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**REGULATION**  
**of the Ministry of Environment of the Slovak Republic**

dated 31<sup>st</sup> January 1997

**on ascertaining of amounts of contaminating substances and data on meeting specified limits of contamination**

The Ministry of the Environment of the Slovak Republic (hereinafter only “Ministry”) under Article 17 par. b Act of the Slovak National Council No. 134/1992 Coll. on state administration of the protection of ambient air in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll. has provided as follows:

Article 1  
Subject of Adjustment

This Regulation regulates

- a) Ascertaining of amounts of discharged contaminating substances
- b) Manner and conditions of ascertaining and monitoring of data on meeting specified emission limits
- c) requirements for technical facilities for monitoring of emissions and immisions of substances contaminating ambient air and for the time limits of ensuring them

Ascertaining of Amounts of Discharged Contaminating Substances

Article 2  
General Conditions for Ascertaining of Amounts of Discharged Contaminating Substance

- (1) The total amount of contaminating substance discharged from the source of contamination into ambient air (hereinafter only “amount of contaminating substance” is being ascertained as a sum of amounts of this substance that were discharged into ambient air during
- a) settled operation of the source of contaminating of ambient air in the course of which the technical and operational parameters are maintained in conformity with the documentation, <sup>1)</sup> except for operational states provided in a special regulation <sup>2)</sup> (hereinafter only “settled operation”).
  - b) operational states provided by a special regulation <sup>2)</sup> and other necessary states, in the course of which the technical and operational parameters are co-ordinated with the documentation <sup>1)</sup> or other activities are performed connected with operation, renovation or repairs of technical-operational facilities,
  - c) of dangerous sources of the source of contamination of ambient air endangering the ambient air quality, <sup>3)</sup> in the course of which the technical-operational parameters of technology are not in harmony with documentation and which in a way provided in the documentation can be immediately co-ordinated without the necessity of extraordinary technical and operational or technical and organisation measures,

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<sup>1)</sup> Article 2 par. 3 Governmental Decree of the Slovak Republic No. 92/1996 Coll. on the basis of which the Act No. 309/1991 Coll. on Protection of Ambient Air against Contaminating Substances (Ambient Air Act) in wording of later regulations is executed.

<sup>2)</sup> Article 9 par. 4 letter a), b), c), d), f), and g) of the Regulation of the Slovak Republic No. 92/1996 Coll.

<sup>3)</sup> Article 7 par. 1 letter f) Act No. 309/1991 Coll. on Protection of Ambient Air against Contaminating Substances (Ambient Air Act) in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

- d) states of accident of the source of contaminating of ambient air (accidents),<sup>4)</sup> which appeared, when the dangerous states under letter c) were not immediately removed
- e) serious and imminent endangering or worsening of the quality of ambient air <sup>5)</sup> defined in the set of technical-operational parameters and technical operational measures for ensuring of the protection of ambient air, <sup>6)</sup> which appeared by violating of the regulations in case of the state under letter d) and as a consequence of other extraordinary events not caused by the operator and in which case it is necessary to inform the public that it is endangered, <sup>5)</sup> in which the technology was really in operation or which, during the period of ascertaining of amount of contaminating substance, really happened.

(2) The amount of contaminating substance appearing in waste gases is being ascertained if

- a) the contaminating substance is entered in the list of contaminating substances under special regulation <sup>7)</sup> or
- b) the conditions of protection of the environment have been specified for the contaminating substance. <sup>8)</sup>

(3) The methods of ascertaining of the amount of contaminating substance are as follows :

- a) continual monitoring with use of technical means for monitoring of emissions of substances contaminating ambient air <sup>9)</sup> (hereinafter only “monitoring system”)
- b) calculation with use of individual emission factors ascertained by one time measurement
- c) qualified analysis
- d) combinations of previous methods

(4) The places of ascertaining of the amount of contaminating substance by measuring under paragraph 3 letter a) and b) are places of technological pipelines, stacks and out-blows (hereinafter only “pipeline”), in which

- a) the change in composition of substances of waste gases does not appear any more and
- b) the state of technology of measuring of emissions <sup>10)</sup> enables to ascertain the correct mean value of the flow of substance of contaminating substance.

(5) If the state of technology does not enable to measure the flow of substance under par. 4 letter b) meeting of the conditions of exclusion of the change in the material composition is not necessary.

### Article 3

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<sup>4)</sup> Article 7 par. 1 letter f) and Article 7 par. 2 Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>5)</sup> Article 7 par. 1 letter h) Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>6)</sup> Article 7 par. 2 Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>7)</sup> Annex No. 1 Governmental Decree of the Slovak Republic No. 92/1996 Coll. Part A of the Annex of the Act of the Slovak National Council No. 311/1992 Coll. on Fees for Contaminating of Ambient Air.

<sup>8)</sup> Article 11 par. 5 Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>9)</sup> Article 7 par. 1 letter i) Act No. 309 / 1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>10)</sup> Article 2 paragraph 3 of the Decree of the Ministry of Environment of the Slovak Republic No. 299/1995 Coll. on Conditions for Awarding of Authorisation for Execution of Measurements of Emissions and Immissions and on Principles of Execution of this Activity.

## Ascertaining of the Amount of Contaminating Substance by Continual Monitoring

- (1) The amount of contaminating substance is being ascertained by continual monitoring in cases provided in Article 7 par. 1 to 3.
- (2) It is possible to ascertain the amount of contaminating substance also by continual monitoring of another selected technical - operational constant under the conditions provided in Article 7 par. 6 to 9.
- (3) The operator of the source of contamination can ascertain the amount of contaminating substance by continual monitoring also in other cases than provided in Article 7 par. 1 to 3. After the installation of monitoring system the ascertaining of the amount of contaminating substance by continual monitoring is being carried out permanently.
- (4) During the operation of monitoring system in harmony with documentation other methods of ascertaining of the amount of contaminating substance discharged into environment by appropriate pipeline are not applied.

## Article 4

### Ascertaining of the Amount of Contaminating Substance with Use of Individual Emission Factors Ascertained by One Time Measurement

- (1) In case of big sources of contamination the amount of contaminating substance is being ascertained according to the states under Article 2 par. 1 letter a) by calculation with use of individual emission factors (hereinafter only “ individual factor”), if
  - a) ascertaining of the amount of contaminating substance is not specified under Article 3
  - b) the amount of contaminating substance is not ascertained by balance calculation under Article 5 par. 2 letter b).
  - c) ascertaining of the correct values of individual factors is made possible by the present state of the technology of one time measuring of emissions (Article 2 par. 4),
  - d) the amount of contaminating substance discharged by the pipeline is bigger than provided in paragraph 2.
- (2) Individual factors are not being ascertained by one time measurement, if the operator of the source of contamination proves on the basis of technical analysis that the amount of contaminating substance <sup>11)</sup> discharged by a concrete pipeline is not per year higher than the following data
  - a) 10 t of solid contaminating substances
  - b) 20 t of oxides of sulphur expressed as sulphur dioxide
  - c) 20 t of oxides of nitrogen expressed as nitrogen dioxide
  - d) 50 t of carbon monoxide
  - e) 1 t of contaminating substance included into the 1<sup>st</sup> rate class
  - f) 2 t of contaminating substance included into the 2<sup>nd</sup> rate class
  - g) 2 t of contaminating substance, which is not included into the rate classes
  - h) 4 t of contaminating substance included into the 3<sup>rd</sup> rate class
  - i) 20 t of contaminating substance included into 4<sup>th</sup> rate class

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<sup>11)</sup> Part A of the Annex of the Act of the Slovak National Council No. 311/1992 Coll.

