1}	10^{0}	10^{3}
282	Cm-247 (b)	10^{-1}	10^{0}	10^{4}
283	Cm-248	10^{-1}	10^{0}	10^{3}
284	Bk-249	10^{2}	10^{3}	10^{6}
285	Cf-246	10^{3}	10^{3}	10^{6}
286	Cf-248	1	10^{1}	10^{4}
287	Cf-249	10^{-1}	10^{0}	10^{3}
288	Cf-250	1	10^{1}	10^{4}
289	Cf-251	10^{-1}	10^{0}	10^{3}
290	Cf-252	1	10^{1}	10^{4}
291	Cf-253	10^{2}	10^{2}	10^{5}
292	Cf-254	1	10^{0}	10^{3}
293	Es-253	10^{2}	10^{2}	10^{5}
294	Es-254 (b)	10^{-1}	10^{1}	10^{4}
295	Es-254 m (b)	10	10^{2}	10^{6}
296	Fm-254	10^{4}	10^{4}	10^{7}
297	Fm-255	10^{2}	10^{3}	10^{6}
298	Natural radionuclides from U-238 series	1		
299	Natural radionuclides from Th-232 series	1		

1.2. Comments to table in Section 1.1:

1.2.1. (a) = Potassium salts in amounts less than 1000 kg are exempt.

1.2.2. (b) = Table in Section 2 contains the mother nuclides and their decay products, in case of which only the exemption level for the mother nuclide shall be considered.

2. Decay products, in case of which only the exemption level for the mother nuclide shall be considered:

	A	B
1	**Mother nuclide**	**Decay product**
2	Fe-52	Mn-52 m
3	Zn-69 m	Zn-69
4	Sr-90	Y-90
5	Sr-91	Y-91 m
6	Zr-95	Nb-95

7	Zr-97	Nb-97 m, Nb-97
8	Nb-97	Nb-97 m
9	Mo-99	Tc-99 m
10	Mo-101	Tc-101
11	Ru-103	Rh-103 m
12	Ru-105	Rh-105 m
13	Ru-106	Rh-106
14	Pd-103	Rh-103 m
15	Pd-109	Ag-109 m
16	Ag-110 m	Ag-110
17	Cd-109	Ag-109 m
18	Cd-115	In-115 m
19	Cd-115 m	In-115 m
20	In-114 m	In-114
21	Sn-113	In-113 m
22	Sb-125	Te-125 m
23	Te-127 m	Te-127
24	Te-129 m	Te-129
25	Te-131 m	Te-131
26	Te-132	I-132
27	Cs-137	Ba-137 m
28	Ce-144	Pr-144, Pr-144 m
29	U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po212,
30	U-240	Np-240 m, Np-240
31	Np-237	Pa-233
32	Pu-244	U-240, Np-240 m, Np-240
33	Am-242 m	Np-238
34	Am-243	Np-239
35	Cm-247	Pu-243
36	Es-254	Bk-250
37	Es-254 m	Fm-254
38	Zr-93	Nb-93 m
39	Ag-108 m	Ag-108
40	Ba-140	La-140

41	Pb-210	Bi-210, Po.210
42	Pb-212	Bi-212, Tl-208, Po-212
43	Bi-212	Tl-208 (0.36), Po-212 (0.64)
44	Rn-220	Po-216
45	Rn-222	Po-218, Pb-214, Bi-214, Po-214
46	Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
47	Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po-212 (0,64)
48	Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po210
49	Ra-228	Ac-228
50	Th-226	Ra-222, Rn-218, Po-214
51	Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0,36), Po212 (0,64)
52	Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
53	Th-234	Pa-234 m
54	U-230	Th-226, Ra-222, Rn-218, Po-214
55	U-235	Th-231
56	U-238	Th-234, Pa-234 m

2.1. In case of radionuclides in the table, the HAEA is to determine the exemption activities and activity-concentrations if a demand occur.

Annex 2 to Govt. Decree 487/2015. (XII. 30.) Korm.

