

The Decree No. 474/2000

of the Ministry of Environment of the Slovak Republic

from 15th December 2000

on the determination of the quantity of emitted pollutants, method and conditions of determination, monitoring and presentation of data on compliance with defined emission limits and general operational conditions and on technical equipment requirements for monitoring of emissions and polluting substances

The Ministry of Environment of the Slovak Republic (hereinafter only “Ministry”) provides according to Article 17(b) of the Act No. 134/1992 Coll. of the Slovak National Council on state administration of air protection as amended by the Act No. 148/1994 Coll. and the Act No. 459/2000 Coll. the following:

Article 1

The subject of regulation

This Decree regulates:

- a) determination of quantity of emitted pollutants;
- b) method and conditions of determination, monitoring and presentation of data on compliance with defined emission limits and general operational conditions;
- c) technical equipment requirements for monitoring of emissions and polluting substances and the term of their provision.

Article 2

Determination of the quantity of emitted pollutant

(1) Total quantity of emissions of pollutant occurring in waste gases released from the source of pollution to the air (hereinafter only “quantity of pollutant”) is detected, when

- a) the pollutant is listed in the list of pollutants¹ and there are emission limits defined;
- b) the pollutant is liable to the fee duty¹;
- c) there are conditions for air protection² defined for pollutant.

(2) Quantity of pollutant is determined by

- a) continual monitoring using technical equipment intended for monitoring of emission of substances polluting the air³ (hereinafter only “emission monitoring system”);
- b) calculation using individual emission factors measured by single authorized measurement;
- c) qualified analysis;
- d) combination of methods according to the points (a) to (c).

(3) Quantity of pollutant is determined as the sum of quantities of this substance being emitted to the air during production and operational regimes and other non-operational states, where the technology was indeed running or which indeed occurred during the period of determination of the quantity of pollutant, for example during:

¹ Annex No. 1 of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic implementing the Act No. 309/1991 Coll. on air protection against pollutants (Act on Air) in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

² Article 11(5) of the Act No. 309/1991 Coll. on air protection against pollutants (Act on Air) in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

³ Article 7(1)(i) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

- a) stabilized operation of the source of pollution, where technical and operational parameters are in compliance with documentation⁴ except selected operational states⁵ (hereinafter only “stabilized operation”);
- b) selected operational states⁵ and other inevitable phases, where technical and operational parameters are synchronized with documentation or there are other activities relating to operation, renovation or reparations of technical and operational devices carried out;
- c) hazardous states of the source of pollution endangering air quality⁶, where technical and operational parameters are not in compliance with documentation and which are possible to synchronize immediately according to documentation and without necessity of emergency technical and operational or technical and organizational measures;
- d) emergency phases of source of pollution (accidents)⁷ which occurred, if hazardous phases according to point c) were not eliminated;
- e) serious and immediate menaces or degradations of air quality⁸ defined in the set of technical and operational parameters and technical and organizational measures to ensure protection of the air⁹, which occurred as result of violation of legal regulations in the case of the phase according to point d) and as result of other extraordinary events not invoked by operator of the source of pollution, which request to inform the public on possibility of danger⁸.

Article 3

Determination of quantity of pollutant by continual monitoring

- (1) The quantity of pollutant is detected by continual monitoring, if there are determined data on compliance with defined emission limits (hereinafter only “emission values”).
- (2) Other methods of determination of quantity of pollutant from particular place of emission shall not be applied during the operation of emission monitoring system according to the documentation.

Article 4

Particular emission factors

- (1) Particular emission factors are determined by single authorized measurement, if single authorized measurement is used for determination of emission values and in cases pursuant to paragraph 8.
- (2) Particular emission factors are not determined by procedure according to paragraph 1, in cases of
 - a) a boiler or gas-turbine for combustion of fuels (hereinafter only “apparatus”) with nominal thermal input lower than 50 MW
 - b) a waste incineration plant with nominal capacity 1 tonne of incinerated waste per hour and less; this condition is valid for device intended for co-incineration of waste, when the condition according to point c) is valid at the same time;
 - c) an apparatus, a technological unit, a part or a device of source of pollution (hereinafter only “part of source of pollution”), which is not possible to operate more than 2.400 hours per year according to valid documentation;
 - d) other source of pollution except the source of pollution containing the device for combustion of fuels and except waste incineration plant and waste co-incineration plant (hereinafter only “technological source of pollution”), if there is a mass flow of pollutant lower than quintuple of limited mass flow on measurement place; limited mass flow is 1 kg per hour for organic pollutants in waste

⁴ Article 2(3) of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic.

⁵ Article 9(4), (a), (b), (c), (d), (f) and (g) of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic.

⁶ Article 7(1), (f) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

⁷ Article 7(1), (f) and Article 7, (2) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

⁸ Article 7, (1) (h) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

⁹ Article 7, (2) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

gases in the form of gases and steams, expressed as total organic carbon 5 kg per hour for carbon monoxide and for other pollutant is equal to mass flow for new source of pollution¹⁰.

(3) Particular emission factors are expressed as weight of emissions of pollutant according to

- a) unit of used raw material;
- b) unit of burned fuel;
- c) unit of production or quantity of the product;
- d) unit of time of stabilized operation
- e) batch (charge);
- f) other parameter according to the property of particular technology, which is in relation to the weight of emitted pollutant; (hereinafter only “related value”).

(4) Particular emission factor is for pollutant determined as a quotient of weight of emission of pollutant to the air and timely corresponding total amount of related value.

(5) If the value of emission factor, determined under the conditions of single authorized measurement of emission values, is not representative from the viewpoint of calculation of yearly quantity of pollutant, calculation of quantity of pollutant shall be determined by qualified analysis according to Article 5, (2), (e) or the operator of source of pollution may determine representative particular emission factor according to Article 8.

(6) In the case of uncertainty of ratio between the value of emission factor of pollutant under measurement conditions of emission values and under representative production and operational regime of stabilized operation, the ratio coefficient according to Article 5, (2) (e) shall be determined by confirmation single authorized measurement; ratio coefficient is valid up to the change of source of pollution or its part.

(7) Particular emission factor is for the purpose of calculation of quantity of pollutant valid in the year, when it was determined and for the next years until defined year of realization of repeated single authorized measurement of emission value, provided there is no change of technology of given source of pollution or its part.

(8) The operator of source of pollution may determine the quantity of pollutant using individual emission factor determined by single authorized measurement even if it is not provided; the condition of the use of individual emission factor is its representativeness for given production and operational regime. Particular emission factor is valid until the change of source of pollution or its part, but not more than 6 years.

Article 5

Determination of quantity of pollutant by qualified analysis

(1) The quantity of pollutant is determined by qualified analysis

- a) if emitted quantity of pollutant can be calculated according to unambiguous emission dependency or if calculated quantity of emitted pollutant is uppermost possible;
- b) if it is not determined by continual monitoring or if operation of emission monitoring system is not in compliance with valid documentation;
- c) if it is not determined by calculation using i particular emission factors determined by single authorized measurement;
- d) for other states than stabilized operation, which indeed occurred during the period of quantity of pollutant determination;

¹⁰ Annex No. 3 of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

- e) if due to violation of duties¹¹ the quantity of pollutant is not determined by continual monitoring or single authorized measurement;
- f) during transitional period until determination of quantity of pollutant by continual monitoring or single authorized measurement.

(2) The quantity of pollutant is determined by procedures of qualified analysis in the following order:

- a) calculation using unambiguous emission dependency;
- b) calculation using data of existing emission monitoring system till the time of presentation of its compliance with this Decree;
- c) calculation using particular emission factor for existing sources of pollution determined by other person than authorized person till the time of its determination by authorized person;
- d) calculation using last particular emission factor determined by authorized person if valid particular emission factor is not determined by repeated single authorized measurement during defined period due to violation of duties while technology of given source of pollution or its part has not been changed;
- e) calculation according to particular emission factors and ratio coefficients determined by single authorized measurement or technical analysis for different operational states of particular technology;
- f) mass and balance calculation according to functional emission dependency and other measured and operationally recorded technical and operational parameters of particular technology as emission value;
- g) calculation using general emission dependencies published by the Ministry in its journal;
- h) calculation using general emission factors published by the Ministry in its journal; mentioned procedure shall be applied according to published conditions including launchings, changes of output and shutdowns;
- i) methods of comparison and analysis of similarity of functional emission dependency of relevant technologies of sources of pollution and procedures;
- j) calculation according to other published emission dependencies and factors as mentioned under points g) and h);
- k) interpolation of measured values during interruption of measurement or the use of alternate values, if the measured value is outside of measurement range of emission monitoring system or measured values of signals are not valid;
- l) other suitable procedure resulting from properties of technology of particular source of pollution or its part.

