REGULATION OF THE COUNCIL OF MINISTERS

of 17 December 2002

on detailed safety requirements for work involving ionising radiation sources

(Journal of Laws no. 239, item 2029)

Pursuant to the provisions of art. 45 of the Atomic Energy Law of 29 November 2000 (Journal of Laws of 2001, no. 3, item 18, no. 100, item 1085, no. 154, item 1800, of 2002, no. 74, item 676 and no. 135, item 1145), the following is ordained:

Chapter 1

General Provisions

§ 1. This regulation shall set out:

1) technical requirements and radiation protection requirements for laboratories applying radioactive sources or devices containing such sources, and requirements for devices generating ionising radiation and for laboratories applying such devices;

2) regulations for work involving radioactive sources, devices containing such sources and devices generating ionising radiation, applied outside of laboratories referred to in point 1 above;

3) method of controlling ionising radiation sources s and radioactive sources registration;

4) sample of registration card for radioactive sources registration.

§ 2. This regulation shall not apply to X-ray units with radiation energy of up to 300 keV applied for medical purposes and laboratories applying the said machines.

§ 3. The following terms shall be assigned the following meanings under this regulation:

1) 1) "accelerator" – shall mean a device generating ionising radiation by charged particle acceleration, in particular: linear accelerator, betatron, cyclotron, neutron generator;
2) 2) "X-ray unit" – shall mean a machine or set of devices for the generation and application of X-ray radiation where the source of ionising radiation is an X-ray tube;
3) 3) "isotope groups" – shall mean radioactive isotopes divided into groups subject to the effective committed dose during unitary isotope absorption in the body;
4) 4) "open radioactive source" – shall mean radioactive source which does not constitute a sealed radioactive source;
5) 5) "irradiation compartment" – shall mean a compartment where a radiation beam is released from an installed accelerator, X-ray unit or device containing a sealed radioactive source for the purpose of irradiation, and a compartment where a radioactive source is released from a device containing a sealed radioactive source for the purpose of irradiation;
6) 6) "therapeutic compartment" – shall mean a compartment for irradiation where the released radiation beam or released radioactive source are applied for ionising radiation therapy;
7) 7) "laboratory" – shall mean an X-ray laboratory, accelerator laboratory and isotope laboratory;
8) 8) "accelerator laboratory" – shall mean a complex of compartments with an installed accelerator, including at least one irradiation compartment;
9) 9) "isotope laboratory" – shall mean a compartment or a complex of compartments for work with open or sealed radioactive sources and devices containing sealed radioactive sources;

10) 10) "X-ray laboratory" – shall mean a compartment for the operation of an X-ray unit or a complex of compartments comprising at least one compartment for the operation of an X-ray unit or an irradiation compartment;

11) 11) "control room" – shall mean a compartment from which the operation of an accelerator, X-ray unit or device containing a sealed radioactive source is remotely controlled;

12) 12) "sanitary and dosimetry lock" – shall mean an isolated area on the premises of an isotope laboratory with open radioactive sources, equipped with stationary dosimetry devices and sanitary facilities (wash-stand and, if required by the type of conducted works, a shower), adapted for the removal of external radioactive contamination from the surface of the body, individual means of radiation protection, and for changing protective clothing and shoes;

13) 13) "source certificate" – shall mean radioactive source documentation prepared by the producer of the source;

14) 14) "certificate of source radioactive material" - shall mean documentation of source radioactive material prepared by the producer of the material;

15) 15) "type of sealed radioactive source" – shall mean the set of structural characteristics and physical properties of point, surface and linear radioactive source, including the type of applied ionising radiation;

16) 16) "source radioactive material" – shall mean target material obtained from a nuclear reactor or another material applied for the manufacture of radioactive sources;

17) 17) "sealed radioactive source" - shall mean a radioactive source whose structure prevents the radioactive substance from leaking to the environment under conditions set for its application;

18) 18) "license" – shall mean the license for conducting operations which involve exposure to ionising radiation.

§ 4. Work safety requirements involving ionising radiation sources shall involve the principle of limiting exposure by shortening the time of exposure, increasing the distance from the source of ionising radiation, restricting radiation area and eliminating radioactive contamination, in particular by:

1) applying equipment and devices in accordance with their purposes and manufacturer guidelines;

2) applying individual means of radiation protection;

3) employing personnel adequately trained and qualified for the performance of duties involved in a specific work position;

4) regularly monitoring the parameters of the applied procedures, controlling and providing technical support for the applied devices.

Chapter 2

Technical Requirements and Radiation Protection Requirements for Laboratories Applying Radioactive Sources or Devices Containing such Sources, and Requirements for Devices Generating Ionising Radiation and for Laboratories Applying such Devices

§ 5. 1. Accelerator, isotope and X-ray laboratories applying X-ray units with radiation energy exceeding 300 keV shall be situated in:

1) non-residential buildings, or

2) non-residential part of a building, provided that laboratory premises are not adjacent to residential premises or premises designed for permanent accommodation, subject to provisions of §16.