Formulas to the interpretative provisions

1. Activity formula

1.1. Activity is the quotient of dN and dt, where dN is the expected value of the number of nuclear transformations from the given energy state in the time interval dt:

$$A = \frac{\mathrm{d}N}{\mathrm{d}t}$$

1.2. Measuring unit of activity is the Becquerel (Bq).

2. Effective dose formula

2.1. The effective dose is determined as follows:

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

2.2. In the formula of effective dose calculation $D_{T,R}$ is the absorbed dose originating from radiation type R and averaged over the tissue or organ T, w_R is the radiation weighting factor and w_T is the tissue or organ weighting factor.

2.3. Values of weighting factors w_T and w_R are in Annex 3. Measuring unit of effective dose is the Sievert (Sv);

3. Equivalent dose formula

3.1. Calculation of equivalent dose is as follows: $H_{T,R} = w_R D_{T,R}$.

3.2. In the calculation formula of equivalent dose $D_{T,R}$ is the absorbed dose originating from radiation type R and averaged over the tissue or organ T, w_R is the radiation weighting factor.

3.3. When radiations of various type and energy that is of various weighting factors, constitute the radiation space, then the sum of the following formula provides the total equivalent dose (H_T):

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

3.4. Values of w_R are included in Annex 3.

3.5. Measuring unit of equivalent dose is the Sievert (Sv).

4. Absorbed dose formula

4.1. Calculation of absorbed dose is as follows: $D = \frac{d\varepsilon}{dm}$

4.2. In the calculation formula of absorbed dose $d\varepsilon$ is the mean energy absorbed in a volume element passed by the ionizing radiation, dm is the mass of the volume element.

4.3. Absorbed dose means a dose value averaged over a given tissue or organ.

4.4. Measuring unit of absorbed dose is the gray (Gy).

5. Formula for committed effective dose

5.1. Calculation of committed effective dose is as follows: $E(\tau) = \sum_T w_T H_T(\tau)$

5.2. In the calculation formula of committed effective dose in the amount of $E(\tau)$ the τ means the number of years over which integration is carried out.

5.3. Measuring unit of committed effective dose is the Sievert (Sv).

6. Formula for committed equivalent dose

6.1. Calculation of committed equivalent dose is as follows: $H_T(\tau) = \int_{t_0}^{t_0+\tau} \dot{H}_T(t)\,\mathrm{d}t$

6.2. In the calculation formula of committed equivalent dose t_0: time of intake, $\dot{H}_T(t)$ is the equivalent dose rate at time moment t in tissue or organ T, τ is the duration, over which integration is carried out.

6.3. Measuring unit of committed equivalent dose is the Sievert (Sv).

Annex 3 for Govt. Decree 487/2015. (XII. 30.) Korm.

Radiation and body tissue weighting factors

1. Radiation weighting factors

	A	B
1.	**Type of radiation**	**w_R**

2.	Photons	1
3.	Electrons and muons	1
4.	Protons and charged pions	2
5.	Alpha particles, fission products, heavy ions	20
6.	Neutrons, $E_n \leq 1$ MeV	$2.5 + 18.2\ e^{-[ln(E_n)]^2/6}$
7.	Neutrons, 1 MeV < En ≤ 50 MeV	$5.0 + 17.0\ e^{-[ln(2E_n)]^2/6}$
8.	Neutrons, $E_n > 50$ MeV	$2.5 + 3.25\ e^{-[ln(0.04E_n)]^2/6}$

1.1. In the table: E_n: neutron-energy in MeV.

1.2. The values relate to radiation affecting the body or in the case of internal radiation sources, to radiation emitted by radionuclides get in the body .