- (3) In case of doubts, meeting of the condition under paragraph 2 is being ascertained by the first one time measurement and is proved by the report from the measurement <sup>12)</sup> and by a professional expertise issued by the person authorised under special regulation, <sup>13)</sup> if it will be requested by the institution of state administration of the protection of ambient air. <sup>14)</sup>
- (4) Individual factors are expressed as weight of concrete discharged contaminating substance falling for example on
- unit of the consumed raw material
  - unit of the burnt fuel
  - unit of production or amount of products
  - time unit of settled operation
  - batch (charge)
  - another parameter according to the property of concrete technology to which the weight of the discharged contaminating substance relates (hereinafter only “relational constant”).
- (5) If it is made possible by the properties of technology, the individual factor for concrete contaminating substance is being ascertained as the division of the weight of contaminating substance discharged into the ambient air by all pipelines during the settled operation of the source of contamination and timely corresponding to the summary value of relational constant at such average values of technical - operational constants, so that the ascertained value of individual factor be representative.
- (6) If the properties of technology or technical-organisational conditions of the operation of the source of contamination do not make it possible to find out one representative value of individual factor under paragraph 5, then appropriate number of partial individual factors, which represent the selected span of the values of technical-operation constants, is being ascertained for a concrete contaminating substance and for the whole source of contamination.
- (7) The amount of contaminating substance discharged during settled operation is calculated as linkage of individual factor and a summary value of relational constant during the time, during which the amount of contaminating substance is being ascertained. If several partial individual factors under paragraph 6 are being ascertained, then the amount of contaminating substance is calculated as the sum of amounts of contaminating substance discharged during concrete states of settled operation.
- (8) The values of individual factors are being ascertained as follows :
- by the first measurement in case of putting of new big sources of contamination into operation or in putting of new or existing big sources of contamination into operation after execution of an alteration, <sup>15)</sup> however not later than within one year from putting them into operation [Article 9 par. 4 letter c)]
  - by the first measurement in case of existing big sources of contamination within the time limit provided in Article 15 par. 6
  - by repeated measurement in case of

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<sup>12)</sup> Regulation of the Ministry of the Environment of the Slovak Republic No. 299/1995 Coll.

<sup>13)</sup> Regulation of the Ministry of Environment of the Slovak Republic No. 111/1993 Coll. on Issuing of Professional Expertises on the matters of Protection of Ambient Air or Waste, Appointing of Persons Authorised for Issuing of Expertises and on Verifying of &professional competence of these Persons in wording of the Regulation of the Ministry of the Environment of the Slovak Republic No. 53/1995 Coll.

<sup>14)</sup> Article 11 par. 2 Act No. 309/1991 Coll. in wording of the Act No. 218/1992 Coll. and Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>15)</sup> Article 11 par. 1 letter g) of the Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

1. big sources of contamination for combustion of fuels at least once within four years
2. other big sources of contamination except for those that are entered in the first item, at least once within three years

(9) The values of individual factors are ascertained by an authorised person by means of measurement according to the methodologies corresponding to the present state of the technology for measurements of emissions.

(10) With use of individual factors the amount of contaminating substance can also be ascertained by

- a) an operator of a big source of contamination during other states, such as in case of a settled operation or in case a smaller amount of contaminating substance than provided in paragraph 2
- b) an operator of a medium source of contamination, if all conditions of ascertaining of the amount of contaminating substance have not been met under Article 3.

The individual factor is valid during the period during which the technology of a concrete source of contamination has not changed, however not longer than five years.

## Article 5

### Ascertaining of an amount of contaminating Substance by Means of a Qualified Analysis

(1) The amount of contaminating substance is being ascertained by a qualified analysis in the following cases :

- a) in medium size sources of contamination if the conditions of ascertaining of the amount of contaminating substance under Article 3 have not been met
- b) in big sources of contamination if the conditions of ascertaining of the amount of contaminating substance under Article 3 have been met
- c) in big sources of contamination during states under Article 2 par. 1 letter b) to e)
- d) in case that the installed monitoring system is out of operation or when the value of measured constant is out of measuring scope of monitoring system
- e) if the amount of contaminating substance discharged through a concrete pipeline is not higher than provided in Article 4 par. 2

(2) In qualified analysis the amount of contaminating substance is ascertained by procedures in this Regulation :

- a) by continual monitoring by means of an existing monitoring system until the time of demonstration of its accord with this Regulation and with the present state of technology (Article 15 par. 1).
- b) by balance calculation using definite emission dependencies under paragraph 3
- c) in existing big sources of contamination by calculation using individual factors ascertained by other than authorised persons, however not longer than until 31<sup>st</sup> December 2000.
- d) in existing medium size sources of contamination by calculation using individual factors ascertained by other than authorised persons, however not longer than until 31<sup>st</sup> December 2000.
- e) by balance calculation using the general emission dependencies, which are published by the Ministry in its official journal
- f) by balance calculation using the general emission factors, which are published by the Ministry in its official journal
- g) by balance calculation using the methods of approximation, by comparison and analysis of individual factors ascertained for other operational states of concrete technology than are those, during which the amount of contaminating substance which is being discharged is being ascertained
- h) by weight-balance procedure on the basis of other measured technical - operational constants
- i) by methods of comparison of similar and related sources of contamination and processes

- j) by calculation on the basis of other published emission factors and supporting materials
- k) by extrapolation from time and shape of measured signal, if the measured value is outside the measuring scope of the monitoring system
- l) by other suitable procedure which results from the properties of technology of the concrete source of contamination.

(3) The emission dependence under paragraph 2 letter b) is explicit if

- a) separators are not used in the technology
- b) if it is possible to express it by functional relation between the amount of discharged contaminating substance and the selected technical-operational constant,
- c) functional relation under letter b) does not depend on the mode of operation
- d) the value of the selected technical-operational constant under letter b) is being ascertained using the method according to the approved documentation.