(3) Unambiguous emission dependency according to paragraph 1(a) is, when

- a) technology does not use separating devices or pollutant is not separated in particular separating device (emission degree is higher than 90 %);
- b) it can be expressed by functional relation between the quantity of emitted pollutant and selected technical and operational parameters;
- c) functional relation according to (b) is not depending on regime of operation;
- d) values of selected technical and operational parameters according to (b) are determined by the method according to valid documentation.

Article 6

Determination of data on compliance with defined emission limits

(1) Data on compliance with defined emission limits shall be determined as emission values¹² for

- a) pollutants for which emission limits¹³ are defined;
- b) smoke opacity¹⁴.

¹¹ Article 4, (2) of the Act No. 401/1998 Coll.

¹² Articles 9 and 9a of the Regulation No.92/1996 Coll. of the Government of the Slovak Republic in the wording of the Order No.473/2000 Coll. of the Government of the Slovak Republic.

¹³ Annexes No. 3 and 4 of the Regulation No.92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No.473/2000 Coll. of the Government of the Slovak Republic.

- (2) Emission values shall be determined by
- a) technical calculation;
 - b) single authorized measurement;
 - c) continual monitoring;
 - d) combination of methods according to points a) to c).

(3) Emission values are not determined for pollutants, where it is clear or proved, that they cannot be present in technological gas at the level higher than 10% of the value of corresponding emission limit and in cases provided for in Article 13, paragraph 13.

- (4) If uncertainty occurs, the possibility of presence of pollutant shall be proved by
- a) confirmation single authorized measurement, or
 - b) technical calculation accompanied with concurring opinion of the Slovak Environmental Inspection¹⁵ (hereinafter only “Inspection”).

(5) Continual monitoring and single authorized measurement shall be carried out by methods and according to methodologies, which:

- a) relate to specified limit of pollution;
- b) offer representative results of measurement;
- c) are listed in the list of methods and methodologies of authorized measurements¹⁶ and they are published as
 1. Slovak technical standards¹⁷, transposing European standards, or
 2. Slovak technical standards, transposing international standards, or Slovak technical standards offering data of equivalent scientific value in comparison with European standards, or
 3. other technical specifications¹⁸, if Slovak technical standards according to points 1 and 2 are not issued.

(6) The place of determination of emission value is the place of source of pollution or its part, where emission limit¹⁹ is valid and where it is possible to determine correct value of measured parameter in compliance with paragraph 5 (hereinafter only “measuring place”).

(7) The following documents shall be attached to the application for issuing of approval of air protection authority²⁰ to the notification, or to the information²¹ in order to prove compliance with defined emission limits:

- a) report from entire functional exam of monitoring system; during next years the protocol from yearly evaluation of continual monitoring, protocols, where is evaluated breach of emission limit, and data recorded to digital information medium;
- b) report from single authorized measurement;
- c) entire description of technical calculation and support documents on compliance with conditions of unambiguous emission dependency or calculation of uppermost possible emission value and concurring opinion of the Inspection; support documents and concurring opinion of the Inspection

¹⁴ Annex No. 4 of the Regulation No.92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No.473/2000 Coll. of the Government of the Slovak Republic.

¹⁵ Article 3 of the Act No. 134/1992 Coll. on state administration of air protection in the wording of the Act No. 148/1994 Coll. and the Act No. 159/2000 Coll. of the National Council of the Slovak Republic

¹⁶ Article 2 of the Regulation No. 299/1995 Coll. of the Ministry of Environment of the Slovak Republic on conditions for granting a license for carrying out measurements of emissions and pollutants and on principles of carrying out this activity.

¹⁷ Article 5, (4) of the Act No. 264/1999 Coll. on technical requirements for products and on assessment of compliance and on amending of some acts.

¹⁸ Article 2, (3) of the Regulation No. 299/1995 Coll. of the Ministry of Environment of the Slovak Republic.

¹⁹ Article 4 and Annex No. 4 of the Regulation No.92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No.473/2000 Coll. of the Government of the Slovak Republic.

²⁰ Article 11, (1) and Article 11a, (8), 11 and 12 of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

²¹ Article 7, (1), point b) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic and the Act No. 459/2000 Coll.

Article 10 of the Act No. 134/1992 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic, the Act No. 393/1998 Coll. and the Act No. 459/2000 Coll.

Article 4 of the Act No. 401/1998 Coll.

shall be attached to the first presentation of compliance with defined emission limits and to presentation of compliance with defined emission limits after the change of source of pollution or after the change of its part, which are subject of approval;

- d) brief evaluation of the status of technology during years, when repeated single authorized measurement is not carried out and especially with reference to the facts, which may call the change of emission values determined in last authorized measurement;
- e) entire calculation of emitted quantities of pollutant from the source of pollution for all states of stabilized operation, summary values of related value for particular operational states of stabilized operation, yearly summary value of related value and other needed documentation depending on the method of determination of quantity of emitted pollutant in the cases, when emission value is expressed as emission factor;
- f) other data according to documentation or defined by air protection authority as condition.

Article 7

Technical calculation of emission value

(1) Emission value may be determined according to the approval²² by technical calculation, if application accompanied with concurring opinion of the Inspection proves, that properties of technology enable the calculation of

- a) correct value of emission values;
- b) uppermost possible value of emission quantity;
- c) correct or uppermost possible value of emission quantity using the results of authorized measurement of appropriate quantity, if technical conditions of the source of pollution or its part do not allow determination of correct emission value by direct measurement;

(2) Technical calculation of correct value of emission quantity according to paragraph 1(a) is

- a) technical and engineering calculation of value, expressing emission limit according to unambiguous emission dependency, and calculation of its accuracy;
- b) mass and balance calculation of emission value expressed as emission factor using values of inputs and outputs of pollutant and determined and operationally recorded values of related value according to valid documentation.

(3) Technical calculation of uppermost possible emission value according to paragraph 1(b) is technical and engineering calculation of emission value from the uppermost possible quantity of pollutant, which may in corresponding technology or process be released or created according to present status of knowledge of natural and other technical relations; impacts of separation process or other reduction of quantity of pollutant shall not be taken into account.

(4) In the case of uncertainty the validity of technical calculation of emission value shall be determined by confirmation single authorized measurement; if it is possible according to present status of measurement method.

Article 8

Single authorized measurement of emission value

(1) Emission value shall be determined by single authorized measurement, if

- a) it is not determined by technical calculation;
- b) it is not determined by continual monitoring;
- c) it is possible according to present status of single authorized measurement method.

²² Article 11, (1), (l) of the Act No. 309/1991 Coll. in the wording of the Act No. 459/2000 Coll.

(2) Single authorized measurement shall be carried out for such production and operational regime, for which

- a) emission limit²³ is defined;
- b) is found, whether measured source of pollution or its part are technically able to comply with defined emission limit for all regimes of stabilized operation according to valid documentation.

(3) If production and operational regimes according to paragraph 2 are for particular pollutants different or they are not expressly defined according to valid documentation, single authorized measurement shall be carried out for usual values of technical and operational parameters of such regime of stabilized operation, during which the supposed emission values are highest; if emission values for particular pollutants are depending on capacity, single authorized measurement shall be carried out for at least 0.9 multiple of nominal capacity of measured part of source of pollution. These conditions are not valid for checking measurement of the Inspection without prejudice to compliance with emission limits for all regimes of stabilized operation and all values of technical and operational parameters, which are enabled in documentation.