2. Body tissue weighting factors

	A	B
1.	**Body tissue**	**w_T**
2.	Bone marrow	0.12
3.	Large intestine	0.12
4.	Lung	0.12
5.	Stomach	0.12
6.	Breast	0.12
7.	Other tissues (a)	0.12
8.	Genital glands	0.08
9.	Bladder	0.04
10.	Oesophagus	0.04
11.	Liver	0.04
12.	Thyroid	0.04

13.	Bone surface	0.01
14.	Brain	0.01
15.	Saliva glands	0.01
16.	Skin	0.01

2.1. The value of w_T (0.12) provided for other tissues in row 7 of the table in Section 2 relates to the arithmetic mean of dose affecting the following 13 organs or tissues for the two sexes. Other tissues: adrenal glands, upper respiratory tract, gall-bladder, heart, kidneys, lymphatic gland, muscle, mouth mucous membrane, pancreas, prostate (males), small intestine, spleen, thymus gland, uterus/cervixes (women).

Annex 4 to Govt. Decree 487/2015. (XII. 30.) Korm.

Themes of radiation protection trainings and refreshing training

1. Themes of radiation protection trainings

1.1. Basic level training

1.1.1. Radiation physics basics (min. 2 hours)
1.1.2. Basics of radiation protection and radiation biology (min. 2 hours)
1.1.3. Nuclear security (min. 2 hours)
1.1.4. Radiation protection in the selected area (min. 2 hours)
1.1.5. Consultation (min. 1 hour)

1.2. Extended level training

1.2.1. Radiation physics and dosimetry (min. 3 hours)
1.2.2. Radiation biology (min. 2 hours)
1.2.3. General radiation protection, dose limits (min. 5 hours)
1.2.4. Nuclear security (min. 2 hours)
1.2.5. Radiation protection in the selected area (min. 4 hours)
1.2.6. Practical measurement techniques (min. 2 hours)
1.2.7. Consultation (min. 2 hours)

1.3. Comprehensive level training

1.3.1. Radiation physics and dosimetry (min. 6 hours)
1.3.2. Radiation biology (min. 6 hours)
1.3.3. Radiation protection, dose limits, system of authority control, radiation accidents, treatment of radiation injuries (min. 18 hours)
1.3.4. Nuclear security (min. 2 hours)
1.3.5. Radiation protection in the selected area (min. 4 hours)
1.3.6. Nuclear emergency preparedness (min. 2 hours)
1.3.7. Practical measurement techniques (min. 4 hours)
1.3.8. Consultation (min. 4 hours)

2. Themes of radiation protection trainings

2.1. Basic level refreshing training

2.1.1. Basics of radiation physics (min. 1 hour)
2.1.2. Basic level radiation protection (min. 1 hour)
2.1.3. Nuclear security (min. 1 hour)
2.1.4. Radiation protection in the selected area (min. 2 hours)
2.1.5. Consultation (min. 1 hour)

2.2. Extended level refreshing training

2.2.1. Radiation physics and dosimetry (min. 2 hours)
2.2.2. Radiation biology (min. 2 hours)
2.2.3. General radiation protection, dose limits, legal background, emergency preparedness (min. 3 hours)

2.2.4. Nuclear security (min. 1 hour)
2.2.5. Radiation protection in the specific area (medical, industrial, research, nuclear, veterinary) (min. 4 hours)
2.2.6. Practical training (min. 2 hours)
2.2.7. Consultation (min. 1 hour)

2.3. Comprehensive level refreshing training

2.3.1. Radiation physics and dosimetry (min. 2 hours)
2.3.2. Radiation biology (min. 2 hours)
2.3.3. General radiation protection (min. 4 hours)
2.3.4. Actualities in radiation protection (min. 6 hours)
2.3.5. Nuclear security (min. 1 hour)
2.3.6. Radiation protection in the specific area (medical, industrial, research, nuclear, veterinary) (min. 4 hours)
2.3.7. Radiation safety, radiation accidents, emergency preparedness (min. 2 hours)
2.3.8. Practical training (min. 2 hours)
2.3.9. Consultation (min. 1 hour)

Radiation protection classification of equipment that does not contain radioactive material but emits ionizing radiation