## Ascertaining of Data on Meeting the Specified Emission Limits

### Article 6

#### General Conditions of Ascertaining of Emission Values

- (1) Ascertaining of data on meeting the specified emission limits is executed by ascertaining of emission values <sup>16)</sup> for ascertaining substances, for which the emission limits have been specified <sup>17)</sup> and for the darkness of the smoke. <sup>18)</sup> Emission values are not being ascertained for contaminating substances, in which it is apparent that they do not appear in waste gases and in cases provided in Article 10 par. 17.
- (2) Unless provided in Article 10 par. 17 otherwise emission values are being ascertained as follows :
  - a) by continual monitoring <sup>19)</sup> or
  - b) by one time measuring <sup>20)</sup>
- (3) Continual monitoring and one time measurement are executed using methods and according to methodologies which relate to a specified emission limit and they are entered in the published by the Ministry in its official journal. <sup>21)</sup>
- (4) The place of ascertaining of emission values is such place of the source of contamination or of its part, for which the emission limit has been specified <sup>22)</sup> and in which it is possible to ascertain the correct value of the measured constant (hereinafter only “place of measurement”) in conformity with paragraph 3, unless provided otherwise in Article 9 par. 4 and in Article 10 par. 14.
- (5) The working characteristics of emission monitoring systems and emission values are ascertained by the operator of the source by one time measurement through authorised persons.

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<sup>16)</sup> Article 9 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>17)</sup> Annexes No. 3 and 4 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>18)</sup> Annex No. 4 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>19)</sup> Article 9 par. 1 and Article 5 letter a) of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>20)</sup> Article 9 par. 2, Article 9 par. 5 letter b) and Article 9 par 6 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>21)</sup> Article 2 par. 4 of the Regulation of the Ministry of the Environment of the Slovak Republic No.299/1995 Coll.

<sup>22)</sup> Article 4 par. 5 and 6 and Annex No. 4 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

- (6) Upon notification of the beginning of one measurements time the operator of the source of contamination shall notify the planned date of the beginning of one measurements to the territorially respective inspectorate of the protection of ambient air of the Slovak Inspection of the Environment <sup>23)</sup> (hereinafter only “inspection”) at least ten working days before the planned beginning; should the planned date of measurement change, the real date of measurement shall be notified at least two working days before its beginning.
- (7) Providing evidence of meeting the specified emission limits shall be carried out by attaching the documents under paragraph 8 to the application for issuing of the approval of the institution of the protection of ambient air <sup>24)</sup> or to notification of data on meeting the specified emission limits. <sup>25)</sup>
- (8) In dependence on the method of ascertaining of emission values and the purpose of proceedings the operator shall attach to the application or notification under paragraph 7 as follows :
- a) protocols from monthly assessments of continual monitoring, protocol from the whole year evaluation of continual monitoring and data preserved in information carrier under Article 8,
  - b) report from one time measurement, <sup>12)</sup>
  - c) in the years, in which he is not liable to carry out a repeated one time measurement, a brief assessment of the state of technology with emphasis on facts, which could lead to the change of emission values ascertained in previous measurement
  - d) if the emission value is expressed as an emission factor, in dependence on the method of ascertaining of the amount of discharged contaminating substance the following shall be attached
    1. supporting materials and complete calculation of discharged amounts of contaminating substance from the source of contamination in all states of settled operation
    2. summary values of relational constant for individual operational states of settled operation (first item).
    3. annual summary value of relational value
  - e) other data according to the documentation or specified as a condition by the institution of the protection of the environment.

### Common Conditions of Continual Monitoring

#### Article 7

- (1) The emission values are being ascertained by continual monitoring if at the same time :
- a) according to documentation the source of contamination can be operated 1000 hours and more in one calendar year
  - b) for a concrete contaminating substance and the concrete waste gas this is made possible by the present state of technology of measuring of emissions (paragraph 11)  
namely for selected sources of contamination and selected contaminating substances provided in Article 10 or in Article 11, or the conditions entered in paragraph 2 or in paragraph 3 are met.
- (2) If it is not provided otherwise for sources of contamination in paragraph 3 and in Article 10 and 11, emission values are ascertained by continual monitoring on each place of measurement , in which during

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<sup>23)</sup> Article 3 of the Act of the Slovak National Council No. 134/1992 Coll. on State Administration of the Protection of Ambient Air in wording of the Act of the National Council of the Slovak Republic No. 1488/1994 Coll.

<sup>24)</sup> Article 11 par. 1 Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>25)</sup> Article 10 of the Act of the Slovak National Council No. 134/1992 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

1000 hours and more in one calendar year the weight flow of concrete contaminating substance is higher than

- a) five multiple of the weight flow specified as generally valid emission limit for new sources of contamination for the second and third subgroup of organic gases and vapours, <sup>26)</sup>
  - b) ten multiple of the weight flow specified as generally valid emission limit for new sources of contamination for other contaminating substances except for those that are entered in letter a). <sup>26)</sup>
- (3) Unless for the sources of contamination provided in Article 10 and 11 otherwise, emission values of carbon monoxide are by continual monitoring ascertained in each place of measurement of the sources of contamination, for which the special regulation has set the emission limit for carbon monoxide. 18)
- (4) Upon issuing of approval under special regulation the time of operation and weight flow (paragraphs 1 and 2) are assessed according to design documentation. After installation of monitoring system ascertaining of emission values by continual monitoring will be executed on permanent basis; the conditions specified for time of operation and weight flow under paragraph 1 and 2 shall no be applied any more after installation of the monitoring system.
- (5) The values of state and reference constants are monitored at the same time with emission values. If the emission limit is expressed as a weight flow and an emission factor and under paragraph 8 an approval for ascertaining of the value of volume flow of gas by other method has not been issued, then also the value of this constant is being continually monitored.
- (6) If the operator of the source of contamination proves that there is an explicit dependence between the emission constant and the selected technical-operational constant then it is possible in other sources of contamination and contaminating substances except for those that are entered in paragraph 3 and in Article 10 and 11, on the basis of the agreement of the institution of the protection of ambient air, issued after requesting of the standpoint of the inspection to replace the continual monitoring of emission values for concrete contaminating substance by continual monitoring of values of another technical-operational value.
- (7) The dependence between an emission constant and another selected technical-operational constant under paragraph 6 is explicit, if the extended uncertainty of measuring of emission value on the level of emission limit is with 95% reliability 20% and less.
- (8) If the operator of the source of contamination proves that the condition of explicitness under paragraph 7 has been fulfilled, on the basis of the approval of the institution of the protection of environment issued after requesting of the comments of the inspection, the continual monitoring of volume flow can be replaced by another method of its ascertaining (paragraph 5).
- (9) According to paragraphs 6 and 7 the provisions of this Regulation on continual monitoring of the emission value apply mutatis mutandis to continual monitoring of the values of the selected technical-operational constant.
- (10) The emission values can be ascertained by the operator of the source of contamination by continual monitoring also in such case, when this method of ascertaining of emission values has not been provided for the concrete source of contamination in paragraphs 1 to 3. After installation of the monitoring system the continual monitoring is carried out on permanent basis.