(4) Authorized persons²⁴ shall carry out single authorized measurements of emission values according to:

- a) provisions of paragraphs 2 and 3 and conditions for carrying out authorized measurements²⁴;
- b) methods and methodologies corresponding to present state of the art of authorized measurement taking into account cost efficiency, if it is enabled by present state of the art and requirements for accuracy of measurement of emission values;
- c) valid documentation and properties of measured technology;
- d) special conditions defined by air protection authority, if defined according to paragraphs 5 to 9.

(5) Special conditions or special period of carrying out single authorized measurement, or special conditions of presentation of compliance with emission limit are possible according to approval²², if application accompanied with concurring opinion of the Inspection proves, that

- a) it is not possible to comply with conditions of single authorized measurement according to paragraphs 2 and 3 even if accessible technical and organizational possibilities for their provision are exhausted;
- b) it is not possible to determine emission values during simultaneous operation of all parts of the source of pollution, for which common emission limit is set;
- c) it is not possible to determine correct emission values during startup operation of source of pollution or its part considering the properties of technology or conditions of authorized measurement;
- d) it is not possible to carry out authorized measurement or to comply with accuracy of emission value according to method and methodology corresponding to present state of the art of single authorized measurement for given pollutant;
- e) it is possible to prove the compliance with emission limits without doubts by technically and economically better method of determination of emission value and at the same time proposed method and conditions for determination of emission value or lower accuracy of the result of authorized measurement shall impact in no case the correctness of evaluation of compliance with emission limit;
- f) part of source of pollution is not operational more than 360 hours during the year appointed for single authorized measurement.

(6) If the source of pollution is composed from more than three identical parts, from which waste gases are conducted by separate piping, the emission value may be determined by reduced number of separate authorized measurements or by reduced time of separate authorized measurements, or for selected number of parts; for selection of number and time of separate authorized measurements and number of measured parts it shall be taken into account, that each part is measured during first or

²³ The Regulation No. 92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

²⁴ The Order No. 299/1995 Coll. of the Ministry of Environment of the Slovak Republic in the wording of the Order No.155/2000 Coll. of the Ministry of Environment of the Slovak Republic

repeated single authorized measurement without prejudice to compliance with defined emission limits for all parts of source of pollution.

(7) If the source of pollution is composed of more parts, from which waste gases are conducted by common piping, emission values shall be determined in relation to specific conditions

- a) during simultaneous operation of all parts, for which different emission limits are defined; conditions of compliance with emission limits shall be evaluated as weighted mean of defined emission limits; if specific conditions do not allow calculation of weighted mean, compliance with lowest value of defined emission limit may be evaluated after taking into account the dilution²⁵;
- b) independently for separate parts, for which common emission limit is defined; the conditions of compliance with common emission limit shall be evaluated separately;
- c) by combination of methods according to (a) and (b).

(8) If waste gases are from one part of source of pollution conducted by multiple piping, the number and time of separate authorized measurements may be adequately reduced according to paragraph 6 or emission values may be determined and conditions of compliance with emission limits may be evaluated according to paragraph 7.

(9) Compliance with defined emission limits may be determined as common emission value for pollutants, which can be jointly analytically determined by technical and economical better method according to present state of the art of authorized measurement, as for example gaseous organic pollutant expressed as total organic carbon, organic substances containing reduced sulfur expressed as hydrosulphide; emission limits for particular pollutants shall be evaluated as in compliance, if lowest emission limit after calculation of common emission value for pollutant with highest adjustment stoichiometric coefficient is complied.

(10) Emission values shall be determined by first single authorized measurement or by technical calculation

- a) during startup operation of sources of pollution or their parts;
- b) during startup operation of sources of pollution or their parts, for which compliance with defined emission limits is presented after their change²⁶;
- c) in the cases according to paragraph 5,(c) during testing operation after mastering (of running in) given technology, however at the latest within one year from definition of special condition of presentation of compliance with emission limits.

(11) Emission values shall be determined by repeated single authorized measurements in periods provided for technological sources of pollution in paragraph 13 and for selected sources of pollution in Article 13 and 14 with exception of measuring places according to paragraph 12.

(12) Emission values are not determined by repeated single authorized measurements on measuring places of sources of pollution or their parts, from which the pollutant may be emitted to the air according to valid documentation 360 hours and less per year unless it is not appointed otherwise for reasonable cases according to Article 17.

(13) For technological sources of pollution emission values of pollutant shall be determined by repeated single authorized measurement on particular measuring places at least once in

- a) three calendar years, if mass flow of pollutant on measuring place is equal to 0.5 multiple of limited mass flow or it is higher than 0.5 multiple of limited mass flow;
 - b) six calendar years, if mass flow of pollutant on measuring place is lower than 0.5 multiple of limited mass flow,
- unless it is not appointed otherwise according to paragraphs 16 and 17.

²⁵ Annex No. 5 of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic.

²⁶ Article 11, (1), (a),(g), and (k) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic, the Act No. 393/1998 Coll. and the Act No. 459/2000 Coll.

(14) Mass flow of pollutant shall be evaluated according to highest value from values listed in documentation or determined by single authorized measurement according to paragraphs 2 and 3; highest value is used until the change of source of pollution or its part. If compliance with emission limit for a group of pollutants is presented as common emission value, emission flow shall be evaluated after calculation to pollutant with highest adjustment stoichiometric coefficient.

(15) Emission values of pollutant shall be determined on measuring places according to paragraph 12 by repeated single authorized measurements at least once in period according to paragraph 13 and Articles 13 and 14, if pollutant was emitted to the air average more than 360 hours per year during previous years before last year of defined period; if the source of pollution or its corresponding part is not operational during the year of carrying out repeated single authorized measurement, authorized measurement shall be carried out in first year of real operation.

(16) Period of repeated single authorized measurement according to paragraph 13(a) is possible to prolong according to approval²² at most once in six years, if application accompanied with concurring opinion of the Inspection and first single authorized measurement prove, that highest emission values of pollutant do not exceed 50% of value of defined emission limit and there are assumptions for its permanent compliance and especially regarding to

- a) properties of given technological process, device or apparatus,
- b) material structure and physical and chemical properties of fuels and raw materials;
- c) technology and devices for emission reduction in so intended technological device or their solution by own production and technological process;
- d) properties and control system of technological process and process of emission reduction and system of administration of operational data;
- e) continual monitoring, processing, recording, evaluation of compliance and storage of measurement results of selected technical and operational parameters;
- f) system of maintenance and innovation of production and technological devices and devices for emission reduction;
- g) system of environmental management.

(17) Periods of repeated single authorized measurements may be set for measurement places according to paragraph 12. The periods of repeated single authorized measurements defined in paragraph 13 and Article 13, (11) may be shortened. Prolonged period defined according to paragraph 16 and Article 14, (7) may be changed or issued approval²² may be cancelled at most once in calendar year, or special single authorized measurement may be appointed to carry out, if

- a) it is proposed in final report on assessment of impact of construction to environment or it is justified relative to placing of the source of pollution, or based on the proposal of the Inspection;
- b) assumptions for permanent compliance with emission limit according to paragraph 16, Article 9, (3), (b) and Article 14, (7) are not observed or there are reasonable doubts about a compliance;
- c) there are reasonable doubts about compliance with emission limits, invalidity of technical calculation of emission value is discovered or new facts on possibility of occurrence of other pollutants are discovered, or there are repeated complaints on polluting of environment from the source of pollution.

Article 9

Continual monitoring of emissions

(1) Emission value and quantity of pollutant shall be determined by continual monitoring, if it is for technological sources of pollution provided in paragraph 2 and for selected sources of pollution and selected pollutants provided for in Articles 13 and 14 and at the same time

- a) it is possible to operate the source of pollution or its part according to documentation 1.000 hours and more during calendar year;

- b) it is possible according to present state of the art of continual monitoring of emission for particular pollutant and particular waste gas;
- c) an approval for replacement of continual monitoring by single authorized measurement is not issued;
- d) an approval for determination of emission value by technical calculation is not issued.

(2) Emission value and quantity of pollutant are determined by continual monitoring according to paragraph 1 on the measuring place of technological source of pollution or its part, where mass flow of pollutant is higher than a tenfold of limit mass flow, if emissions of pollutant from given part of source of pollution are reduced in relevant technological device or they may be impacted by controlling of production and technological process.