	A	B	C	D
1.	**Workplace**	**Category I**	**Category II**	**Category III**
2.	Medical and veterinary diagnostic workplaces			Intraoral X-ray equipment
3.			X-ray diagnostics (Panorama, cephalometry, absorption, transmission, angiographic X-ray equipment, topographic imaging)	Bone densitometers
4.			Hybrid imaging	
5.	Industrial workplaces using X-ray transmission		Gross structural industrial X-ray	X-ray industrial tester, regulator equipment
6.	Safety techniques applications		Equipment transilluminating public road and railway bulk	Drug and explosive detection equipment
7.				Fix and mobile luggage checker equipment
8.	Industrial radiography workplaces	On scene X-ray radiography	Laboratory X-ray radiography	
9.	Material and fine structure testing workplaces			X-ray and fine structure material tester
10	Workplaces using accelerator equipment	Medical therapy, industrial, agricultural technology, research, education		
11.	Medical and veterinary therapy workplaces	X-ray therapy		

Annex 6 to Govt. Decree 487/2015. (XII. 30.) Korm

List of building materials, the radiation protection checking of which is especially justified due to gamma radiation emitted by them, determination and using of activity concentration-index related to gamma radiation emitted by building materials

1. Building materials made of natural substances

1.1. clay shale containing alunite

1.2. building materials or additives made of magmatic rocks listed below:

1.2.1. granite rocks (especially granites, syenite and orthogneiss)

1.2.2. porphyrys

1.2.3. tufa

1.2.4. trass (volcanic ash)

1.2.5. lava

2. Materials containing industrial residues processing naturally occurring radioactive materials

2.1. dust ash

2.2. phosphoric gypsum

2.3. slag containing phosphoric compounds

2.4. tin slag

2.5. copper slag

2.6. red sludge

2.7. residues of steel production

3. Determination and use of activity concentration index related to gamma radiation emitted by building materials

3.1. Activity concentration index related to building materials shall be calculated as follows:

$$I = C_{Ra226}/300\ Bq/kg + C_{Th232}/200\ Bq/kg + C_{K40}/3000\ Bq/kg,$$

where $C_{Ra226,}$ C_{Th232} and C_{K40} are the activity concentrations of the corresponding radionuclides of building materials.

3.2. The index characterizes gamma radiation doses appearing as addition to typical external radiation exposure in case of such a building, which was made by using of a specific building material. If the value of the index is under 1 the extra exposure because of using the building material can be taken as below the reference level. The index relates to the building material and not to its components, except if the components are also building materials and their evaluation can so be done separately. If the index is intended to be applied on components, and especially on building materials made by reprocessing residues of industries using radioactive materials of natural origin, an appropriate distribution factor shall be used.

3.3. The value of the activity concentration index can be taken as 1 to conservatively screen out such materials, because of which the reference level in Subsection 46 (1) may be exceeded.

3.4. Other factors should also be considered for a more accurate dose calculation, especially the specific weight of the material, the given geometry, and the factors corresponding to the building type and the function of the material (e.g. used in bulk form or as surface material).

Annex 7 to Govt. Decree 487/2015. (XII. 30.) Korm

Radiation Protection Description

1. General requirements

1.1. The radiation protection description shall contain

1.1.1. determination of responsibilities within the organization of the licensee,

1.1.2. process description of radiation dangerous activity(ies),

1.1.3. aspects of optimization applied in developing radiation protection,

1.1.4. plan of radiation dangerous workplaces by indicating the orientation of radioactive materials and equipment emitting ionizing radiation and the maximum occurring dose rates at the relevant locations; plan of delimitation of the location in the case of mobile equipment,

1.1.5. demonstration of compliance with the relevant design standards,

1.1.6. radiation protection quality assurance programme,

1.1.7. protection plan of surrounding population, estimated maximum public dose exposure value,

1.1.8. system of requirements for determination of controlled and monitored areas and planned determination of controlled and monitored areas,

1.1.9. type of used equipment and identifiers of type licences,

1.1.10. determination of scope of regulatory reportable events,

1.1.11. determination of review frequency of the radiation protection description.