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<sup>26)</sup> Annex No. 3 of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

(11) If the operator of the source of contamination proves that it is not possible to

- a) meet the condition of measurement under paragraph 1 letter b) and at the same time
- b) to replace continual monitoring of the emission value for concrete contaminating substance by continual monitoring of the values of another selected technical-operational constant and fulfilling the condition under paragraph 7,

the institution of the protection of ambient air shall in an approval, after requesting the comments of the inspection, specify the condition of ascertaining of emission values by one time measurement under Article 9.

(12) The conditions according to paragraphs 6, 7, 8 and 11 are demonstrated in case of new sources of contamination or in case of changes of new and existing sources of contamination in a manner under Article 4 par. 3 upon putting the source of contamination into operation or upon putting of the source of contamination into operation after its change. In cases of special demandingness on the basis of the approval of the body of protection of ambient air not later than within one year after putting the source of contamination into operation or after putting of the source of contamination into operation after its change.

#### Article 8

- (1) Conditions of ascertaining, processing, noting, printing and preserving of the results of emission monitoring measurements are entered in annex No. 1.
- (2) The protocols and other data under annex No. 1 of the thirteenth and fourteenth item are being printed and preserved in the national language.

#### Article 9

##### Common Conditions of One -Time Measurement

- (1) The data on meeting the specified emission limits are ascertained by one time measurements in the following cases :
  - a) if the method of ascertaining of the amount of contaminating substance has not been specified under Article 7 par. 1 to 3.
  - b) if it has been stipulated so by the body of the protection of environment in conformity with Article 7 par. 11
  - c) if ascertaining of correct emission values is made possible by the condition of technology of measurement of emissions (Article 6 par. 3 and 4).
- (2) If it has not been stipulated otherwise in a special regulation <sup>18)</sup> or in an approval of the body of the protection of ambient air under paragraph 4 the measurement of mass concentration, mass flow, emission degree and darkness of smoke is being carried out in such mode of settled operation, in which the assumed emission values are the highest. If these modes for more contaminating substances are different the measurement is being carried out with at least 0,9 multiple of the nominal output. The condition of the highest emission value or at least 0,9 multiple of the nominal output do not apply to the check measurement of the inspection. The obligation to meet the emission limits in all modes of the settled operation, which are permitted in the documentation, has not been affected by this.
- (3) A number of emission values that are being ascertained and other conditions of one time measurement will be specified in conformity with methodologies to which the specified emission limits apply, <sup>21)</sup> by an authorised person, who is performing a one-time measurement.

(4) If the operator of the source of contamination proves that it is not possible

- a) to meet the conditions of measurement under paragraph 2 not even in case of exhausting of all accessible technical and technical-organisation possibilities for their preparation
- b) to meet the uncertainty of the measurement under the methodology relating to the specified emission limit,<sup>21)</sup>
- c) to ascertain representative emission values during trial operation of the new source of contamination or during test operation after change of new or existing source of contamination,

the special conditions of measurement will be specified by a body of the protection of ambient air, which shall require the comments of from the inspection before issuing of an approval.

(5) The data on meeting the emission limits are being ascertained as follows :

- a) by the first one time measurement upon putting of the new sources of contamination into operation<sup>27)</sup> and upon introducing of new and existing sources of contamination into operation after their alteration,<sup>15)</sup>
- b) by repeated one time measurement within the time limits provided for selected sources of contamination under Article 10 and 11 and for other sources of contamination under par. 6.
- c) in cases under paragraph 4 letter c) not later than within one year from putting the source of contamination into operation or from putting of the sources of contamination into operation after its alteration.

(6) In other sources of contamination except for those that are entered in Articles 10 and 11, ascertaining of data on meeting emission limits is being carried out by repeated one time measurement at least once within

- a) three years in big sources of contamination
- b) five years in medium size sources of contamination

#### Article 10

##### Heat Plants, Power Plants, Heating Plants and Facilities for Process Firing

(1) In combustion of solid fossil fuels and fuels made from them , if they are the facilities with summary nominal output of boilers 50 MW inclusive and higher, which according to the documentation can be operated simultaneously (hereinafter only “summary nominal thermal output”), by continual monitoring the volume concentration of oxygen is being ascertained and emission values for the following :

- a) solid contaminating substances
- b) oxides of sulphur expressed as sulphur dioxide
- c) oxides of nitrogen expressed as nitrogen oxide
- d) carbon monoxide

(2) In firing of wood, wood waste and other solid fuels of vegetable origin in facilities with summary nominal thermal output 75 MW inclusive and higher, using the continual monitoring, the volume concentration of oxygen and emission values are being ascertained for

- a) solid contaminating substances
- b) oxides of nitrogen expressed as nitrogen oxide
- c) organic substances in the form of gases and vapours expressed as total nitrogen
- d) carbon monoxide

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<sup>27)</sup> Article 11 par. 1 a) Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

- (3) In firing of liquid fossil and other liquid fuels with 1% sulphur contents and lower in facilities with summary nominal thermal output 100 MW inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- oxides of nitrogen expressed as nitrogen oxide
  - carbon monoxide
- (4) In firing of liquid fuels with sulphur contents higher than 1% in facilities with summary nominal thermal output 100 MW inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- solid contaminating substances
  - oxides of sulphur expressed as sulphur dioxide
  - oxides of nitrogen expressed as nitrogen oxide
  - carbon monoxide
- (5) In firing of refinery, coke and other low heating industrial gases in facilities with summary nominal thermal output 100 MW inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- oxides of sulphur expressed as sulphur dioxide
  - oxides of nitrogen expressed as nitrogen oxide
  - carbon monoxide
- (6) In firing of industrial gases from steel production in facilities with summary nominal thermal output 100 MW inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- solid contaminating substances
  - oxides of nitrogen expressed as nitrogen oxide
  - carbon monoxide
- (7) In firing of other gaseous fuels except for those entered in par. 5 and 6 in facilities with summary nominal thermal output 150 MW inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- oxides of nitrogen expressed as nitrogen oxide
  - carbon monoxide
- (8) In gas turbines with volume flow of flue gases at nominal output of  $60\,000\text{ m}^3\cdot\text{h}^{-1}$  inclusive and higher using the continual monitoring the volume concentration of oxygen and emission values are being ascertained for
- carbon monoxide
  - oxides of nitrogen expressed as nitrogen oxide
- If the liquid fuel is being fired with the contents of sulphur higher than 1% and the set thermal input at firing of such fuel is higher than 30% of the total thermal input of the turbine, the emission values also for oxides of sulphur expressed as sulphur dioxide are being ascertained; the volume flow of flue gases is assessed under standard state conditions and under 15% of volume reference contents of oxygen.
- (9) If the boilers which incinerate various kinds of fuel have a common place of discharge of flue gases, the condition of continual monitoring has been met, if the sum of quotients of nominal thermal outputs of boilers firing the same fuel and nominal thermal outputs specified in paragraphs 1 to 7 for individual kinds of fuel is one and more. In case of combination of the boiler and the gas turbine the volume flow of

flue gases, which corresponds to the amount of fuel burnt in a gas turbine, will be divided by volume flow  $60\,000\text{ m}^3\cdot\text{h}^{-1}$ .