(3) Continual monitoring of emission value and quantity of pollutant may be replaced according to approval²² by repeated single authorized measurements, if application accompanied with concurring opinion of the Inspection proves, that

- a) determination of correct emission values is not possible according to present state of the art of continual monitoring and direct continual monitoring is not possible to replace by indirect continual monitoring;
- b) emission values of pollutant according to paragraph 4 are lower than values of defined emission limits and assumptions for permanent compliance with emission limit according to Article 8, (16), (a) to (g) are achieved.

(4) Continual monitoring may be replaced by repeated single authorized measurements for combustion plants and for waste incineration plants and waste co-incineration plants only for selected pollutants according to Article 13, (4) and Article 14, (3) and for technological sources of pollution only for pollutants, of which emission limits for selected technologies¹⁴ are not defined.

(5) The possibility of prolongation of periods of repeated single authorized measurements according to Article 8(16) is not for replacement of continual monitoring by single authorized measurement applied.

(6) Values of volume flow, volume concentration of oxygen, pressure, temperature and humidity together with emission values are at the same time continually monitored directly or indirectly, if it is necessary for expression of emission value or determination of emitted quantity of pollutant; continual monitoring of humidity is not necessary, if taken sample of gas is dried before measurement or it is expressed in dry stage by other method according to present state of the art of continual monitoring.

(7) Direct continual monitoring of emission value and quantity of pollutant for technological sources of pollution, volume flow or humidity for all sources of pollution may be replaced according to approval²² by indirect continual monitoring, if application accompanied with concurring opinion of the Inspection proves, that there is unambiguous dependency of values of continually monitored quantity on values of other continually monitored selected technical and operational parameters and measurement accuracy according to method and methodology of measurement of continually monitored parameter corresponding to present state of the art is achieved.

(8) Time of operation, mass flow and emission reduction according to paragraphs 1 and 2 shall be evaluated during issuing of approval²⁰ according to project documentation; mass flow shall be evaluated for nominal capacity. Conditions defined for the time of operation and mass flow according to paragraphs 1 and 2 shall not be after installation of emission monitoring system more applied and monitoring system shall be operated also for shorter time of operation and lower mass flow.

(9) If conditions for determination of emission values by continual monitoring according to paragraphs 1 and 2 are complied and if paragraphs 3 and 11 do not set otherwise, emission monitoring system

shall be installed and continual monitoring shall be carried out from startup operation of source of pollution or its part, or from its startup operation after the change.

(10) Emission monitoring system shall be installed for operational source of pollution or its part in period set by air protection authority, however not later than three years from the year of finding out of the compliance with conditions of installation of continual monitoring according to paragraph 1 and 2; the condition according to paragraph 1(a) is fulfilled, if the time of operation of source of pollution or its part exceeds 1.000 hours per year in two from three consecutive years. The conditions according to paragraphs 1 and 2 are not more applied after installation of monitoring system.

(11) Compliance with conditions of indirect monitoring according to paragraph 7 shall be presented by first entire functional test and conditions of replacement of continual monitoring according to paragraph 3(b) by first single authorized measurement during the startup operation of the source of pollution or emission monitoring system, or their startup operation after the change. In the cases of special severity according to approval²² not later than one year from startup operation of source of pollution or its part, or startup operation of emission monitoring system, or their startup operation after the change.

(12) The operator of source of pollution may determine emission values and quantities of pollutant by emission continual monitoring, even if it is not provided for in paragraphs 1 and 2; the condition of the using of this emission monitoring in administration procedure relating to air protection is the presentation of compliance with conditions according to Articles 11 and 12 and issuing of approval.

Article 10

Continual monitoring of emission

(1) Continual monitoring of values of quantities, by which the limit of polluting substances²⁷ (hereinafter only “polluting value”) is expressed, and related meteorological data are installed and operated by operators of large sources of pollution, mentioned in the list published by special regulation²⁸, if condition of continual monitoring is set in the approval²⁰. The opinion of the Slovak hydro-meteorological institute (hereinafter only “institute”) and state district hygienist²⁹ is supporting document for setting the condition of continual monitoring.

(2) For determination of condition of continual monitoring of polluting values according to paragraph 1, monitored pollutants, number and placing of monitoring places, the account shall be taken for

- a) final opinion of the Ministry in the case of new sources of pollution³⁰;
- b) placing of source of pollution in regions requesting special air protection³¹
- c) application of monitoring system for polluting substances as a part of smog warning and regulation system³²;
- d) condition of polluting and dispersion;
- e) number of citizens touched by polluting substances originated from source of pollution;
- f) quantity and damaging effects of pollutants taken away from the source of pollution and for rate of risk to public health and environment³²;

²⁷ Annex No. 6 of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic.

²⁸ Annex No. 1, part A and Annex No. 5 of the Act No. 127/1994 Coll. of the National Council of the Slovak Republic on environmental impact assessment in the wording of the Act No. 391/2000 Coll.

²⁹ The Act No. 272/1994 Coll. of the National Council of the Slovak Republic on Public Health Protection.

The Order No. 122/1993 Coll. of the Ministry of Environment of the Slovak Republic on definition of areas requiring special air protection and on operation of smog warning and regulatory systems in the wording of the Order No. 103/1995 Coll. of the Ministry of the Environment of the Slovak Republic.

³⁰ The Act No. 127/1994 Coll. of the Ministry of Environment of the Slovak Republic.

³¹ The Order No. 112/1993 Coll. of the Ministry of Environment of the Slovak Republic.

The Order No. 116/1996 Coll. of the Ministry of Health of the Slovak Republic on parameters enabling to declare climatic conditions as beneficial for cure and on the method of their declaration.

³² The Order No. 112/1993 Coll. of the Ministry of Environment of the Slovak Republic in the wording of the Order No. 103/1995 Coll. of the Ministry of Environment of the Slovak Republic.

- g) possibilities of state of the art of polluting substance measurement method and adequacy of costs for installation of polluting substance monitoring system;
- h) territorial and functional connection of several selected large sources of pollution according to paragraph 1;
- i) evaluation of results of timely limited authorized measurement of polluting substances according to paragraph 3, if it was defined.

(3) In order to verify the need of continual monitoring of polluting substances according to paragraph 1 and the feasibility of placing or number of monitoring places, it is possible to set in the approval²⁰ timely limited authorized measurement of polluting substances of

- a) air pollution before startup operation of new source of pollution as well as afterwards;
- b) impact of polluting substances of existing source of air pollution.

(4) Opinion of the Institute is supporting documentation for determination of condition of timely limited authorized measurement of polluting substances; operator of the source of pollution shall submit the evaluation of measurement to air protection authority within three months from its finishing.

(5) Values of continually monitored quantities by monitoring system of polluting substances are be processed, recorded, documented and stored in compliance with present state of the art according to Articles 11 and 12 ranked by importance, with documentation and conditions provided for in approval. The opinion of the Institute is supporting document for appointment of conditions.

(6) The operator of source of pollution may determine polluting values by continual monitoring, even if the condition according to paragraph 1 was not set for him; the condition for using of results of thus polluting substance monitoring for purposes of administration procedure relating to air protection is presentation of compliance with requirement for technical equipment and installation according to Articles 11 and 12 and approval issuing.

(7) Equipment for continual polluting substance monitoring shall be installed for new selected sources of pollution according to paragraph 1

- a) at the same time with startup operation of new source of pollution, if it is not set otherwise in the approval²⁰, not later than three years from startup operation of this source;
- b) in the case of timely limited polluting substance qualified monitoring according to paragraph 3 within three years from definition of condition for continual monitoring.

Article 11

Working features, validity, processing, recording, printing and storage of continual monitoring results

(1) Emission and polluting substance monitoring systems shall be installed in a way that during their installation and operation they comply according to their importance with

- a) requirements according to paragraphs 2 to 6;
- b) conditions of determination, validity and processing of results of continual monitoring of emission values according to Annex No. 1;
- c) requirements according to special regulations³³;
- d) working features according to state of the art of continual monitoring valid in the time of their installation;
- e) condition according to approval of the body of air protection; conditions for emission monitoring system shall be assigned by the body of air protection based on opinion of the Inspection and for polluting substance monitoring system based on opinion of the Institute.

