

This is an unofficial translation of the text,
as being effective from January 2, 2016
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489/2015. (XII. 30.) Korm.

on monitoring radiation conditions relevant for public exposure of natural and artificial origin and on the scope of quantities obligatory to be measured

The government, pursuant to the authorization provided in Subsection *m*) of Section 67 of the Act CXVI of 1996 on Atomic Energy, proceeding in its competence as determined in Subsection (1) of Section 1 of the Fundamental Law, orders as follows:

1. Effect of the decree

Section 1

Effect of this decree, pursuant to Paragraph 36 of Subsection (2) of Section 17 of Act CXVI of 1996 on Atomic Energy (hereinafter referred to as: Atv.) extends over the following items necessary to determine public exposure received from artificial origin in addition to natural and medical public exposure

- a*) quantities to be measured obligatorily,
- b*) activity of organizations tasked with the determination of quantities to be obligatorily measured,
- c*) central acquisition, processing, management and evaluation of data becoming known from obligatorily measured quantities and other measurements, and
- d*) national radiation conditions, data supply to comply with international notification obligations on radioactive contamination and to operation of the national nuclear emergency response system (hereinafter referred to as: NERS).

2. Interpretation orders

Section 2

In the application of this decree:

1. *regulatory monitoring data supply centre*: data acquisition and supply centre of a measurement network performing regulatory monitoring of radiation conditions in the environment of a special facility;
2. *special facility*: nuclear facility, uranium mine, radioactive waste repository, A-level isotope laboratory;
3. *quality management system*: a quality management system that complies with the requirements of the Hungarian Standard MSZ EN ISO/IEC 17025:2005 on the general requirements on the competence of testing and calibrating laboratories;
4. *monitoring data supply centre*: data acquisition and supply centre of a measurement network or testing laboratory performing the determination of environmental radiation conditions important to radiation exposure received from artificial origin in addition to natural and medical public exposure and the determination of activity concentration of certain radionuclides measured in the environment, except the regulatory monitoring data supply centre;
5. *indicative dose*: committed effective dose for one year of ingestion resulting from all the radionuclides whose presence has been detected in a supply of water intended for human consumption, of natural and artificial origin, but excluding tritium, potassium-40, radon and short-lived radon decay products;

3. National Environmental Radiation Monitoring System

Section 3

(1) Determination of the scope of quantities pursuant to Paragraph *a*) of Subsection (1) of Section 1 and harmonization of the organizations performing environmental radiation measurement, central data supply, processing, registration and evaluation related to the national radiation conditions are the tasks of the Hungarian Atomic Energy Authority (hereinafter referred to as: HAEA).

(2) The National Centre for Public Health (hereinafter referred to as: NCPH) contributes the HAEA in the performance of the tasks as per Subsection (1) with respect to supply, processing, registration and professional support in the evaluation of data.

(3) Acquisition, registration and evaluation of national measurement data from environmental radiation conditions important to radiation exposure received from artificial origin in addition to natural and medical

public exposure and from activity concentration of certain radionuclides measured in the environment (hereinafter referred to as: monitoring data) and coordination of the regulatory monitoring programmes in the environment of the special facilities are performed by the National Environmental Radiation Monitoring System (hereinafter referred to as: NERMS) operated under the supervision of the HAEA.

(4) Operative organization of the NERMS is the Radiation Information Supply Centre (RISC) operated by the HAEA.

(5) Regulatory monitoring of radiation conditions in the environment of special facilities independently of the environmental monitoring activity of the licensee determined in law shall be performed based on the data supplied by the monitoring systems and networks of the ministry led by the minister responsible for health, the ministry led by the minister responsible for environmental protection, the ministry led by the minister responsible for agricultural policy and of the ministry led by the minister responsible for the food chain.

Section 4

Tasks of the NERMS are

a) to acquire, analyse, register and evaluate results related to environmental radiation dose-rate measured within the territory of the country, radioactive isotopes observed in environmental elements, foodstuffs, drinking water, fodders and to the activity concentration of radon and radon progeny building up in outdoors and in buildings, furthermore to internal radioactive contamination of human body in consequence of an abnormal event causing unplanned discharge of radioactive materials to the environment,

b) to perform regulatory evaluation of radiation conditions in the environment of special facilities,

c) to supply measurement and monitoring data for the operation of the NERS determined in Govt. Decree 167/2010. (V.11.) on the national nuclear emergency response system,

d) to contribute to the authentic information of the public of the environmental radiation conditions,

e) to contribute to the fulfilment of the international notification and information obligations related to national radiation conditions and radioactive contamination, and

f) to publish the monitoring and measurement results in annual reports and ad-hoc reports to inform the authorities, the European Commission and the public.