- (10) After meeting the condition of continual monitoring under paragraph 9 the emission values for contaminating substances specified in paragraphs 1 to 8 are being ascertained according to the kind of used fuels.
- (11) If in facilities with summary nominal thermal output use desulphuration of flue gasses under previous paragraphs, ascertaining of emission values of oxides of sulphur expressed as sulphur dioxide is understood to be continual monitoring of weight concentration and the degree of emission of oxides of sulphur expressed as sulphur dioxide.
- (12) Continual monitoring of weight concentration and emission degree of oxides of sulphur expressed as sulphur dioxide is being carried out if the desulphuration is solved as :
- independent part of technology by continual ascertaining of the value of percentual relation of medium half hour value of weight concentration of sulphur dioxide on the exit from desulphuration facility and on the entrance into desulphuration facility
  - a part of facility for firing of fuels by continual ascertaining of the value of percentual relation of medium half hour value of weight flow of sulphur expressed as sulphur dioxide on the entrance into firing facility
- (13) During calculation of emission degree under paragraph 12 letter a) the following is taken into consideration
- recalculation of weight concentrations of sulphur dioxide on the same state and reference conditions
  - trapping of sulphur in the ashes, if after recalculation in relation to sulphur dioxide it is higher than 5%
  - if necessary also temporal delay of gas flow between the places of measurement
- (14) If the operator of the source of contamination proves that also after taking into consideration the possibility of shortening of time for ascertaining of medium half hour value according to annex No. 1 of the fifth item another measuring point is advantageous than the place entered in Article 6 par. 4, the body of the protection of ambient air can, after requiring the comments from the inspection, issue an approval for ascertaining of data on meeting the emission limits using the method of weighed average of emission limits of the groups of boilers <sup>28)</sup>
- in the off-gas pipe line of more boilers that fire various kinds of fuel or
  - in the discharge of flue gases into ambient air
- (15) If it is not provided otherwise for the selected facility for firing of fuels in paragraphs 1 to 10 and in paragraph 17, the emission values are being ascertained by repeated one time measurement at least once in
- two years for facilities with summary nominal thermal capacity from 50 MW inclusive and higher and in case of gas turbines
  - three years for facilities with summary nominal thermal capacity from 15 MW inclusive to 50 MW, which burn liquid fuels with contents of sulphur 1% inclusive and lower and gaseous fuels
  - three years for facilities with summary nominal thermal output from 5 MW inclusive to 50 MW, which burn liquid fuels with contents of sulphur higher than 1% and solid fuels
  - five years for facilities with summary nominal thermal output from 0,2 MW inclusive
    - up to 15 MW, which burn liquid fuels with contents of sulphur 1% inclusive and lower and gaseous fuels
    - up to 5 MW, which burn liquid fuels with contents of sulphur higher than 1% and solid fuels

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<sup>28)</sup> Article 9 par. 3 and annex No. 4 part I item 1.8.2.1 letter a) of the Decree of the Government of the Slovak Republic No. 92/1996 Coll.

- (16) In case of integrated facilities for firing of fuels (boiler - gas turbine) the deadline under paragraph 15 letter a) applies for ascertaining of emission values by repeated one time measurement. In case of firing of several kinds of fuels simultaneously the deadline under paragraph 15 applies, which is determined by summary nominal thermal capacity and by that kind of fuel, the share of which in thermal input is the biggest. In case of the same share of thermal inputs the shorter deadline applies.
- (17) In case of firing of natural gas, coal gas, bottled gas and liquid fuels with contents of sulphur 0,2% inclusive and lower the emission values for facilities with summary nominal thermal output from 0,2 MW inclusive to 15 MW are not being ascertained for
- solid contaminating substances
  - oxides of sulphur expressed as sulphur dioxide
- The obligation to meet the emission limits <sup>29)</sup> in all modes of settled operation, which are permitted in the documentation has not been affected by this.

#### Article 11 Facilities for Burning of Waste

- (1) In facilities for burning of waste with the designed capacity higher than 3 t of burnt communal waste for an hour and higher than 0,1 t of special and dangerous waste for an hour using the continual monitoring the volume concentration of oxygen in the combustion space after the last infeed of air is being ascertained <sup>30)</sup> unless in paragraphs 3 and 4 provided otherwise by continual monitoring the emission values are being ascertained for
- solid contaminating substances
  - oxides of nitrogen expressed as nitrogen pentoxide
  - organic substances in the form of gasses and vapours expressed as total carbon
  - oxides of sulphur expressed as sulphur dioxide or emission degree of oxides of sulphur expressed as sulphur dioxide
  - gaseous compounds of chlorine expressed as hydrogen chloride
  - gaseous compounds of fluorine expressed as hydrogen fluoride
- (2) In all facilities for burning of waste and in burning of waste in other facilities than refuse incinerating plants (paragraph 4) by continual monitoring the following is being ascertained
- emission values for carbon monoxide
  - volume concentration of oxygen in the place of measuring of emission values
  - temperature of flue gases in the combustion after the last infeed of air. <sup>30)</sup>
- (3) If the operator of the source of contamination, using the method under Article 4 par. 3, proves that the emission values of contaminating substances under paragraph 1 letter d) to f) increased by the value of the module of extended uncertainty of one time measurement under interval of reliability 95% are because of
- material composition of waste
  - properties and ensuring of management of firing and separating process
  - continual monitoring of the selected technical and operational values lower than the values of specified emission limits, the data on meeting them for these contaminating substances are being ascertained by one time measurement according to paragraph 6.

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<sup>29)</sup> Article 7 par. 1 letter b) Act No. 309/1991 Coll. in wording of the Act of the National Council of the Slovak Republic No. 148/1994 Coll.

<sup>30)</sup> Annex No. 4 part V of the Governmental Decree of the Slovak Republic No. 92/1996 Coll.