2. Isotope laboratories shall be sited in premises protected from flooding in buildings classified into fire resistance category D in accordance with the provisions of the construction law, and the sites where radioactive sources and radioactive waste is stored – in premises classified into at least fire category B.

3. The laboratory entrance shall be marked with sign boards according to the samples presented in Annex no. 1 to this Regulation.

4. The degree of attenuation of ionising radiation through external walls and ceilings of the laboratory shall prevent the members of the general public from receiving in the course of 12 subsequent months an effective dose of ionising radiation resulting from laboratory operations involving ionising radiation, not exceeding 0.1 mSv, taking into account the time of exposure, type of operations conducted in the laboratory and the type of applied shields.

5. Subject to the type of conducted operations, the laboratory shall be equipped with:

1) dosimetry equipment appropriate for the applied ionising radiation sources;

2) permanent or mobile ionising radiation shields;

3) containers for the storage of radioactive sources and radioactive waste;

4) individual means of protection against radioactive contamination and irradiation;

5) gravitational ventilation, unless mechanical ventilation is required for the given laboratory type or class, as well as air-conditioning if required by the manufacturer of the installed devices;

6) water supply and sewage disposal system.

6. Radioactive sources and radioactive waste shall be stored in a manner which prevents the leakage of radioactive contamination.

7. The location of radioactive source storage shall be marked with sign boards according to the sample in Annex no. 2.

8. The premises where radioactive sources or radioactive waste are stored shall not be used for the storage of flammable materials, explosives, materials producing caustic and corrosive vapours, or compressed gases.

9. Laboratory documentation shall comprise:

1) license;

2) work regulations;

3) work instructions for handling ionising radiation sources, containing detailed procedures relating to radiation protection for each type of performed operations;

4) company emergency response plan;

5) register of dosimetric measurement results in the work environment;

6) list of employees working in the laboratory, divided into categories A and B;

a. subject to the type of operations conducted in the laboratory, also:

7) specification and operating instructions for accelerators, X-ray units or devices containing radioactive sources;

8) instructions for patients who are administered radioactive substances for the purpose of medical treatment or diagnosis;

9) operating instructions and calibration certificates of dosimetry equipment;

10) register of radioactive sources and radioactive waste;

11) register of individual ionising radiation doses received by employees.

§ 6. In the case of isotope laboratories with sealed radioactive sources and isotope laboratories with devices containing radioactive sources (class Z laboratories):

1) the area of the premises where operations involving radioactive sources are conducted, shall be not less than 10 m^2, and the area of the therapeutic compartment in a class Z laboratory shall be not less than 20 m^2;

2) the size of unoccupied area in premises where operations involving radioactive sources are conducted shall be not less than 5 m^2 per one employee working in the laboratory.

§ 7. 1. The area of an X-ray laboratory where an X-ray radiography unit or another X-ray unit with radiation energy exceeding 300 keV is installed shall be not less than 20 m^2.

2. The area of an X-ray laboratory where an X-ray unit with radiation energy of up to 300 keV is installed shall be not less than 10 m^2, subject to the provisions in §8, unless the license states otherwise .

3. The height of a veterinary X-ray laboratory where an X-ray unit is installed shall be not less than 2.5 m, and if the total time spent by an employee in the laboratory does not exceed four hours per day, it shall be not less than 2.2 m.

4. The area of an irradiation compartment in an accelerator laboratory shall be not less than 20 m^2, unless the license states otherwise.

5. In the case of accelerator and X-ray laboratories, excluding veterinary X-ray laboratories and class Z laboratories with a separate control room:

1) the laboratory entrance shall be equipped with a light signalling device indicating that the unit or accelerator high voltage supply is on, or that a radioactive source is in the operating mode;

2) the geometry of permanent shields settings shall ensure that the angle of incidence of the primary ionising radiation beam is not directed at the door leading to the irradiation compartment;

3) therapeutic compartments shall be equipped with mechanical supply and exhaust ventilation which guarantees minimum 6 exchanges of air per hour, unless the manufacturer of the installed ionising radiation source requires more frequent air exchange;

4) door structure shall ensure that doors can be opened from both inside and outside of the irradiation compartment;

6. In addition to the requirements set out in point 5 above:

1) voice and visual communication systems between the control room and the therapeutic compartment shall be installed in accelerator and X-ray laboratories, except for veterinary X-ray laboratories, and in Z class laboratories with separate control rooms;

2) system disabling the supply of high voltage to an X-ray unit or an accelerator when the door to the irradiation compartment is open shall be installed in accelerator and X-ray laboratories, except for veterinary X-ray laboratories, with separate control rooms;

3) system ensuring that sources are set in the protective mode when doors to the irradiation compartment are opened shall be installed in class Z laboratories with separate control rooms.

§ 8. 1. The area of a veterinary X-ray laboratory where small animals are diagnosed and where an X-ray unit is installed shall ensure that during a standard diagnostic procedure, involving a portable unit or a suspended head with beam directed downwards, the radiation source is positioned at least 1 m from the nearest wall.