Section 5

(1) The public administration organizations, special facilities and other institutes (NERMS members) listed in Annex 1 shall participate in the activity of the NERMS.

(2) The activity of the NERMS is directed by the Professional Committee (NERMS PC) operating under the coordination of the HAEA, which consist of professionals assigned by the NERMS members, the chair of the committee and the secretary. Each NERMS member is authorized to nominate one committee member.

(3) The chair of the NERMS PC shall be appointed and exempted by the minister supervising the HAEA; its secretary is the manager of the RISC.

(4) Operational rules of the NERMS are determined in the NERMS Operation Rules (hereinafter referred to as: Operational Rules), which is developed by the NERMS PC and approved by the HAEA Director General.

(5) Content requirements of the Operational Rules are included in Annex 2.

(6) The NERMS PC can invite organizations performing environmental monitoring other than those specified in Subsection (1) to participate in the NERMS activity with the right of consultation and to supply measurement results.

Section 6

(1) The following shall belong to the scope of tasks of the NERMS PC

a) to develop the Operational Rules and submit for approval to the HAEA Director General,

b) to accept and approve any modification of the annual measurement and data supply programmes of the NERMS members determined in Subsection (5) of Section 3 to be implemented within the NERMS, and to provide measurement recommendations for the NERMS members,

c) development of aspects of the annual report,

d) approval of the annual report and ad-hoc reports,

e) evaluation, analysis and approval of draft reports prepared by the RISC,

f) preparation and submission of annual budget of the NERMS PC,

g) determination of the annual programme of comparative measurements per Subsection (3) of Section 8, and

h) preparation of proposals on development of NERMS.

(2) The report on the previous year shall be completed by June 30 each year.

Section 7

(1) Section 1 of Annex 3 determines the scope of measurements, measurement types to be applied and the radionuclides to be obligatorily measured by the data acquisition and supply centres of the NERMS members (hereinafter referred to as: authority monitoring data supply centres) denominated in Subsection (5) of Section 3.

(2) The items of sparse and dense monitoring networks in compliance with the European Commission recommendations 2000/473/EURATOM are determined by Section 2 of Annex 3.

(3) The data acquisition and supply centres of NERMS members not listed in Subsection (5) of Section 3 (hereinafter referred to as: monitoring data supply centres) and the scope of measurements performed by them is included in Section 3 of Annex 3.

(4) Detailed requirements on the measurement programmes to be performed within the NERMS shall be determined by every NERMS member individually within their scope of authority considering the proposals of the NERMS PC.

(5) The NERMS members shall develop their own monitoring programmes to comply with Annex 4 in terms of the measured samples, quantities to be measured and the respective detection limits. Accepted method of calculation of detection limit shall be determined by the NERMS PC.

(6) The NERMS members, except for those in Subsection (7) and (8), shall determine the rules of data supply for the NERMS in their own internal regulations.

(7) Supply of certain measurements results shall take place at maximum within 15 days subsequent to the approval of the data according to the quality assurance system.

(8) If the investigation level determined in the rules of the given measurement network and the PC Operational Rules is reached, then the data supply shall take place promptly.

Section 8

(1) The authority monitoring data supply centres and monitoring data supply centres shall deliver their measurement results to the RISC with the data content, data format and frequency as specified by the PC. Minimum content of data delivery related to environmental samples is specified in Annex 5.

(2) In order to ensure authenticity of data sent to the RISC, the authority monitoring data supply centres shall operate a quality management system covering their sampling and measurement activities.

(3) In order to ensure a uniform quality assurance of measurement data, such comparative measurements shall be organized on a regular basis or such international comparative measurement programmes shall be participated, via which validation of the applied measurement methods can be performed.

(4) The owner of the measurement results is the NERMS member who delivered them. The measurement results shall be used by the NERMS members within their scope of authority; the use shall be free of charge only for preparation of non-commercial processing and analyses with preliminary consent and denomination of the sender.