- (4) For burning of waste in other facilities than refuse incineratory plants apply conditions of continual monitoring
- entered in paragraphs 1 and 3 if according to the valid documentation it is permitted to burn waste 500 hours and more during one calendar year
  - entered in paragraph 2
  - specified for a concrete facility, in which the waste is being burnt
- (5) After installing the monitoring system and fulfilling the condition under paragraph 4 letter a) at the same time the emission values for contaminating substances specified in paragraphs 1 and 2 are being ascertained also at that time when, the waste is not being burnt in these facilities. Upon fulfilling of condition under letter c) the emission values are being ascertained by continual monitoring under Article 7 and 10 also in that case, if it is allowed to burn the waste less than 500 hours during a calendar year.
- (6) The ascertaining of emission values by repeated one time measurement is being carried out in case of burning of
- special and dangerous waste containing high stable organic substances at least once in two months during the first year of operation and at least once in six months in the following year of operation
  - communal waste with the capacity higher than 1 t an hour and in case of burning of other special and dangerous waste than is entered in subpar a), at least once a year
  - communal waste with the capacity 1 t an hour inclusive and lower at least once within two years.

### Continual Monitoring of Emissions

#### Article 12

- (1) The continual monitoring of the values of quantities, by which the emission limit is expressed <sup>31)</sup> (hereinafter only “emission value”) and connected meteorological data are installed and operated by operators of big sources of contamination of ambient air, which are entered in the list issued by a special regulation, <sup>32)</sup> if the condition of continual monitoring has been specified in the approval by an institution of protection of ambient air. The ground for specification of the condition of continual monitoring is the standpoint of the Slovak Hydrometeorological Institute (hereinafter only “institute”) and state district hygienist. <sup>33)</sup>
- (2) In specification of the condition of continual monitoring of emission values under paragraph 1, number and location of measuring places of monitoring system a particularly the following into consideration
- conclusive standpoint of the ministry in case of new sources of contamination, <sup>34)</sup>
  - location of the source of contamination in areas requiring special protection of ambient air, <sup>35)</sup>
  - application of emission monitoring system as a part of smog warning and regulation system, <sup>36)</sup>

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<sup>31)</sup> Annex No. 6 Governmental Decree of the Slovak Republic No. 92/1996 Coll.

<sup>32)</sup> Annex No. 1 part A and Annex No. 5 of the Act of the National council of the Slovak Republic No. 127/1994 Coll. on Assessment of impacts on the Environment

<sup>33)</sup> Act of the National Council of the Slovak Republic No. 272/1994 Coll. on Protection of Health of People

<sup>34)</sup> Act of the National Council of the Slovak Republic No. 127/1994 Coll.

<sup>35)</sup> Regulation of the Ministry of Environment of the Slovak Republic No. 112/1993 Coll. on Delimiting of Areas Requiring Special Protection of Ambient Air and on Operation of Smog Warning and Regulation Systems in wording of the Regulation of the Ministry of Environment of the Slovak Republic No. 103/1995 Coll.

Regulation of the Ministry of Health of the Slovak Republic No. 116/1996 Coll. on Parameters under which it is possible declare climatic conditions as favourable for treatment and on the way of their Promulgation

<sup>36)</sup> Regulation of the Ministry of Environment of the Slovak Republic No. 112/1993 Coll.

- d) imission-dispersion conditions
- e) number of inhabitants affected by imissions originating from the source of contamination
- f) amount and harmful effects of contaminating substances discharged from the source of contamination and the degree of risk of endangering of the health of population and the environment, <sup>36)</sup>
- g) possibilities of the state of technology of measuring imissions and adequacy of the costs for installation and operation of imission monitoring system,
- h) spatial and functional interconnection of several selected big sources of contamination under par. 1
- i) evaluation of results of timely limited one time imission measurement under paragraph 3.

- (3) For the purposes of verification of the need of continual monitoring of imissions according to paragraph 1 and the suitability of location or number of measuring points the institution of the protection of ambient air can in the approval specify the condition of temporally limited one time imission measurement
- a) of contamination of ambient air before putting the new source of contamination into operation and after it,
  - b) of imission affects of the existing source of contamination of ambient air

The ground for specification of the condition of continual monitoring is the standpoint of the institute. The evaluation of the preliminary continual monitoring shall be submitted by the operator of the source of contamination to the institution of the protection of ambient air within three months from its end.

- (4) By imission monitoring system the continual monitoring values of quantities are being processed, recorded, documented and preserved in accordance with the documentation, with the present state of technology and with other conditions specified by the institution of the protection of ambient air, whereas the conditions stated in Annex No. 1 are being taken into consideration according to their material significance. The ground for specification of the conditions is the standpoint of the institute.

- (5) The operator of the source of contamination can ascertain by continual monitoring the imission values although if the condition under paragraph has not been specified. The condition of utilisation of results of such imission monitoring for the purposes of proceedings in the matters of protection of environment is an approval of the institution of protection of ambient air for installation of imission monitoring system.

## Requirements on Monitoring Systems and on the Deadline of their Provision

### Article 13

#### Requirements for Technical Facilities and

#### for their Installation

- (1) Emission and imission monitoring systems are being installed so that during their installation and during their operation they fulfil working characteristics according to the state of technology of measurement applicable in the time of their installation and other requirements entered in annex No.2.
- (2) Ascertaining of working characteristics of the monitoring systems is being executed by the first complete functional test (hereinafter only “complete test”) and is being verified by repeated partial functional tests (hereinafter only “partial test”).
- (3) The tests according to paragraph 2 are being executed by authorised persons according to
  - a) methodologies, which correspond to the present state of technology of measuring of emissions and imissions<sup>21)</sup> for the installed monitoring system

- b) documentation and conditions specified in the approval of the institution of the protection of ambient air; before issuing of conditions the institution of the protection of environment shall require the comments from the inspection in case of monitoring of emissions and from the institution in case of monitoring of imissions.
- (4) The complete test of the monitoring system is being carried out within the trial operation of the source of contamination or within trial operation of the monitoring system; in cases of special demandingness of testing of the monitoring system on the basis of the approval of the institution of protection of ambient air not later than within one year from putting the source of contamination into operation or from the time of installation of the monitoring system
- (5) During the complete test of the monitoring system the following is done :
- the selected working characteristics of the monitoring system are being ascertained
  - the calibration of the monitoring system is being executed
  - the correctness of at least one item of calibration function in comparison with the average value from at least three results of individual measurements executed by reference methodology is being verified, <sup>21)</sup>
  - the concordance with technical regulations, documentation, conditions specified by the institution of the protection of ambient air and this Regulation is being judged
- (6) In case of partial test of the monitoring system the following is done :
- the selected working characteristics of the monitoring system are being ascertained
  - the concordance under paragraph 5 letter d) is being judged
- (7) If one of the following items happens
- change in the principle of measuring of monitoring system
  - change in the principle of the modification of the gas sample
  - complete renovation of the installed monitoring system
  - ascertaining of infringing of working characteristics of the monitoring system, which have been specified as normative requirements
  - principle change of material composition of the measured gas as a result of the change of the source of contamination, <sup>15)</sup>
- the testing of the monitoring system shall be executed within the range of complete test under paragraph 5
- (8) The partial tests of the monitoring system are being executed within the limits specified in the documentation, however at least once in three years. the report on partial tests of the monitoring system under paragraph 6 and on the test under paragraph 7 shall be submitted by the operator of the monitoring system to the institution of the protection of ambient air in the time limit within one month from the end of the tests.