2. The area of a veterinary X-ray laboratory where larger animals are diagnosed and where an X-ray unit is installed shall ensure that the radiation source is positioned at least 1.5 m from the nearest wall.

§ 9. In devices which generate ionising radiation – not applied for diagnostic, therapeutic, scientific or technical purposes – emitted by vacuum tubes induced by current not exceeding 5 kV, the radiation dose rate at the distance of 0.05 m from any available surface of the device shall not exceed 5 micrograys per hour (µGy/h).

§ 10. 1. X-ray units and accelerators:

1) shall be operated in accordance with environmental requirements and the terms of power supply defined in the specification and the operating manual;

2) shall be maintained in accordance with the recommendations of the operating manual;

3) shall be regularly inspected in accordance with the quality assurance and calibration control programme.

2. The structure of X-ray machines and accelerators shall guarantee electrical and mechanical safety, including:

1) protection against injury resulting from direct contact with the X-ray machine or accelerator;

2) protection against temperature or electric arc which are a potential source of danger.

§ 11. 1. The structure of an X-ray unit shall:

1) enable the assembly of radiation delimiters as appropriate for the purpose of the X-ray unit;

2) limit radiation dose rate when the radiation beam window is closed and at the highest operating parameters specified by the manufacturer which shall not exceed:

a) a) 25 µGy/h at the distance of 0.5 m from tube focus – in the case of X-ray units applied for X-ray diffraction, microradiograpy and X-ray spectroanalysis,

b) b) 2.5 mGy/h for the voltage of up to 200 kV, or 10 mGy/h for the voltage exceeding 200 kV, at the distance of 1 m from tube focus – in the case of other X-ray unit types;

3) in the case of X-ray units where protective casing shields the X-ray tube and the irradiated object, the dose rate at the distance of 0.1 m from the available shield surface shall not exceed:

a) 7.5 µGy/h (fully shielded X-ray units),

b) 25 µGy/h (X-ray units of high shielding standard).

2. Fully shielded X-ray units and X-ray units of high shielding standard shall be equipped with two independent protective devices which shall prevent unit operation when protective casing is open.

3. Fully shielded X-ray units shall not be equipped with protective devices referred to in point 2 above if the X-ray unit can not be operated with the casing closed, and the dose rate at the accessible point of open casing does not exceed 7.5 µGy/h.

4. X-ray units of high shielding standards shall not be equipped with protective devices referred to in point 2 above if the dose rate in the inner space of the X-ray unit, operating at maximum parameters, does not exceed 0.25 mGy/h at any point, or if the X-ray unit may not be operated with the casing closed, and the dose rate at the accessible point of open casing does not exceed 25 µGy/h.

5. X-ray units applied for veterinary diagnostics shall be equipped with:

1) filters to enable filtration of at least the equivalent of 1.5 mm aluminium (Al);

2) push-button for the remote release of the exposure dose which ensures that the operator is situated at least 2 m from tube focus;

3) acoustic or optical signalling device to indicate the completion of exposure; the emitted signal shall be visible and audible at the place of release activation;

4) current intensity and X-ray tube voltage indicators;

5) light indicator of radiation field to ensure that the mean field lighting intensity is not less than 100 lx in the plane perpendicular to the beam axis at the distance of 1 m from the focal point, if the above distance is less than 1 m under normal operating conditions.

§ 12. 1. The therapeutic accelerator shall:

1) ensure patient safety during treatment;

2) indicate the presence of the radiation beam in the therapeutic compartment and the control room;

3) control the radiation dose and the radiation dose rate with the application of two independent dosimetry lines;

4) register radiation dose indications after the completion of irradiation.

2. The structure of the accelerator shall ensure that irradiation is terminated or interrupted if:

1) in the course of correct ionising radiation therapy, the radiation dose measurement system has indicated that the radiation dose rate set prior to the commencement of radiation has been achieved;

2) the indications of independent dosimetry lines differ by over 5% of respective indications;

3) radiation time has reached the limit defined prior to the commencement of radiation.

§ 13. 1. Subject to the activity of simultaneously applied radioisotopes and their classification into radioisotope groups, isotope laboratories with open radioactive sources shall be classified into class III, II and I as provided for in Annex no. 3.

2. Radioisotope groups referred to in section 1 above are defined in Annex no. 4 .

3. Sealed radioactive sources may be applied in isotope laboratories with open radioactive sources.

§ 14. 1. In addition to the requirements set out in §6, in class III isotope laboratories:

1) work stations shall be equipped with radiochemical exhausts and, if required, glove boxes and other devices which prevent the leakage of radioactive contamination;

2) work surfaces shall be built in a manner which prevents the leakage of radioactive contamination and facilitates its removal;

3) the structure of flooring, walls and systems shall facilitate the removal of radioactive contamination from their surface;

4) compartments shall be equipped with a separate mechanical ventilation system which guarantees at least 3 exchanges of air per hour;

5) subject to the type of operations involving open radioactive sources:

a) the content of radioactive substances in air and sewage discharged from the laboratory shall be measured,

b) solid and liquid radioactive waste shall be gathered and stored in special containers or reservoirs,

c) air discharged from the laboratory shall be treated,

d) in leak-tight work chambers a negative pressure of at least 200 Pa in relation to the environment shall be maintained.