(5) The NERMS PC shall use the measurement results for preparation of processing and analyses exclusively as determined in the Operational Rules.

(6) The measurement programmes for the upcoming year shall be approved by 30 of October.

Section 9

Tasks of the RISC includes

- a)* central computerized acquisition, processing, evaluation and registration of measurement results,
- b)* provision of on-line access to the stored data and evaluation results for the NERMS PC, central organization of the professional disaster management organ participating in the operation of the NERS and for the government organizations of the NERS,
- c)* provision of data on environmental radiation conditions and radioactive contamination in the appropriate format to fulfil the international notification obligations of the country,
- d)* compilation of the annual report with the content and form as specified in the Operational Rules, and its submission for approval to the NERMS PC,
- e)* preparation of an ad-hoc report on the request of the NERMS PC and its submission to the NERMS PC,
- f)* preparation and submission of operational rules and annual budget of the RISC,
- g)* preparation of an ad-hoc report on the request of the NERMS PC with the content specified by the NERMS PC.

Section 10

(1) Cost of operation of the NERMS PC and the RISC shall be ensured from the budget of the HAEA.

(2) The object year budget of the concerned organizations shall be prepared so that the excess resources related to the prescribed tasks are available.

(3) Costs of operation and development of the authority monitoring data supply centres, including the validation related measurements determined in Subsection (3) of Section 8, shall be ensured within the budget of the concerned ministry as an appropriation managed in the professional chapter.

4. Closing provisions

Section 11

This decree shall enter into force on January 1, 2016.

Section 12¹

Section 13

(1) This decree contains regulations that are compatible with Article 35 of Chapter 3 of Title II of the Treaty Establishing the European Atomic Energy Community.

(2) This decree contains regulations that are compatible with the contents of Annex I and Annex III of the 2000/473/EURATOM European Commission Recommendations.

(3) This decree contains regulations that are compatible with Article 2(3), Article 6 and Annex III of the Council Directive 2013/51/EURATOM of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption.

(4) The operational rules required in Subsection (4) of Section 5 shall be submitted for the first time until March 31, 2016.

Annex 1 to Govt. Decree 489/2015. (XII. 30.) Korm.

Members of the NERMS

1. ministry led by the minister responsible for protection against disasters,
2. ministry led by the minister responsible for health,
3. ministry led by the minister responsible for environmental protection,
4. ministry led by the minister responsible for agricultural policy,
5. ministry led by the minister responsible for supervision of food chain,
6. ministry led by the minister responsible for education,
7. ministry led by the minister responsible for defence,
8. ministry led by the minister responsible for organization of public administration,
9. Hungarian Meteorological Service, (hereinafter referred to as: HMS),
10. Hungarian Academy of Science, (hereinafter referred to as: HAS),
11. HAEA,
12. MVM Paks Nuclear Power Plant Ltd,
13. National Public Limited Company for Radioactive Waste Management (hereinafter referred to as: PURAM),
14. Mecsekérc Ltd,
15. National Centre for Public Health National Research Directorate for Radiobiology and Radiohygiene (hereinafter referred to as: NCPH NRDRR).

Annex 2 to Govt. Decree 489/2015. (XII. 30.) Korm.

Content requirements on the Operational Rules of the NERMS

1. Operational rules of the NERMS PC, especially the rules on meetings, quorum, right to vote and decision making and on right of representation and right of signature
2. Scope of tasks of the NERMS PC and the NERM PC chair and secretary
3. Operational rules and tasks of the RISC
4. NERMS related environmental radiation monitoring tasks of the NERMS members
5. Data supply obligations and rights of the data acquisition and supply centres
6. Detailed rules on activities of the RISC related to acquisition, processing, analysis of monitoring results and to making them accessible and published
7. Content and formal requirements on the NERMS annual report

**1. Authority monitoring data supply centres, and
object of measurements involved in the monitoring activity of the NERMS and
the scope of quantities to be measured obligatorily**