1.2. In addition to what is listed in Section 1.1 the Radiation Protection Description for important, radiation protection category I and II activities shall contain

1.2.1. plan of planned radioactive material discharges, including estimation of public radiation exposure due to the discharges,

1.2.2. determination of those activity types, for the performance of which the licensee shall determine separate dose constraints for the employees,

1.2.3. where open radiation sources are used, the Radiation Protection Description shall contain the analysis if the danger of radioactive contamination important from radiation protection aspect exists in the laboratory.

2. Specific requirements

2.1. In the case of nuclear facilities the Radiation Protection Description shall contain

2.1.1. the value of public dose constraint,

2.1.2. demographic, meteorological, geological, hydrological and ecological conditions taken into account during radiation protection examination of the site of the planned facility,

2.1.3. environmental radioactive release plans taking into account Ministerial Decree 15/2001. (VI. 6.) KöM of the Minister for Environment on radioactive discharges to the atmosphere and into waters during the use of atomic energy and on monitoring of the discharge,

2.1.4. measures limiting public access to the facility.

2.2. In case of medical radiological workplaces the Radiation Protection Description contains

2.2.1. dimensions of the room,

2.2.2. regarding rooms containing X-ray equipment the compliance with general prescriptions for X-ray rooms, and description of necessary auxiliary rooms,

2.2.3. method of compliance with radiation protection requirements for diagnostic and therapy workplaces,

2.2.4. description and frequency of planned radiation protection checks and measurements.

Annex 8 to Govt. Decree 487/2015. (XII. 30.) Korm.

Workplace Radiation Protection Rules

1. General Requirements

1.1. The WPRPR shall contain

1.1.1. the name and contacts of the radiation protection officer and his/her deputy, their work assignment, professional qualifications and radiation protection qualifications,

1.1.2. tasks of the radiation protection officer, in the case of important facilities the description and tasks of the radiation protection service,

1.1.3. radiation protection tasks of the licensee,

1.1.4. list of the roles and responsibilities,

1.1.5. tasks required in the radiation protection quality assurance programme, including the checks and measurements to be performed on the equipment, mode and frequency of implementation,

1.1.6. requirements on monitoring of external and internal radiation exposure of the employees, the related frequencies and methods,

1.1.7. description of calculation methods used for the estimation if personal exposures are estimated based on personal dosimetry performed on other employees,

1.1.8. number of employees working at radiation dangerous workplace, their required professional and radiation protection qualifications,

1.1.9. radiation protection related rights and obligations of employees working at radiation dangerous workplace,

1.1.10. description of radiation dangerous work areas and duties, radiation protection classification of employees („A" or „B" class), professional and radiation protection qualifications required to fulfil the given duties considering Annex 3,

1.1.11. delimitation measures of controlled and monitored areas,

1.1.12. method of monitoring surface contamination and management of radioactive wastes, order of their accounting,

1.1.13. description of safety systems, personal protective equipment, radiation protection instruments, personal dosimeters, and the requirements for management, wear, maintenance and calibration thereof,

1.1.14. order of account keeping and retention of certificates, order of meeting notification obligations to authorities,

1.1.15. all the information that shall be known for safe work performance,

1.1.16. name and address of occupational health service entrusted by the licensee, oreder of radiohygiene examinations,

1.1.17. determination of frequency of WPRPR revision,

1.1.18. plan of management of abnormal events,

1.1.19. scope of reportable events and event investigations,

1.2. In the case of nuclear facilities and radioactive waste repositories the facility level WPRPR (instead of what listed in Section 1.1) shall contain

1.2.1. structure and tasks of the radiation protection organization, tasks of the radiation protection officer(s),

1.2.2. radiation protection related tasks of the licensee,

1.2.3. radiation protection related tasks of the managers of the facility,

1.2.4. list of roles and responsibilities,

1.2.5. requirements on monitoring of external and internal radiation exposure of the employees, the related frequencies and methods,

1.2.6. radiation protection related rights and obligations of employees working at radiation dangerous workplace,

1.2.7. determination of controlled and monitored areas and the related system of requirements;