#### Article 14

##### Time Limits of Installation of Monitoring Systems

- If in new source of contamination the conditions for ascertaining of emission values by continual monitoring have been fulfilled and in Article 13 par. 4 it is not provided otherwise, the continual monitoring is being executed from putting of new source of contamination into operation.
- The emission monitoring system gets installed and is put into operation not later than within three years from the year of fulfilling conditions of continual monitoring if

- a) in one time measurement under Article 9 par. 5 and 6 or in inspection activities of the inspection the fulfilling of the condition of continual monitoring of emissions under Article 7 par. 2 will be ascertained
- b) in one time measurement under Article 9 par. 5 and Article 11 paragraph 6 or in inspection activities of the inspection not meeting of conditions of ascertaining of emission values by one time measurement under Article 11 paragraph 3 will be ascertained
- c) time of operating of the source will be exceeded from two to three years following after each other
  - 1. 1 000 hours under Article 7 par. 1 to 3
  - 2. 500 hours under Article 11 par. 4
- d) during the test of the monitoring system under Article 13 paragraphs 6 and 7 or during inspecting activities of the inspection not meeting of the condition of the substitution of continual monitoring of emission values for a concrete contaminating material by continual monitoring of the values of another selected technical-operational quantity under Article 7 paragraph 7 or a substitution of continual monitoring of volume flow under Article 7 paragraph 8, or suitability of another measuring place under Article 10 paragraph 14 will be ascertained
- e) the operator in putting of a new source of contamination does not prove or during inspection activities of the inspection not meeting of conditions of the installed monitoring system under Article 7 paragraph 11 will be ascertained.

(3) If upon putting of a new source of contamination the operator does not prove meeting the conditions of

- a) processing of results of emission monitoring measurements under Annex No. 1 of the ninth to eleventh item
- b) substitution of continual monitoring of emission values for a concrete contaminating material by continual monitoring of the values of another technical-operational quantity under Article 7 paragraph 7
- c) substitution of continual monitoring of volume flow under Article 7 paragraph 8
- d) suitability of another measuring place under Article 10 paragraph 14

not later than within one year from discovering of not meeting them, the appropriate part of monitoring system will be additionally installed or the respective part will be modified.

(4) After installation of the monitoring system under paragraphs 2 and 3 ascertaining of emission values and amount of contaminating substances by continual monitoring is being executed permanently.

(5) The facilities for continual monitoring of imissions with new selected sources of contamination under Article 12 paragraph 1 will be installed

- a) at the same time with putting of new source of contamination into operation, unless the institution of the protection of ambient air provides otherwise, however not later than three years from putting of this source to operation
- b) in case of temporally limited of time imission measurement under Article 12 paragraph 3 not later than within three years from specification of the condition of continual monitoring.

## Article 15

### Transient Provisions

(1) If in existing sources of contamination the emission monitoring system has been installed and the conditions of ascertaining of emission values by continual monitoring have been fulfilled, the operator of the source of contamination will prove not later than on 31<sup>st</sup> December 1999 <sup>37)</sup> the concordance of the monitoring system with this Regulation and with the present state of technology; the concordance will be

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<sup>37)</sup> Article 11 paragraph 1 letter c) Act No. 309/1991 Coll. in wording of the Act of the national council of the Slovak Republic No. 148/1994 Coll.

proved by submitting of documentation of monitoring system, report from the complete test under Article 13 paragraph 5 and specialised expertise should the institution of the protection of ambient air request it.

- (2) If the operator of the existing monitoring system does not prove the concordance under paragraph 1, the existing monitoring system will be tuned with this Regulation and with the present state of technology of continual monitoring <sup>21)</sup> not later than on 31<sup>st</sup> December 2001.
- (3) The conditions of substitution of continual monitoring of emission values, volume flow and not installing of the monitoring system under Article 7 paragraph 6, 8 and 11 are being proved with existing sources of contamination using the method under Article 4 paragraph 3 in the time limits provided in paragraph 6.
- (4) Unless in paragraph 5 provided otherwise, in existing sources of contamination, in which emission values and the amount of discharged contaminating substances must be ascertained by continual monitoring, the monitoring system will be installed and special conditions of continual monitoring will be proved in the following cases
  - a) refuse incinerating plants, burning of waste in other facilities and in facilities for burning of high quality fuels with contents of sulphur higher than 1% and solid fuels not later than on 31<sup>st</sup> December 2001,
  - b) facilities for burning of liquid fuels with contents of sulphur 1% inclusive and smaller, gaseous fuels in gas turbines and in other big sources of contamination not later than on 31<sup>st</sup> December 2003,
  - c) medium size sources of contamination not later than on 31<sup>st</sup> December 2005.
- (5) If in existing sources of contamination an alteration will be executed, by means of which the specified limits of contamination will be achieved <sup>38)</sup> before the deadlines provided in paragraph 4, the monitoring system will be installed within execution of this alteration.
- (6) In case of the existing sources of contamination in which
  - a) emission values and individual factors are being ascertained by one time measurement
  - b) emission values are being ascertained by continual monitoring, if the later deadline for installing of the monitoring systems under paragraphs 2 and 4 has been specified
  - c) meeting of conditions are being proved under paragraph 3, emission values, individual factors and values of other connected quantities are being ascertained by one time measurement in the following cases
    1. in case of big sources of contamination until 31<sup>st</sup> December 2000
    2. in case of medium size sources of contamination until 31<sup>st</sup> December 2002.Individual factors will be ascertained for those contaminating substances for which the condition of continual monitoring has not been specified.
- (7) Ascertaining of the amount of contaminating substances by a qualified analysis under Article 5 is being executed in existing sources of contamination from coming of this Regulation into force; if the condition of ascertaining of the amount of contaminating substances by continual monitoring or by one time measurement applies, ascertaining of the amount of contaminating substance will be executed by qualified analysis under Article 5 within the time limit provided in paragraphs 1, 2, 4 and 6.
- (8) The operators of the existing sources of contamination, whose production and other similar capacity assessed according to the documentation is the same as is entered in the list issued in a special regulation, <sup>32)</sup> or higher, upon the invitation of the institution of the protection of ambient air <sup>37)</sup>, will submit the application for approval for installation or for issuing of the decision on not installation of the emission monitoring system; to the application they will attach explanation containing the assessment of conditions for installing (not installing) the monitoring system under Article 1 paragraph 2.

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<sup>38)</sup> Governmental Decree of the Slovak Republic No. 92/1996 Coll.