1.1. Authority monitoring data supply centres and object of measurements

	A	B	C
1	NERMS member	Data supply centre	Object of measurement
2	ministry led by the minister responsible for health and the ministry led by the minister responsible for organization of public administration	Information Centre of the Radiological Monitoring and Data Acquisition Network of the Health Sector (NCPH NRDRR)	air, mainland environment, water environment, drinking water, environmental gamma dose-rate, internal radioactive contamination of human body and the mediator medium
3	ministry led by the minister responsible for agricultural policy and ministry led by the minister responsible for supervision of food chain	National Food Chain Safety Office	air, drinking water, soil, flora, food products of vegetation and animal origin, fodders, other agricultural and forestry related samples
4	ministry led by the minister responsible for environmental protection	Regional Environmental Monitoring Centres	air, mainland environment, water environment, environmental gamma dose-rate

1.2. Minimum scope of NERMS data acquisition activity performed with the support of regulatory monitoring data supply centres

	A	B	C	D	E	F	G	H	I
1		Gamma dose-rate	Gross beta	Gamma-spectrometry	Sr-90	I-131		Radon	Indicative dose^(a)
2	air ^(b)		aerosol	aerosol			elementary and organic	x	
3	environmental radiation level	x							
4	surface water ^(c)		x	x					
5	drinking water ^(d)			x	x	x		x	x
6	Milk			x	x				
7	other foodstuff and fodders			x	x				

1.2.1. Comments:

1.2.1.1. (a) = According to Govt. Decree 201/2001. (X. 25.) Korm. on quality requirements and order of monitoring of drinking water.

1.2.1.2. (b) = A continuous operation sampler shall be used for air sampling.

1.2.1.3. (c) = Sampling of river water should be performed, if possible, where the flow rate can also be measured, which shall also be indicated with the activity concentration measurement result.

1.2.1.4. (d) = Including bottled waters as well.

2. Structure of the dense and sparse monitoring network

2.1. Purpose of the sparse monitoring network of the European Union is to provide that by high sensitivity measurement of samples taken at a sampling location characteristic for the country, which is able to detect actual values of the quantities specified in Table I of Annex 4, characteristic measurement results can be

obtained for the territory of the country related to each sample type, from which trends of radioactivity levels in the whole country can be tracked. The sampling locations characterizing the country shall be designated by the NERMS PC.

2.2. Purpose of the dense monitoring network is to cover the whole territory of the country by such sampling locations, that based on the data obtained from the measurement of these samples the average radioactivity levels characteristic for the territory of the country can be calculated. The authority monitoring data supply centres serve as basis for the dense monitoring network, but the monitoring data supply networks are also involved.

3. Monitoring data supply centres, and monitoring areas that can be involved in the NERMS authority monitoring activity

	A	B	C
1	NERMS member	Data supply centre	Object of measurements
2	ministry led by the minister responsible for protection against disasters	Ministry of Interior National Directorate General for Disaster Management, Nuclear Emergency Information and Evaluation Centre	^(a) environmental gamma dose-rate ^(b) air aerosol
3	ministry led by the minister responsible for education	Budapest University of Technology and Economics, Operational Environmental Radiation Monitoring System of the Training Reactor of the Institute of Nuclear Techniques	air aerosol, air fall-out, environmental gamma dose-rate
4		Environmental Monitoring System of Roland Eötvös University of Science, University of Debrecen, University of Kaposvár, University of West Hungary (Sopron), University of West Hungary (Székesfehérvár), University of West Hungary (Szombathely), Pannon University, University of Pécs, Semmelweis University, University of Szegedi, Szent István University	environmental gamma dose-rate
5	HAS	Environmental Protection Service of the HAS Centre for Energy Research	air, plant water, environmental gamma dose-rate
6		Environmental radiation monitoring system of the HAS Institute for Nuclear Research	air. environmental gamma dose-rate
7		Environmental radiation monitoring system of MTA Chemical Research Institute	air. environmental gamma dose-rate
8	Mecsekérc Ltd	Radiological laboratory of the Mecsekérc Ltd Zrt.	air, mainland environment, water environment, drinking water, radon, environmental gamma dose-rate
9	MVM Paks Nuclear Power Plant Ltd	Operational Environmental Radiation Monitoring System	air, water environment, environmental gamma dose-rate
10	PURAM	Operational Environmental Radiation Monitoring Systems of the Radioactive Waste Treatment and Disposal Facility and the National Radioactive Waste Repository	air, mainland environment, water environment, environmental gamma dose-rate

3.1. Comments:

3.1.1. (a) = remote monitoring of environmental gamma dose-rate are performed with the participation of the automatic monitoring stations of the ministry led by the minister responsible for protection against disasters, ministry led by the minister responsible for defence, ministry led by the minister responsible for health, ministry led by the minister responsible for agricultural policy, ministry led by the minister responsible for education, HMS, HAS, MVM Paks Nuclear Power Plant Ltd and the PURAM according to the operation of the National Radiation Detection and Monitoring System determined in separate legislation.