2. In class III isotope laboratories the activities which could contribute to the entering of radioactive substances into the body, , in particular consumption of food and smoking, shall not be permitted.

3. Work organisation standards in class III isotope laboratories shall ensure efficient communication between compartments, excluding the storage of radioactive sources and radioactive waste, without the need to leave the laboratory, if the class III isotope laboratory is equipped with an external storage facility.

§ 15. In addition to the requirements for class III isotope laboratories, class II laboratories shall comprise:

1) area of at least 15 m^2, excluding the sanitary and dosimetry lock and the radioactive source and radioactive waste storage facility;

2) entrance and exit through the sanitary and dosimetry lock;

3) mechanical supply and exhaust ventilation which guarantees:

a) air flow in the direction of compartments with higher risk of radioactive contamination,

b) air movement or pressure distribution which prevents the leakage of radioactive contamination occurring in work stations,

c) discharge of the air at the height of at least1 m above the roof ridge of the building of class II isotope laboratory and that of the adjacent building;

4) permanent and visible identification of the means of individual protection, protective clothing and shoes;

5) separate storage facility for radioactive sources and radioactive waste, equipped with mechanical supply and exhaust ventilation which guarantees at least 6 exchanges of air per hour during the time of occupancy, where the ventilation system is activated at least 10 minutes prior to the employees' entry into the storage facility.

§ 16. In addition to the requirements for class II isotope laboratories, class I isotope laboratories shall be situated in a non-residential building, and radioactive sources and radioactive waste shall be stored separately and in separate storage facilities equipped with mechanical supply and exhaust ventilation which guarantees at least 6 exchanges of air during an hour, where the ventilation system is activated at least 10 minutes prior to the employees' entry into the storage facility.

§ 17. Laboratories which apply ionising radiation sources for medical purposes shall also meet respective general requirements laid down in the regulations for health care facilities and devices.

Chapter 3

Regulations For Work with Radioactive sources, Devices Containing Such Sources and Devices Generating Ionising Radiation, Applied outside of Laboratories Which Apply Radioactive sources, Devices Containing Such Sources Or Devices Generating Ionising Radiation

§ 18. 1. Radioactive sources, devices containing such sources and devices generating ionising radiation may be applied outside of the laboratory if:

1) ionising radiation sources are installed on the premises of an organisation in a manner which prevents uncontrolled exposure of people and environment, or

2) field works are required, and the application of permanent ionising radiation shields and the environmental isolation of locations where ionising radiation source are applied is not required in the light of radiation protection standards.

2. In the conditions referred to in section 1 point 2 above:

1) in the case of works requiring the application of open radioactive sources, the consent of the owner or administrator of the site where the said works are planned shall be acquired and the respective sanitary inspector shall be notified;

2) if the authorised dose limit set forth in the license may be exceeded, persons involved in the operations shall be equipped with individual acoustic signalling devices indicating the level of ionising radiation;

3) all operations involving the application of open radioactive sources shall be conducted under the supervision of the radiological protection inspector;

4) in the event of the need to store radioactive sources and radioactive waste outside the laboratory - the sources and waste shall be stored in supervised premises in a location protected against fire, flooding and unauthorised access in accordance with the requirements laid down in §5 sections 6-8 hereof;

Chapter 4

Method of Controlling Ionising Radiation Sources and Radioactive Sources Registration

§ 19. 1. The control of radioactive sources shall involve the verification of the following at least once per calendar year:

1) conformity of the radioactive sources inventory with source registration documents;

2) air-tightness-of sealed radioactive sources.

2. The results of air-tightness tests of sealed radioactive sources shall be registered in the inspection report which shall comprise:

1) date of inspection;

2) type and number of sealed radioactive source or device containing such source;

3) type of radioisotope, its activity and date of activity determination;

4) type and number of measuring device;

5) measurement results;

6) inspection results;

7) name and address of the institution and the full name of the person performing the inspection.

3. Inspections referred to in section 1 above shall be performed continuously in organisations which manufacture, process and install radioactive sources or devices containing such sources and trade in such sources and devices.

§ 20. 1. Inspection of devices containing radioactive sources or generating ionising radiation prior to their commissioning shall involve the verification of device parameters for compliance with technical documentation, in particular the determination of the ionising radiation dose rate at the distance of 0.1 m and 1 m from device casing in a direction other than the direction of the radiation beam released from the device.

2. The results of inspection referred to in section 1 above shall be indicated in the release and acceptance report of the device.

3. The manager of an organisation performing the inspection shall forward a copy of the release and acceptance report referred to in section 2 above to the licensing authority.

§ 21. 1. In organisations which manufacture and process radioactive sources, the registration procedure shall cover source radioactive materials and manufactured radioactive sources using registration card shown in the sample presented in Annex no. 5.