³³ For example the Order No. 112/1993 Coll. of the Ministry of Environment of the Slovak Republic, the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

- (2) If not set otherwise³³ the period of operation of monitoring system according to valid documentation and conditions set by air protection authority must be for
- a) emission monitoring system at least 95% of the time of operation of source of pollution, during which the obligation to comply with defined emission limits is valid and at the same time, for one calendar year, more than ten daily emission values must not be invalid or due to maintenance of monitoring system must not be evaluated;
 - b) polluting substance monitoring systems at least 90% of calendar year or of the time of existence of source of pollution, if this time is shorter than one year.
- (3) Technical evaluation means of monitoring system must enable digital transmission of data in real time as a part of national emission information system or polluting substance monitoring net and smog warning and regulation system according to conditions assigned by air protection authority.
- (4) Monitoring system, its technical calculation and evaluation means depending on its purpose must
- a) be protected against unauthorized changes of constants, calculation factors, real time and other data in compliance with state of the art of continual monitoring in the time of installation of monitoring system;
 - b) ensure recording and entire identification of each change of data according to (a), using alternative values of state and related values including identification of person carrying out whatever change of configuration of monitoring system;
 - c) whenever enable to recall the data according to point b) and data of protocols from continual monitoring from the memory of monitoring system and their print out;
 - d) permanently enable authorized persons³⁴ to recall the data according to (c) from the memory of monitoring system (remotely and locally);
 - e) enable treatment and publication of information on pollution of environment³⁵;
 - f) have upper limit of measurement range for processing of emission values equal to at least to 2.5 multiple of value of emission limit; if present state of the art of continual monitoring allows fullrange measurement and automatic change of range, the mentioned requirement must be fulfilled at least by one measurement range;
 - g) ensure potential-free (simplex) transmission of state signals of operational activity of source of pollution and feedback output signals of monitoring systems, if they are used in the control system of technology;
 - h) ensure signaling, recording of error states and breakdown of power source; in the case of breakdown of power source to ensure saving of all information during the time at least 72 hours;
 - i) be suitable to environment, where are installed.
- (5) The results of continual monitoring shall be recorded in the form of printed protocols from continual monitoring; details of protocols from emission continual monitoring are referred to in the Annex No. 2. Protocols shall be printed in official language and shall be deposited at least four years.
- (6) If the results of continual monitoring are recorded and stored on digital information medium enabling only one data recording, only annual protocols and protocols evaluating breach of emission limit shall be deposited in printed form.

Article 12

Determination of working features of monitoring systems

- (1) Working features of monitoring systems are determined by first entire functional test (hereinafter only “entire test”) and checked by repeated partial functional tests (hereinafter only “partial test”).

³⁴ Article 9 of the Act No. 134/1992 Coll. of the Slovak National Council.

³⁵ The Act No. 211/2000 Coll. on free access to information and on amending of several acts (the Act on freedom of information)

(2) Tests according to paragraph 1 shall be carried out by authorized persons²⁴ according to

- a) paragraphs 5 to 7, Articles 9 to 11 and conditions of carrying out of authorized measurements;
- b) methodologies corresponding to present state of the art of continual monitoring;
- c) valid documentation of monitoring system and conditions of the body of air protection, set.

(3) Entire test of monitoring system shall be carried out for

- a) listing operation of the source of pollution or its part, or monitoring system or after their change;
- b) change of measurement principle of monitoring system;
- c) change of treatment principle of sample of gas;
- d) entire innovation of installed monitoring system;
- e) finding the breach of working features of monitoring system, which are set as normative requirements;
- f) fundamental change of material structure of measured gas due to change of the source of pollution or its part.

(4) If application shows special severity of testing of monitoring system or the need of its modifications, the entire test according to paragraph 3 may be carried out according to the approval²² during testing operation of monitoring system after its mastering (launching), however within one year from issuing of approval.

(5) For entire test of monitoring system

- a) selected working features of monitoring system are determined;
- b) calibration of monitoring system is carried out;
- c) the correctness of at least one point of calibration function by comparison with average value from at least three results of particular measurements realized by reference methodology according to Article 6, (5) is checked;
- d) the compliance with requirements according to Article 6 and Articles 9 to 11, documentation and conditions assigned by the body of air protection is assessed.

(6) For the first entire test of emission monitoring system along with data according to paragraph 5, data are at the same time determined and the compliance with emission limits of monitored pollutants is evaluated.

(7) For partial test of monitoring system

- a) selected working features of monitoring system are determined;
- b) the compliance with valid documentation of monitoring system and conditions assigned by air protection authority is assessed.

(8) Partial tests of monitoring system shall be carried out at least once in calendar year, if documentation or air protection authority shall not assign shorter period. The calibration and revision of at least one point of calibration function by reference methodology according to Article 6(5) shall be carried out at least each three years. The report on partial test of monitoring system shall be submitted to competent body of air protection within 1 month from exam finishing of the test.

Article 13

Heating plants, power plants, heating plants and process combustion plants

(1) The volume concentration of oxygen and emission values for

- a) carbon monoxide;
- b) nitrogen oxides expressed as nitrogen dioxide;
- c) sulfur oxides expressed as sulfur dioxide;
- d) solid pollutants

are determined by continual monitoring during combustion of solid fossil fuels and fuels produced from them for equipment³⁶ of existing and new sources of pollution with nominal thermal input 100 MW and more.

(2) The volume concentration of oxygen and emission values for

- a) carbon monoxide;
- b) nitrogen oxides expressed as nitrogen dioxide;
- c) gaseous organic pollutants expressed as total organic carbon;
- d) solid pollutants

are determined by continual monitoring during combustion of wood, bark, and wooden waste and other material of vegetal nature (bio-mass) for equipment of existing and new sources of pollution with nominal thermal input 100 MW and more.

(3) Without prejudice to paragraph 4 the volume concentration of oxygen and emission values are determined by continual monitoring during combustion of liquid fuels, industrial and other low – caloric gases for equipment of existing and new sources of pollution with nominal thermal input 100 MW and more for the following

- a) carbon monoxide;
- b) nitrogen oxides expressed as nitrogen dioxide;
- c) sulfur oxides expressed as sulfur dioxide;
- d) solid pollutants.

(4) Continual monitoring of emission values of pollutants according to paragraph 3(c) and (d) may be replaced by repeated single authorized measurements, if compliance with emission limit of pollutant is achieved without its separation from the waste gases and there are assumptions for its compliance according to Article 8(16)(a), (b) and d) to(g).

(5) The volume concentration of oxygen and emission values are determined by continual monitoring during combustion other gaseous fuels except those mentioned under paragraph 3 for listing operation of existing and new sources of pollution with nominal thermal input 100 MW and more for the following

- a) carbon monoxide;
- b) nitrogen oxides expressed as nitrogen dioxide.

(6) The volume concentration of oxygen and emission values are determined by continual monitoring for gas-turbine with nominal thermal input 50 MW and more for the following

- a) carbon monoxide;
- b) nitrogen oxides expressed as nitrogen dioxide.

(7) If for device with nominal thermal input according to paragraphs 1 to 3 the desulphurization of smokes is used, the determination of emission values of sulfur oxides expressed as sulfur dioxide means continual monitoring of mass concentration and emission level of sulfur oxides expressed as sulfur dioxide.

(8) Continual monitoring of mass concentration and emission level of sulfur oxides, expressed as sulfur dioxide, shall be carried out, if the desulphurization is designed as

- a) individual part of technology, by continual monitoring of the value of percentage proportion of average half-hour amount of mass concentration of sulfur dioxide on the output from desulphurization device and this value on the input of desulphurization device;
- b) integral part of combustion plant, by continual monitoring of the value of percentage proportion of average half-hour amount of mass concentration of sulfur dioxide on the output of combustion plant and mass concentration of sulfur, expressed as sulfur dioxide, on the input of combustion plant.

³⁶ Annex 4, part I, point 1.1 of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic

(9) For calculation of emission level according to paragraph 8(a) the account shall be taken for a) calculation of mass concentrations of sulfur dioxide to the level of equal state and reference conditions;

b) sulfur capture in the fly ash, if after calculation to sulfur dioxide is higher than 5%.

c) delay of gas stream between measurement places, if necessary.