1.2.8. sources of radiation exposure,

1.2.9. radiation protection classification of employees („A" or „B" class),

1.2.10. tasks required in the radiation protection quality assurance programme, including the checks and measu0rements to be performed on the equipment, mode and frequency of implementation,

1.2.11. order of account keeping and retention of certificates, order of meeting notification obligations to authorities,

1.2.12. all the information that shall be known for safe local work performance,

1.2.13. name and address of the institution entrusted by the licensee to perform the occupational health examinations, order of radiohygiene examinations,

1.2.14. determination of frequency of WPRPR revision,

1.2.15. plan of management of abnormal events,

1.2.16. order of performing the notification obligations to authorities,

1.2.17. the WPRPR shall contain or shall make reference to the approved separate documents as follows

1.2.17.1. process description of radiation dangerous activity(ies),

1.2.17.2. order of radiation protection training(s),

1.2.17.3. method of management of radioactive wastes, order of their accounting,

1.2.17.4. emergency preparedness and response plan (hereinafter referred to as: EPRP), which contains the order of response to and management of abnormal events, including on-site medical treatment of confirmed or suspected radiation injuries, determination of potential measures and obligations, frequency of exercises with those involved in its implementation and the revision frequency of the EPRP,

1.2.17.5. plan of emergency communications,

1.2.17.6. order of monitoring of surface contamination,

1.2.17.7. description of safety systems, personal protective equipment, radiation protection instruments, personal dosimeters, and the requirements for management, wear, maintenance and calibration thereof,

1.2.18. In the case of a facility consisting of several organization units the rules of radiation protection of the particular workplaces shall be attached to the facility level WPRPR as annexes.

2. Specific requirements

2.1. In addition to what required in Section 1.1. in the case of important facilities (except nuclear facilities and radioactive waste repositories) and radiation protection category I and II activities the WPRPR shall contain

2.1.1. the EPRP, which contains the order of response to and management of abnormal events, including on-site medical treatment of confirmed or suspected radiation injuries, determination of potential measures and obligations, frequency of exercises with those involved in its implementation and the revision frequency of the EPRP,

2.1.2. plan of emergency communications.

2.2. In the case of use of category 1, 2 and 3 sealed radioactive sources the WPRPR shall contain

2.2.1. the order of leakage tests of sealed radioactive sources,

2.2.2. the order of storage and management of radioactive sources,

2.2.3. plant requirements on radiation sources, radiation source holder and auxiliary equipment,

2.2.4. requirements on appropriate management of unused radioactive sources including, in particular, on handing over of unused radiation sources to the manufacturer, a transporter, another authorized user or to a radioactive waste repository,

2.2.5. action plan on search for potential location and regain control of missing radioactive material or nuclear material.

2.3. In the case of medical radiological workplaces the WPRPR shall contain

2.3.1. detailed description of applied medical radiological techniques and auxiliary equipment,

2.3.2. description of radiation protection control and monitoring programme.

Annex 9 to Govt. Decree 487/2015. (XII. 30.) Korm.

Professional knowledge, education conditions and professional practice required to perform radiation protection activity

	A	B	C
1	**Professional knowledge**	**Education conditions**	**Professional practice**
2	Dose quantities, dosimetry, effect of ionizing radiation to organism, radiation safety norms, radiation protection technical aspects, calculation of biological protection, nuclear measurement techniques, methods of measurement of radiation, types of detectors, spectrometry, radiography, management and storage of radioactive wastes.	1. BSc or MSc level - mechanical engineer, - electric engineer, - energetic engineer, - environmental engineer, - chemical engineer, - biological engineer, - medical engineer, - physicist, - engineering-physicist, - chemist, - information technologist, - physician, - physics teacher, - chemistry teacher, or 2. professional area engineer 2. specialized engineer, or 3. high level education equivalent to what listed in Section 1 and 2 and comprehensive radiation protection qualification	Research, measurement, analysis, planning, emergency preparedness, regulatory, radiation health activity in the area of radiation protection.

[1] Sections 71-73 have lost effect based on Subsection 12 (2) of Act CXXX of 2010