2. In organisations which trade in radioactive sources, manufacture devices containing radioactive sources or trade in such devices, the registration procedure shall cover incoming and outgoing radioactive sources using registration card shown in the sample presented in Annex no. 6.

3. In organisations which apply or store radioactive sources or devices containing such sources, the registration procedure shall cover respectively applied or stored radioactive sources using registration card shown in the samples presented in Annexes no. 7-10.

4. In organisations which transport radioactive sources or devices containing such sources, excluding internal transport on the premises of the organisation, the registration procedure shall involve shipping documents set forth in regulations on the transport of hazardous cargo.

§ 22. 1. The manager of an organisation shall store registration cards referred to in §21 sections 1-3 above for a period of 5 years from the termination of operations involving radioactive sources.

2. The manager of an organisational entity shall store shipping documents referred to in §21 section 4 for a period of 3 years from the completion of the transport of radioactive sources.

3. The manager of an organisational entity referred to in §21 section 3 whose operations are subject to the licensing requirement shall register the held sealed radioactive sources as of 31 December of given year on the registration card shown in the sample presented in Annex no. 11 , and shall forward the said card to the President of the National Atomic Energy Agency by 31 January of the following year.

4. The President of the National Atomic Energy Agency shall store registration cards referred to in section 3 above for a period of 30 years from the date of receipt.

§ 23. This Regulation shall enter into force on 1 January 2003.

President of the Council of Ministers: *L. Miller*

Annexes to the Regulation of the Council of Ministers of 17 December 2002 (item 2029)

Annex no. 1

SAMPLE SIGN BOARDS FOR THE IDENTIFICATION OF LABORATORY ENTRANCES

1. 1. Sample sign board for the identification of class Z isotope laboratory*

CLASS Z LABORATORY

* Dimensions are indicated in millimeters; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – red.

2. 2. Sample sign board for the identification of accelerator laboratory*

ACCELERATOR LABORATORY

* Dimensions as per sample sign board no. 1; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – black.

3. 3. Sample sign board for the identification of X-ray laboratory*

X-RAY LABORATORY

* Dimensions as per sample sign board no. 1; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – black.

4. 4. Sample sign board for the identification of isotope laboratories with open radioactive sources*

a. a. CLASS III LABORATORY

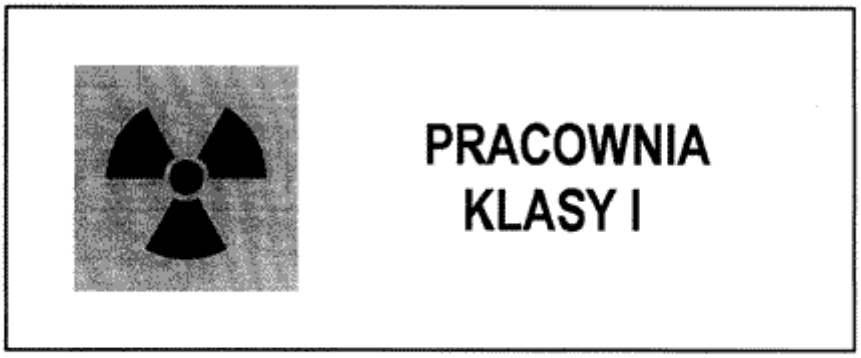
* Dimensions as per sample sign board no. 1; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – red.

b. b. CLASS II LABORATORY

* Dimensions as per sample sign board no. 1; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – red.

c. c. CLASS I LABORATORY

c.



* Wymiary jak we wzorze tablicy informacyjnej 1; kolor tła symbolu promieniowania jonizującego – żółty, kolor symbolu promieniowania jonizującego – czerwony.

* Dimensions as per sample sign board no. 1; background colour of the ionising radiation symbol – yellow, colour of the ionising radiation symbol – red.

Annex no. 2

SAMPLE SIGN BOARD FOR THE IDENTIFICATION OF RADIOACTIVE SOURCE STORAGE FACILITY*

* Dimensions are indicated in millimeters; background colour of the ionising radiation symbol – yellow,
colour of the ionising radiation symbol – red.

Annex no. 3

CLASS OF ISOTOPE LABORATORIES WITH OPEN RADIOACTIVE SOURCES, SUBJECT TO THE ACTIVITY OF RADIOISOTOPES SIMULTANEOUSLY APPLIED IN THE LABORATORY AND THEIR CLASSIFICATION INTO RADIOISOTOPE GROUPS

Radioisotope group	Laboratory class		
	I	II	III
	Activity of radioisotopes applied simultaneously in laboratory		
	MBq	MBq	MBq
1	above 1000	above 1 to 1000	up to 1
2	above 10000	above 10 to 10000	up to 10
3	above 100000	above 100 to 100000	up to 100
4	above 1000000	above 1000 to 1000000	up to 1000

Explanations:

1. In relation to laboratories which apply radioisotopes of various isotope groups, the laboratory class shall be determined based on the comparison of activity calculated in accordance with the below formula:

$$A = A_1 + 0.1\ A_2 + 0.01\ A_3 + 0.001\ A_4$$

where A_1, A_2, A_3, A_4 – simultaneously applied maximum activity of isotopes of 1, 2, 3 or 4 isotope groups respectively

with the activity of group l isotopes set for the respective laboratory class.