(10) When application accompanied with concurring opinion of the Inspection proves, that even taking to account the possibility to shorten time of determination of average half-hour amount according to Annex 1, point 5 other measurement place is better as it is mentioned in Article 6(6) data on compliance with emission limits may be determined according to the approval²² by

a) weighted mean of emission values in exhausting piping of several apparatuses;

b) weighted mean of emission limits³⁷ in common exhaust conduction to the air;

c) combination of methods according to point a) and b).

(11) Emission values shall be determined by repeated single authorized measurement, if paragraphs 1 to 6 and 13 do not provide otherwise, at least once in

a) three years for plant with nominal thermal input

1. from 15 MW, which burns liquid fuels with sulfur content 0.2% and lower and gaseous fuels;

2. from 5 MW, which burns liquid fuels with sulfur content higher 0.2% and solid fuels;

b) six years for plant with nominal thermal input from 0.3 MW

1. to 15 MW, which burns liquid fuels with sulfur content 0.2% and lower and gaseous fuels;

2. to 5 MW, which burns liquid fuels with sulfur content higher 0.2% and solid fuels.

(12) For integrated fuel combustion device (boiler – gas-turbine) and for combustion of several types of fuels at the same time in one device, the period of repeated authorized measurements according to paragraph 11, which is defined by total nominal thermal input of integrated apparatuses and type of fuel with highest share on thermal input of device, is valid. Shorter period is applied in the case of equal share of thermal inputs.

(13) For combustion of natural gas, coal gas, propane-butane and liquid fuels with content of sulfur 0.2% and lower, emission values for solid pollutants and sulfur oxides expressed as sulfur dioxide are not determined without prejudice to the compliance with defined emission limits, possibility of technical calculation of emission value for other fuels and other pollutants and Article 8

(17).

Article 14

Waste incineration plant and waste co-incineration plant

(1) For waste incineration plant and waste co-incineration plant³⁸, if paragraphs 3 and 4 do not provide otherwise, the continual monitoring shall determine emission values for

a) solid pollutants;

b) carbon monoxide;

c) nitrogen oxides expressed as nitrogen dioxide;

d) organic pollutants in the form of gases and steams expressed as total organic carbon;

e) sulfur oxides expressed as sulfur dioxide or emission level of sulfur oxides expressed as sulfur dioxide;

f) gaseous compounds of chlorine expressed as hydrochloride;

g) gaseous compounds of fluorine expressed as hydrofluoride.

³⁷ Article 9, paragraph 3 and Annex 4, part I, paragraph 1.8.2.1(a) of the Regulation No. 92/1996 Coll. of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

³⁸ Annex 4, part V of the Regulation No. 92/1996 of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic.

- (2) For waste incineration plant and waste co-incineration plant, the continual monitoring shall be determined
- a) volume concentration of oxygen, pressure and temperature in measurement place of emission values;
 - b) temperature of waste gases on internal side of burning room behind last input of the air³⁸;
 - c) humidity of waste gases in measurement point of emission value, if taken sample of waste gases is not dried before measurement or it is not expressed to dry stage by other method according to present state of the art of continual monitoring.
- (3) Continual monitoring of emission values of pollutants according to paragraph 1(e) to (g) may be replaced by repeated single authorized measurements, if highest emission values do not exceed the value of emission limit regarding to material structure of waste, nature and technology of their origin, pretreatment and sorting of waste and assumptions according to Article 8, (16).
- (4) In the case of waste co-incineration plants conditions of continual monitoring mentioned under paragraphs 1 to 3 and at the same time conditions defined for particular device, in which the waste is incinerated together with other fuels and raw materials, shall be applied.
- (5) If installed monitoring system of waste co-incineration plant allows continually monitoring of emission values for pollutants pursuant to paragraphs 1 and 2, even if the waste is not incinerated in corresponding devices.
- (6) Determination of emission values of heavy metals, dioxins and selected gaseous pollutants according to paragraph 3 shall be carried out by repeated single authorized measurements for waste incineration plant and waste co-incineration plant at least once in three months during first year of operation and at least once in six months during next years of operation, unless paragraph 7 provides for otherwise.
- (7) Repeated single authorized measurements of heavy metals may be authorized according to the approval²² once in two years instead of two times per year and of dioxins and pollutants according to paragraph 3 instead of two times per year once in year, if application accompanied with concurring opinion of the Inspection and single authorized measurements during first year of operation prove, that highest emission values of pollutant do not exceed 50% of the value of defined emission limit and there are assumptions for its permanent compliance regarding to material structure of waste, nature and technologies of their origin, pretreatment and sorting of waste and assumptions according to Article 8, (16)(a) to (g).
- (8) Detention time, minimal temperature and content of oxygen in waste gases behind the last input of combustion air³⁸ shall be determined by qualified method in periods and conditions according to Article 8(10)that means at least favorable conditions expected from the viewpoint of kind and quantity of incinerated waste. In reasonable cases according to Article 8(17) the detention time, minimal temperature and content of oxygen in waste gases shall be determined repeatedly.
- (9) For waste incineration plant and waste co-incineration plant incinerating according to approval less than 50 t of waste per year, the determination of emission values shall be carried out by repeated single authorized measurements and determination of parameters according to (8) only if it is provided in Article 8(17).

Article 15

Determination, data monitoring and presentation of compliance with general operational conditions

(1) General operational conditions¹³ shall be determined, monitored and their compliance shall be presented, if they are expressed by numerical value and corresponding physical and/or chemical unit.

(2) Conditions of determination, monitoring and presentation of compliance with general operational conditions, which are applied to the structure of technological and waste gases, for example efficiency of separation, are identical with conditions of determination, monitoring and presentation of compliance with emission limits by single authorized measurement.

(3) If period and method of presentation of compliance, conditions and methodology of determination of general operational condition, which have nature of quality sign of fuel, for example sulfur content or other numerically expressed quantity, as it is reversible share of steams, are not set by special regulations³⁹ nor in the approval of the body of air protection, nor in valid documentation,

a) value of general operational condition shall be determined by method, which relates to present state of the art of measurement of corresponding quantity;

b) value of general operational condition shall be determined by person authorized for given activity or authorized by the producer of given device;

c) compliance with general operational condition shall be presented by report from corresponding measurement during startup operation of source of pollution or its part or their startup operation after the change and repeatedly at least once in three years; the report from corresponding measurement shall be attached to data on compliance with defined emission limits.

Article 16

Temporary provisions

(1) If certain pollutant is not classified to the group B⁴⁰, or if paragraphs 3 and 4 do not provide for otherwise, for existing sources of pollution, for which conditions of determination of emission values and quantity of emitted pollutants by continual monitoring are fulfilled, the monitoring system shall be installed or existing monitoring system shall be synchronized to conditions according to Articles 9, 11 and 12 and conditions of replacement according to Article 9(3) shall be presented not later

a) 31st December 2003 for

1. waste incineration plants and waste co-incineration plants with nominal capacity higher than 3 t of incinerated municipal waste per hour and higher than 0.5 t of special waste and hazardous waste per hour; hospital waste is not considered as special waste and hazardous waste for this purpose, if their share in waste (Article 6(3)) from the viewpoint of incineration and separation of hazardous components³⁸ is not important.

2. devices for combustion of solid fossil fuels and fuels produced from them and liquid fuels with sulfur content higher than 1% of nominal thermal input 100 MW and more;

b) 31st December 2005 for

1. devices for combustion of liquid fuels with sulfur content 1% and less, wood, bark, wooden waste and other material of vegetal nature (bio-mass) of nominal thermal input 100 MW and more;

2. devices for combustion of industrial and other low-caloric gases of nominal thermal input 100 MW and more;

3. devices for combustion of other gaseous fuels, as mentioned under indent 2, of nominal thermal input 172 MW and more;

4. gas-turbines of nominal thermal input 50 MW and more;

5. other large technological sources of pollution;

³⁹ For example Annexes 3 a 4 of the Regulation No. 92/1996 of the Government of the Slovak Republic in the wording of the Regulation No. 473/2000 Coll. of the Government of the Slovak Republic, the Order No. 200/1999 Coll. of the Ministry of the Environment of the Slovak Republic on requirements for administration of operational data of sources of pollution and o scope of other data, which are operators of sources of pollution obliged to submit to the body of air protection, the Order No. 144/2000 of the Ministry of the Environment of the Slovak Republic on requirements on fuel quality and on administration of operational data and kind, scope and method of data presentation to the body of air protection.