3.1.2. (b) = measurement of air aerosol takes place with the involvement of automatic monitoring stations of the HMS according to the operation of the National Radiation Detection and Monitoring System.

Annex 4 to Govt. Decree 489/2015. (XII. 30.) Korm.

1. Samples and quantities to be measured obligatorily

	A	B	C
1	Sample	Quantities to be measured	
2		Dense network	Sparse network
3	Air aerosol	a) Cs-137 activity concentration b) Gross beta and Be-7 activity concentration	a) Cs-137 b) Gross beta and Be-7 activity concentration c) elementary and organic I-131
4	Environmental radiation level	a) Environmental gamma dose-rate	a) Environmental gamma dose-rate
5	Surface water	a) Cs-137 activity concentration, b) remaining beta and gamma emitter isotopes	a) Cs-137 activity concentration b) remaining beta and gamma emitter isotopes
6	Drinking water	a) H-3, Sr-90, Cs-137 activity concentration b) activity concentration of natural radionuclides according to Govt. Decree 201/2001. (X. 25.) Korm. c) radon d) indicative dose	a) H-3, Sr-90, Cs-137 activity concentration b) activity concentration of natural radionuclides according to Govt. Decree 201/2001. (X. 25.) Korm. c) radon d) indicative dose
7	Milk	Cs-137, Sr-90 and K-40 activity concentration	Cs-137, Sr-90, K-40 activity concentration
8	Mixed foodstuff	Cs-137, Sr-90 activity concentration	Cs-137, Sr-90, activity concentration

2. Reportable levels of applied measurements

2.1. Table on reportable levels of applied measurements

	A	B	C
1	Type of sample	Quantity to be determined	Reportable level
2	Air	Gross beta (Sr-90 equivalent activity concentration) Cs-137 activity concentration	5 E-03 Bq/m ³ 3 E-02 Bq/m ³

3	Surface waters	Residual beta (based on Sr-90 isotope) Cs-137 activity concentration	6 E-01 Bq/l 1 E+00 Bq/l
4	Drinking water	H-3 activity concentration Sr-90 activity concentration Cs-137 activity concentration Rn-222	1 E+01 Bq/l 4 E-01 Bq/l 5 E-01 Bq/l 1 E+01 Bq/l
5	Milk	Sr-90 activity concentration Cs-137 activity concentration	2 E-01 Bq/l 5 E-01 Bq/l
6	Mixed foodstuff	Sr-90 activity concentration Cs-137 activity concentration	1 E-01 *Bq/d.p. ^(a) 2 E-01 *Bq/d.p. ^(b)

2.2. Explanation:

2.2.1. (a) = Becquerel per person and per day,

2.2.2. (b) = Becquerel per person and per day.

Annex 5 to Govt. Decree 489/2015. (XII. 30.) Korm

Required content of data supply related to measurements

1. Requirements on sampling data:

1.1. sample characteristics:

1.1.1. sample type

1.1.2. value type

1.2. date and time:

1.2.1. time of sampling

1.2.2. type of date

1.2.3. sampling time (in hours)

1.3. sample location:

1.3.1. name of locality

1.3.2. sampling location identification code or marking of sampling location

1.3.3. latitude and longitude data

1.3.4. name of catchment area for surface waters (river, lake, reservoir)

2. Requirements on measurement data

2.1. Name of laboratory

2.2. Mark or category of radionuclide

2.3. Description of sample processing

2.4. Type of measurement device

2.5. Value of measure activity

2.6. Measurement uncertainty

2.7. Type of measurement uncertainty

2.8. Unit

2.9. Reference date (for which the activity value is specified)

2.10. Flow rate (in case of a river)

2.11. Production rate (milk and produced drinking water)

2.12. Annually fabricated or distributed amount (bottled drinking water)

¹ Section 12 has lost its effect pursuant to Subsection (2) of Section 12 of Act CXXX of 2010.