2. Subject to the type of operations involving radioactive substances, the activity of radioisotopes simultaneously applied in the laboratory may be increased or decreased as a result of multiplication by the following index:

Operation	Index
Storage	100
Medical diagnostics	100
Very simple wet operations	10
Standard chemical operations	1
Complex wet operations with the risk of spillage and simple dry operations with the risk of dusting	0.1
Complex dry operations with the risk of dusting	0.01

Annex no. 4

RADIOACTIVE ISOTOPE GROUPS

Isotope group	Radioactive isotope									
1	Sm-146	Sm-147	Gd-148	Gd-152	Pb-210	Bi-210m	Po-210	Ra-223	Ra-224	Ra-225
	Ra-226	Ra-228	Ac-225	Ac-226	Ac-227	Th-227	Th-228	Th-229	Th-230	Th-232
	Pa-231	U-230	U-232	U-233	U-234	U-235	U-236	U-238	Np-236	Np-237
	Pu-236	Pu-238	Pu-239	Pu-240	Pu-242	Pu-244	Am-241	Am-242m	Am-243	Cra-240
	Cm-242	Cm-243	Cm-244	Cm-245	Cm-246	Cm-247	Cm-248	Cm-250	Bk-247	Cf-248
	Cf-249	Cf-250	Cf-251	Cf-252	Cf-253	Cf-254	Es-253	Es-254	Fm-257	Md-258
2	Be-10	Al-26	Si-32	Ti-44	Fe-60	Co-60	Ge-68	Sr-82	Sr-90	Zr-93
	Nb-94	Ru-106	Rh-102	Ag-108m	Ag-110m	Cd-113	Cd-113m	In-114m	In-115	Sn-126
	I-126	I-129	I-131	La-137	La-138	Ce-144	Pm-146	Eu-150	Eu-152	Eu-154
	Tb-158	Ho-166m	Lu-176	Lu-177m	Hf-172	Hf-178m	Hf-182	Ta-180	Os-194	Ir-192m
	Hg-194	Pb-202	Pb-212	Bi-210	Bi-212	Bi-213	Bi-214	At-211	Fr-222	Ac-224

	Ac-228	Th-226	Pa-227	Pa-228	Pa-230	Pu-234	Pu-241	Am-242	Cm-241	Bk-249
	Cf-244	Cf-246	Es-254m	Fm-252	Fm-253	Fm-254	Fm-255	Md-257		
3	C-14	Na-22	Na-24	Mg-28	Si-31	P-32	P-33	S-35	Cl-36	K-40
	K-42	K-43	Ca-41	Ca-45	Ca-47	Sc-43	Sc-44	Sc-44m	Sc-46	Sc-47
	Sc-48	Ti-45	V-48	Cr-48	Mn-52	Mn-54	Mn-56	Fe-52	Fe-55	Fe-59
	Co-55	Co-56	Co-57	Co-58	Ni-56	Ni-57	Ni-59	Ni-63	Ni-65	Ni-66
	Cu-61	Cu-64	Cu-67	Zn-62	Zn-65	Zn-69m	Zn-71m	Zn-72	Ga-66	Ga-67
	Ga-72	Ga-73	Ge-66	Ge-69	Ge-77	Ge-78	As-70	As-71	As-72	As-73
	As-74	As-76	As-77	As-78	Se-70	Se-73	Se-75	Se-79	Br-74m	Br-76
	Br-77	Br-80m	Br-82	Rb-82m	Rb-83	Rb-84	Rb-86	Rb-87	Sr-80	Sr-83
	Sr-85	Sr-89	Sr-91	Sr-92	Y-86	Y-87	Y-88	Y-90	Y-90m	Y-91
	Y-92	Y-93	Zr-86	Zr-88	Zr-89	Zr-95	Zr-97	Nb-89	Nb-90	Nb-93m
	Nb-95	Nb-95m	Nb-96	Mo-90	Mo-93	Mo-93m	Mo-99	Tc-94	Tc-99	Tc-95m
	Tc-96	Tc-97	Tc-97m	Tc-98	Tc-99	Ru-97	Ru-103	Ru-105	Rh-99	Rh-100
	Rh-101	Rh-101m	Rh-102m	Rh-105	Rh-106m	Pd-100	Pd-101	Pd-103	Pd-107	Pd-109
	Ag-105	Ag-106m	Ag-111	Ag-112	Cd-107	Cd-109	Cd-115	Cd-115m	Cd-117	Cd-117m
	In-110	In-111	In-117m	Sn-110	Sn-113	Sn-117m	Sn-119m	Sn-121	Sn-121m	Sn-123
	Sn-125	Sn-127	Sn-128	Sb-118m	Sb-120	Sb-122	Sb-124	Sb-125	Sb-126	Sb-127
	Sb-128	Sb-129	Te-116	Te-121	Te-121m	Te-123	Te-123m	Te-125m	Te-127	Te-127m
	Te-129m	Te-131m	Te-132	Te-133m	Te-134	I-120	I-120m	I-123	I-124	I-125
	I-130	I-132	I-132m	I-133	I-135	Cs-132	Cs-134	Cs-135	Cs-136	Cs-137