⁴⁰ Article 20a, (2) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic and the Act No. 393/1998 Coll.

c) 31st December 2006 for waste incineration plants and waste co-incineration plants with nominal capacity equal or lower than pursuant to (a) first point;

d) 31st December 2007 for

1. devices for combustion of other gaseous fuels, pursuant to (b), second point, of nominal thermal input from 100 MW to 172 MW;

2. medium technological sources of pollution;

(2) For new waste incineration plants and waste co-incineration plants with nominal capacity lower than 3 t of incinerated municipal waste per hour and higher than 0.5 t of special waste and hazardous waste per hour activated until 31st December 2005 the emission values and quantity of emitted pollutants shall be determined by continual monitoring from 1st January 2007.

(3) If in case of existing source of pollution or its part the change is realized in order to achieve defined limits of pollution before periods according to paragraph 1, the monitoring system shall be installed in this occasion²⁶.

(4) The periods according to paragraph 1 shall not be applied, if operator of the source of pollution submits to the relevant air protection authority within defined period an application for non-installation of emission monitoring system with attached report on single authorized measurement carried out in the year of application submission, updated data⁴¹ and declaration on word of honor, that existing construction or part of existing source of pollution will be liquidated⁴² or modernized⁴³. If the source of pollution or its part is operational after the term of planned liquidation or is not modernized, the monitoring system shall be installed within one year from the term of planned liquidation or modernization. The periods of repeated single authorized measurements of pollutants classified to the group A⁴⁴ are once per calendar year until the time of liquidation or modernization of the source, or installation of monitoring system.

(5) For emission monitoring systems, for which approval for installation is issued to 31st December 2001,

a) the term of repeated partial exam according to Article 12(8) at least once in three calendar years applies;

b) the condition of most ten invalid or not evaluated daily emission value according to Article 11 (2)(a) shall not apply

until 31st December 2006

(6) Without prejudice to paragraph 9 to 11, existing technological and power sources of pollution, for which the conditions of determination of emission values and quantity of emitted pollutants by technical calculation or first single authorized measurement are fulfilled, the emission values and individual emission factors shall not be determined later as following

a) 31st December 2001 for large sources of pollution;

b) 31st December 2003 for medium sources of pollution.

(7) For existing waste incineration plants and waste co-incineration plants, unless paragraphs 9 to 11 set otherwise, the emission values and individual emission factors shall be determined by first single authorized measurement until

a) 31st December 2002 for other pollutants as dioxins and furans;

b) 31st December 2006 for dioxins and furans; this term is applied also for new sources of pollution, for which the proceeding on approval issuing for construction shall began till 1st January 2002.

⁴¹ Article 20, (4) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic and the Act No. 393/1998 Coll.

⁴² For example Article 88 of the Act No. 50/1976 Coll. on territorial planning and building code (Building Code) as amended.

⁴³ Article 6, (5) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic.

⁴⁴ Article 20, (3) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic and the Act No. 393/1998 Coll.

(8) Periods of first single authorized measurement according to paragraphs 6 and 7 shall be applied also for existing sources of pollution, where the conditions of determination of emission values and quantity of pollutant by continual monitoring are fulfilled; this is not applied when in periods according to paragraphs 6 a 7 approval for installation of corresponding monitoring system is issued or application for omission of authorized measurement according to paragraph 11 is submitted. The terms of repeated single authorized measurements shall start from first authorized measurement.

(9) For existing sources of pollution, their parts and backup systems including backup fuels, which are not operational at all or more than 360 hours per year, the emission value shall be determined by first single authorized measurement during first startup operation of a part of the source of pollution or for the use of backup fuel.

(10) First single authorized measurement of emission value of pollutant classified to the group B⁴⁵ may be according to the approval²² replaced by determination of its value by technical calculation also for other cases pursuant to Article 7, if application accompanied with qualified technical analysis and concurring opinion of the Inspection proves impossibility to comply with defined emission limit.

(11) The terms of first single authorized measurements according to paragraphs 6 to 8 shall not be applied, if at least one pollutant in measurement place is classified to the group B⁴⁵ and operator of the source of pollution submits an application for omission to the competent air protection authority in the term of carrying out first single authorized measurement. He attaches to the application updated data⁴¹ and declaration on word of honor, that existing construction or part of existing source of pollution will be liquidated⁴² or modernized⁴³ within two years from the year of application submission. If the source of pollution or its part is operational after the term of planned liquidation or is not modernized, the first single authorized measurement shall be carried out within 30 days from the term of planned liquidation or modernization.

(12) Quantity of pollutants shall be determined by qualified analysis for existing sources of pollution after this Decree enters into force; if the condition of determination of quantity of pollutants by continual monitoring or single authorized measurement is applied, the quantity of pollutant shall be determined by qualified analysis until its determination by defined method.

(13) Operators of existing sources of pollution, of which production and other similar capacity assessed according to documentation is the same as it is mentioned in the list published by special regulation²⁸ or is higher, based on notification of air protection authority⁴⁶, they shall submit application of approval on installation or issuing of decision on non-installation of monitoring system for polluting substances; to the application they shall attach reasoning containing evaluation of assumptions for installation or non-installation of monitoring system for polluting substances according to Article 10(2)

(14) If the condition of determination of emission values by continual monitoring for existing sources of pollution according to paragraph 13 is assigned, the monitoring system for polluting substances shall be installed within three years from determination of condition for permanent continual monitoring.

(15) For monitoring systems of polluting substances, for which the approval for installation is issued to 31st December 2001, the period of operation of monitoring system for polluting substances according to valid documentation and conditions defined by the body of air protection shall be longer than 85% of the calendar year; the condition of 90% according to Article 11(2)(b) shall be applied for these systems from 1st January 2004.

⁴⁵ Article 20a, paragraph 1 of the Act No. 309/1991 Coll. in the wording of the Act No. 393/1998 Coll. and the Act No. 459/2000 Coll.

⁴⁶ Article 11, paragraph 1, (c) of the Act No. 309/1991 Coll. in the wording of the Act No. 148/1994 Coll. of the National Council of the Slovak Republic and the Act No. 459/2000 Coll.

(16) For the sources of pollution, where general operational condition, of which value is determined and presented by measurement is defined, the value of general operational condition shall be determined and presented

- a) during assigned operation of existing sources of pollution after the change²⁶, which complies with general operational conditions for new sources of pollution¹³;
- b) for other existing sources of pollution except those mentioned under point a) within period of validity of general operational condition for new sources of pollution¹³;
- c) for new sources of pollution activated to 31st December 2002 until 31st December 2004.

Article 17

Abolishing provision

The Decree No. 41/1997 Coll. of the Ministry of the Environment of the Slovak Republic on determination of quantity of emitted pollutants and data on compliance with defined limits of pollution is abolished.

Article 18

Entry into force

This Decree shall enter into force on 1st January 2001.