	Ba-126	Ba-128	Ba-131	Ba-133	Ba-133m	Ba-135m	Ba-140	La-132	La-140	La-141
	La-142	Ce-134	Ce-135	Ce-137m	Ce-139	Ce-141	Ce-143	Pr-138m	Pr-142	Pr-143
	Pr-145	Nd-138	Nd-139m	Nd-147	Nd-149	Pm-143	Pm-144	Pra-145	Pm-147	Pm-148
	Pm-148m	Pm-149	Pm-150	Pm-151	Sm-142	Sm-145	Sm-151	Sm-153	Sm-156	Eu-145
	Eu-146	Eu-147	Eu-148	Eu-149	Eu-152ra	Eu-155	Eu-156	Eu-157	Gd-146	Gd-147
	Gd-149	Gd-151	Gd-153	Gd-159	Tb-147	Tb-149	Tb-150	Tb-151	Tb-153	Tb-154
	Tb-155	Tb-156	Tb-156m	Tb-157	Tb-160	Tb-161	Dy-155	Dy-159	Dy-166	Ho-166
	Ho-167	Er-169	Er-171	Er-172	Tm-166	Tm-167	Tm-170	Tm-171	Tm-172	Tm-173
	Yb-166	Yb-169	Yb-175	Yb-178	Lu-169	Lu-170	Lu-171	Lu-172	Lu-173	Lu-174
	Lu-174m	Lu-176m	Lu-177	Lu-179	Hf-170	Hf-173	Hf-175	Hf-177m	Hf-179m	Hf-180m
	Hf-181	Hf-184	Ta-173	Ta-175	Ta-176	Ta-177	Ta-178	Ta-179	Ta-182	Ta-183
	Ta-184	W-178	W-185	W-187	W-188	Re-181	Re-182	Re-184	Re-184m	Re-186
	Re-186m	Re-188	Re-189	Os-181	Os-182	Os-185	Os-191	Os-191m	Os-193	Ir-184
	Ir-185	Ir-186	Ir-187	Ir-188	Ir-189	Ir-190	lr-190m	Ir-192	lr-193m	Ir-194
	Ir-194m	lr-195	Ir-195m	Pt-188	Pt-191	Pt-193m	Pt-195m	Pt-197	Pt-200	Au-193
	Au-194	Au-195	Au-198	Au-198m	Au-199	Au-200m	Hg-193	Hg-193m	Hg-195m	Hg-197
	Hg-197m	Hg-203	Tl-198	Tl-200	Tl-202	Tl-204	Pb-200	Pb-201	Pb-202m	Pb-203
	Pb-205	Pb-211	Pb-214	Bi-201	Bi-202	Bi-203	Bi-205	Bi-206	Bi-207	Po-207
	At-207	Fr-223	Ra-227	Th-231	Th-234	Pa-232	Pa-233	Pa-234	U-231	U-237

	U-240	Np-234	Np-235	Np-238	Np-239	Np-240	Pu-237	Pu-243	Pu-245	Pu-246
	Am-239	Am-240	Am-244	Am-246	Cm-238	Bk-245	Bk-246	Bk-250	Es-250	Es-251
4	H-3	Be-7	C-11	F-18	Cl-38	Cl-39	K-44	K-45	Sc-49	V-47
	V-49	Cr-49	Cr-51	Mn-51	Mn-52m	Mn-53	Co-58m	Co-60m	Co-ćl	Co-62m
	Cu-60	Zn-63	Zn-69	Ga-65	Ga-68	Ga-70	Ge-67	Ge-71	Ge-75	As-69
	Se-73m	Se-81	Se-81m	Se-83	Br-74	Br-75	Br-80	Br-83	Br-84	Rb-79
	Rb-81	Rb-81m	Rb-88	Rb-89	Sr-81	Sr-85m	Sr-87m	Y-86m	Y-91m	Y-94
	Y-95	Nb-88	Nb-97	Nb-98	Mo-101	Tc-93	Tc-93m	Tc-94m	Tc-96m	Tc-99m
	Tc-101	Te-104	Ru-94	Rh-99m	Rh-103m	Rh-107	Ag-102	Ag-103	Ag-104	Ag-104m
	Ag-106	Ag-115	Cd-104	In-109	In-112	In-113m	In-115m	In-116m	In-117	In-119m
	Sn-111	Sn-123m	Sb-115	Sb-116	Sb-116m	Sb-117	Sb-119	Sb-124m	Sb-126m	Sb-130
	Sb-131	Te-129	Te-131	Te-133	l-121	l-128	l-134	Cs-125	Cs-127	Cs-129
	Cs-130	Cs-131	Cs-134m	Cs-135m	Cs-138	Ba-131m	Ba-139	Ba-141	Ba-142	La-131
	La-135	La-143	Ce-137	Pr-136	Pr-137	Pr-139	Pr-142m	Pr-144	Pr-147	Nd-136
	Nd-139	Nd-141	Nd-151	Pm-141	Sm-141	Sm-141m	Sm-155	Eu-158	Gd-145	Dy-157
	Dy-165	Ho-155	Ho-157	Ho-159	Ho-161	Ho-162	Ho-162m	Ho-164	Ho-164m	Er-161
	Er-165	Tm-162	Tm-175	Yb-162	Yb-167	Yb-177	Lu-178	Lu-178m	Hf-182m	Hf-183
	Ta-172	Ta-174	Ta-180m	Ta-182m	Ta-185	Ta-186	W-176	W-177	W-179	W-181
	Re-177	Re-178	Re-187	Re-188m	Os-180	Os-189m	Ir-182	Pt-186	Pt-189	Pt-193

	Pt-197m	Pt-199	Au-200	Au-201	Hg-195	Hg-199m	Tl-194	Tl-194m	Tl-195	Tl-197
	Tl-198m	Tl-199	TI-201	Pb-195m	Pb-198	Pb-199	Pb-209	Bi-200	Po-203	Po-205
	U-239	Np-232	Np-233	Pu-235	Am-237	Am-238	Am-244m	Am-245	Am-246m	Cm-249

Annex no. 5

SAMPLE

(name and address of organisation)

REGISTRATION CARD OF INPUT RADIOACTIVE MATERIAL AND RADIOACTIVE SOURCES PRODUCED BASED THEREON

Source radioactive material:

- radioisotope
- description of source radioactive material
- activity
- date of activity definition
- number of certificate of source radioactive material
- producer’s name and address
- chemical form
- physical form
- weight, volume or quantity
- parameters
- type, kind and number of container of source radioactive material

Sources produced based on source radioactive material

No.	Date of production	Used activity	Date of used activity definition	Remaining activity	Date of remaining activity definition	Source code	Source number	Source activity	Date of source activity definition	Number of sources	No. of source certificat
1	2	3	4	5	6	7	8	9	10	11	12

(full name, signature and stamp of person filling out card)

Annex no. 6
SAMPLE

(name and address of organisation)

REGISTRATION CARD OF INCOMING AND OUTGOING RADIOACTIVE SOURCES

No.	Radioisotope	Activity according to source certificate	Date of activity definition	Date of source receipt	Name and address of supplier	Name and specification of delivery document	Type of source	Type of sealed radioactive source or chemical and physical form of open radioactive source	Source code and producer's identification mark	Source number of no. of source certifica
1	2	3	4	5	6	7	8	9	10	11

* x – sealed radioactive source
o – open radioactive source

Annex no. 7

SAMPLE

(name and address of organisation)

REGISTRATION CARD OF OPEN RADIOACTIVE SOURCE

Radioisotope	Chemical and physical form	Activity	Date of activity definition	Quantity, volume, weight	Certificate number, number of units	Date of receipt	Type and number of storage container	Storage location

(full name and signature of person filling out card)

Annex no. 8

SAMPLE

(name and address of organisation)

REGISTRATION CARD OF OPEN RADIOACTIVE SOURCE MOVEMENT

(name of radioisotope)

No.	Date	Issued			Collected by		Remaining		Remarks
		activity and date of definition	quantity, weight, volume	place of application	full name	signature	activity as of	quantity, weight, volume	
1	2	3	4	5	6	7	8	9	10

Annex no. 9

SAMPLE

(name and address of organisation)

REGISTRATION CARD OF SEALED RADIOACTIVE SOURCE

Date of receipt		
Radioisotope		
Activity and date of definition		
Type of source		
Number of source certificate and number of source		
License no.		
Name and address of producer		
Name and address of supplier		
Place of storage or installation		
Type and number of storage or work container		
Tightness measurement	date	
	result	
	report no.	

Taken off registration record	name and address of consignee	
	number and date of delivery document	
Full name and signature of person filling out card and date of entry		

Annex no. 10

SAMPLE

(name and address of organisation)

REGISTRATION CARD OF SEALED RADIOACTIVE SOURCE MOVEMENT
(radioisotope, activity and source number)

No.	Date	Collected					Returned		Remarks
		type of device, container	factory no. of device	place of application	full name	signature	date	full name of receiving person	
1	2	3	4	5	6	7	8	9	10

Annex no. 11
SAMPLE

(name and address of organisation)

REGISTRATION CARD OF HELD SEALED RADIOACTIVE SOURCES AS OF 31 December 20...

No.	Radioisotope	Activity according to source certificate	Date of activity definition	Certificate number, number and type of source	Type of container or name of device	Place of application or storage
1	2	3	4	5	6	7

Manager of organisation

(full name, signature)

Radiation protection inspector

(full name, license no., signature)