László Miklós, sign manual

CONDITIONS OF DETERMINATION, VALIDITY AND PROCESSING OF RESULTS OF CONTINUAL MONITORING OF EMISSION VALUES

1. Continually monitored emission value expressed as mass concentration, mass flow or emission level shall be determined and processed as individual mean values and as average daily values (hereinafter only "daily value"). If emission limit is expressed as emission factor, only daily values shall be processed and recorded.
2. Particular mean values shall be determined as average values of measured quantity for time interval according to conditions for compliance with emission limit defined by the Regulation of Government implementing the Act on Air, or for other permitted time interval (4 and 5). Particular mean values shall be determined during stabilized operation of the source of pollution; starting and finishing at operation time of the source of pollution, during which obligation to comply with emission limits is valid.
3. During starting and finishing of time measurement of individual mean value the first value in calendar day shall be processed the value starting at midnight (from 0.00 h) or starting with first evaluated time interval, during which time of the source is operational, where the obligation to comply with emission limits is valid, two third and more of determination time for individual average value (point 6); similar way of processing is for the last value in calendar day.
4. Time interval for determination of individual mean value other than defined is possible according to the approval possible in cases, if present state of the art of continual monitoring of emissions does not allow to determine exact value of measured value for defined time interval.
5. Defined time interval for determination of individual mean value for technological and power sources of pollution may be shortened at most to one half for measurement of emission values
 - a) on two close measurement places of one source of pollution or its part;
 - b) of gases with similar and adequately stabile composition;
 - c) if present state of the art of continual monitoring enables it;
 - d) if system of continual sampling of gas and alternate measurement ensure determination of representative value of measured quantity for whole defined interval.
6. Particular mean values are valid, if
 - a) they are determined as average values for two thirds and more of time of mean value determination in case of analogue method of signal processing from monitoring system and in case of similar method of measurement;
 - b) they are calculated as arithmetic mean from at least two thirds of partial valid data for interval (digital) method of processing of measured signal and time between intervals of signal processing is maximum three minutes and in the case of 10-minutes interval maximum one minute, unless for special cases according to the state of the art of technique other interval is indispensable;
 - c) calculations to standard state and reference conditions or calculations of mass flow are made on the base of timely corresponding mean values of simultaneously measured values of state and related values and volume flow of waste gas, unless for reasonable cases other procedure is applied according to (d);
 - d) the calculations according to (c) were made using alternative values of corresponding quantities in compliance with documentation and conditions defined by the body of air protection and operator of the source of pollution reasoned legitimacy of their use;
 - e) operation, working features of monitoring system and calculations are in compliance with documentation and conditions defined by the body of air protection;

f) neither value of 95% of intervals of reliability of individual average result is higher than requirement defined by the Regulation of Government implementing the Act on Air; this is valid for indirect monitoring of emission values of pollutants and volume flow of waste gas accordingly, however if it is possible, the value 95% of interval of reliability of volume flow measurement should not be higher than 30% of usual value.

7. Particular average values for nitrogen oxides expressed as nitrogen dioxide, determined only from the value for nitrogen monoxide, are valid after calculation to nitrogen dioxide and after calculation of the share of nitrogen dioxide, if the share of nitrogen dioxide on total quantity of nitrogen oxides expressed as nitrogen dioxide (hereinafter only “share of nitrogen dioxide”) is at the same time for regimes of stabilized operation permitted by documentation

- a) 20% and less;
- b) sufficiently constant.

8. Point 7 is valid for continual monitoring or other method of determination of thermal inputs in order to calculate weighted mean of emission limits of apparatuses or their groups.

9. Daily values of mass concentration, mass flow and emission level shall be determined as arithmetic mean of individual average values. Daily values of emission factor shall be determined as average values for the time of stabilized operation of the source of pollution for particular day.

10. Daily values are for the purposes of evaluation of compliance with emission limit valid, if they are determined from valid individual average values according to point 6 and number of valid individual average values corresponds to at least 50% of the operational time of the source of pollution, when the obligation to comply with emission limits for particular day is valid, however there must not be more than five individual average emission values invalid due to for example breakdown, revision and maintenance of monitoring system or more than five particular average emission values not evaluated due to maintenance of monitoring system.

11. Provision of point 6 and 10 shall not be applied, if the Regulation of the Government implementing the Act on Air for selected technology and selected pollutant sets other conditions for validity of particular mean value, daily value or accuracy of measurement.

DETAILS OF PROTOCOLS ON CONTINUAL MONITORING OF EMISSION VALUES

1. Protocols printed and stored for a day according to the conditions of evaluation of compliance with emission limit defined by the Regulation of the Government implementing the Act on Air and conditions set by air protection authority shall contain
a) particular average values in consecutive order, starting with first evaluated value and giving time and material identification of value:
 1. equal and lower than value of emission limit increased by coefficient of reliability interval (only time identification);
 2. higher than upper limitation according to point 1 and lower or equal to defined multiple of value of emission limit, which (multiple) is increased by coefficient of reliability interval; if for the condition of compliance with emission limit more multiples are defined, individual average values shall be split and identified according to defined conditions;
 3. higher than upper limitation according to point 2 or 1, if condition of compliance with emission limit according to point 2 are not assigned;
 4. for calculation of which alternate values of state and reference parameters were used;
 5. defined by qualified analysis according to Article 5(3)(k) and mentioned in documentation of monitoring system (invalid value according to Annex 1(6));
- b) identification of time intervals of determination of particular average values according to Article 2(3), (b) to (e), according to phases of monitoring system, according to fee regimes according to the Act on fees for air pollution and total operational time;
- c) particular average values of capacity in consecutive order starting with first evaluated individual average value in classification according to types of fuels or products;
- d) average daily value and its identification, if it is higher than value of emission limit or it is invalid (Annex 1, point 10);
- e) data on technical and operational parameters, thermal inputs and other constants used for calculation and evaluation of compliance of modified weighted mean of defined emission limits, if they are determined;
- f) reasoning of the use of alternate values of state and related value and individual average value determined by qualified analysis;
- g) identification data and codes of persons entitled to change constants and parameters of monitoring system in classification according to performed changes;
- h) identification of protocol, identification data of the operator of the source of pollution, source of air pollution, part of the source of pollution, device and measurement place;
- i) identification of monitored pollutants, emission limits and modified weighted means of emission limits, which timely correspond to individual average values, if they are determined;
- j) values of conversion coefficients, coefficients of reliability intervals, coefficients of tolerance intervals and their changes including the time of their setting;
- k) number of individual average values not exceeding the value of emission limit or defined multiple of the value of emission limit, and their share on total number of valid particular average values, if this condition of compliance with emission limit is assigned;
- l) number of particular average values exceeding the value of emission limit or defined multiple of the value of emission limit, and their share on total number of valid particular average values, if this condition of compliance with emission limit is assigned;
- m) number of valid and invalid particular average values and share of invalid values on total operational time of the source of pollution, where obligation to comply with defined emission limit is valid [Article 11, (2), (a)];
- n) average values of state and reference parameters, volume flow and capacity;
- o) quantity of emitted pollutant in classification according to payment regimes and data necessary for its calculation, especially weighted average concentration of pollutant, volume of emitted waste gases, quantity of combusted fuel according to the type, quantity of product, quantity of other related value;

- p) data necessary for administration of operational data according to the Decree on requirement for administration of operational data of the sources of pollution and on the scope of other data, which operators of sources of pollution are obliged to submit to the body of air protection, if they are determined by continual monitoring;
- q) other data according to documentation and conditions defined by the body of air protection.

2. Protocols printed and stored for calendar month according to the conditions for evaluation of compliance with emission limit defined by the Regulation of the Government implementing the Act on Air and conditions assigned by air protection authority shall contain

- a) daily values starting with first day of calendar month in consecutive order and giving time and material identification of daily value
 - 1. being equal or lower than the value of emission limit (only time limitation);
 - 2. being higher than the value of emission limit;
 - 3. for calculation of which insufficient number of valid individual average values was used (Annex 1, point 10);
- b) total operational time and other times according to Article 2, (3), (b) to (e) in classification according to days and overall for a month;
- c) average emission value and its identification in the case of breach of condition for emission limit, which is evaluated for a month;
- d) number of valid and invalid daily values;
- e) number of daily values not exceeding the value of emission limit or defined multiple of emission limit, and their share on total number of valid daily values, if this condition of compliance with emission limit is set;
- f) number of daily values exceeding the value of emission limit or defined multiple of emission limit, and their share on total number of valid daily values, if this condition of compliance with emission limit is set;
- g) data according to firstpoint, (h) to q) for calendar month.

3. Protocols printed and stored for an year according to the conditions for evaluation of compliance with emission limit defined by the Regulation of the Government implementing the Act on Air and conditions set by the body of air protection shall contain

- a) average emission values for a month starting with first month of calendar year and their identification in the case of breach of condition for emission limit, which is evaluated for a month;
- b) average emission values for an year and its identification in the case of breach of condition for emission limit, which is evaluated for an year;
- c) total time of stabilized operation and other times according to Article 2, (3)(b) to e) in classification according to months and overall for an year;
- d) data according to first point, (f) to (q) for calendar year;
- e) data according to secondpoint, (d) to (f) for calendar year.