(9) If the condition of ascertaining of imission values by continual monitoring in existing sources of contamination according to paragraph 8 has been specified, the monitoring system will be installed not later than within three years from specification of the condition of permanent continual monitoring.

#### Article 16

#### Force

this Regulation will come into force on 1<sup>st</sup> March 1997.

**Jozef Zlocha**, sign manual

**Annex No. 1  
to the Regulation No. 41/1997 Coll.**

**CONDITIONS OF ASCERTAINING, PROCESSING, RECORDING, PRINTING AND  
PRESERVATION OF THE RESULTS OF EMISSION MONITORING MEASUREMENTS**

1. Emission values expressed as weight concentration, weight flow or emission degree are being ascertained, processed and recorded as medium half hour values (hereinafter only “daily value”). If the emission limit is expressed as an emission factor, only daily values are being processed and recorded.
2. Half hour values are being ascertained, unless necessary otherwise (the fourth item), as medium values of concrete measured quantity during 30 minutes of the settled operation of the source of contamination, starting and ending by the time of the operation of the source of contamination, during which the obligation to meet the emission limits has been specified. Daily values of weight concentration, weight flow and emission degree are being ascertained as an arithmetic average of half hour values according to the thirteenth item subpar a) of the first to the third item. Daily values of emission factor are being ascertained as medium values for the time of settled operation of the source of contamination for the concrete day.
3. Upon beginning and ending of the time of measurement of half hour value as the first half hour value on the calendar day will be stated half hour value starting from the midnight (from 0,00 hrs.) or from the first whole half hour of the settled operation of the source of contamination (the second item), similarly also the last half hour value on the calendar day will be entered, whereas meeting of conditions under the fourth to fifth item is taken into consideration. The stated provision applies to measuring daily values as appropriate.
4. A different time of ascertaining of half hour value (the second item) than 30 minutes is admissible only in cases, if the present state of technology of continual measuring of emissions does not make it possible to ascertain the correct medium value within 30 minutes and in other cases according to the fifth item. If the necessary time of ascertaining of medium value is other than 30 minutes the nearest possible time must be chosen, however at least 15 minutes and mostly 90 minutes.
5. On the basis of the approval of the institution of protection of ambient air issued after requesting of the standpoint of inspection the time of ascertaining of half hour value can be shortened to 15 minutes (the fourth item) during ascertaining of emission values
  - a) on two close measuring places of one operator
  - b) gases with similar and appropriately stable composition
  - c) if the change of the measuring range of monitoring system (Annex No. 2 the third item, letter. e)) is not necessary
6. Half hour values are valid, if
  - a) they have been ascertained as medium values for two thirds and more time of formation of the medium value in case of analogue manner of processing of signal of the monitoring system and similar method of measuring
  - b) they are calculated as arithmetical average from at least two thirds of partial valid data using the interval (discrete) method of processing of measured signal and the time between the intervals of processing of signal is mostly three minutes, unless in special cases according to the state of technology a different interval is necessary

- c) recalculations to standard state and reference conditions or computations of weight flow shall be executed on the basis of temporally corresponding medium values of parallelly measured values of state and reference quantities and volume flow of waste gas, unless in well founded it is proceeded under letter d)
  - d) recalculations according to letter c) have been executed using alternative values of appropriate quantities in accordance with documentation and conditions specified by the institution of protection of ambient air (after requesting the standpoint of the inspection) and the justification of their use was explained by the operator of the source (the thirteenth item letter g)),
  - e) operation, working characteristics of the monitoring system and recalculations are in accordance with the documentation and conditions specified by the institution of protection of ambient air (after requiring of the comments from the inspection).
7. Daily values for the purposes of assessment of meeting emission limits expressed as weight concentration, weight flow or weight degree are valid, if they have been ascertained during one half and more of time of operation of the source of contamination, during which the obligation to meet the emission limit has been specified and they have been ascertained from the valid half hour values according to the sixth item.
  8. Daily values for the purposes of assessment of meeting emission limits expressed as emission factor are valid, if they have been ascertained during two thirds and more of the time of operation of the source of contamination during which the obligation to meet the emission limit has been specified.
  9. Half hour values for oxides of nitrogen expressed as nitrogen pentoxide ascertained only from values for nitrogen oxide after recalculation to nitrogen pentoxide and after additional calculation of the share of nitrogen pentoxide are valid, if the share of nitrogen pentoxide to the whole amount of oxides of nitrogen expressed as nitrogen pentoxide (hereinafter only "share of the nitrogen pentoxide ") is in the modes of the settled operation permitted by the documentation at the same time
    - a) 20% and less
    - b) adequately constant
  10. In case of continual monitoring of emission values of contaminating substances, which appear in several physical-chemical forms or are being monitored indirectly under Article 7 paragraph 6, the emission values are valid, if the extended uncertainty of measuring of emission value on the level of emission limit is with 95% reliability 20% and less.
  11. The tenth item applies also to continual monitoring or to another method of ascertaining of thermal inputs for the purposes of calculation of weighed average of emission limits of the groups of boilers under Article 10 paragraph 14.
  12. The signals of the monitoring system are being processed in accordance with the documentation and conditions, which after requesting of the comments of the inspection have been specified by the institution of the protection of ambient air. The results of measurements are being recorded in the form of printed protocols (Article 6 paragraph 8 letter a)) and on the suitable information carrier and are preserved for at least four years. If they are being recorded and preserved on the digital information carrier, which enables only one time recording of data with back-up copy, they do not have to be preserved in printed form.
  13. Protocols printed and preserved for one calendar month according to the twelfth item contain at least
    - a) all half hour values of continually monitored quantities, if it has not been made possible otherwise, which express emission limits and other technological quantities (if they are measured according to the tenth

item) in gradual order, starting from the first day of the calendar month, with temporal and material designation of half hour value

1. with value equal and lower than the value of emission limits increased by a coefficient of the interval of reliability (only temporal designation)
2. with a value higher than the upper delimitation according to the first item and lower or equal to 1,2 multiple of the value of emission limit, which (multiple) is enlarged by a coefficient of the interval of reliability.
3. with a value higher than the upper delimitation according to the second item and lower or equal to 2 multiple of the value of emission limit, which is enlarged by a coefficient of the tolerance interval.
4. with a value higher than the upper delimitation according to the third item
5. number and share of half hour values according to the third and fourth item from the total number of half hour values of settled operation during one calendar month
6. in the recalculation of which the alternative values of state and reference quantities were used in division according to the days and their share in the total number of half hour values for a day

stating of the list of all half hour values of quantities in the printed protocol is not necessary, if the half hour values of quantities are recorded in the protocol and preserved on one time information carrier according to the twelfth item; in these cases the data according to the second to the sixth item are entered in the printed protocols

- b) daily values, starting from the first day of the calendar month
- c) monthly average emission value
- d) days and values on which the daily value was higher than the value of the emission limit enlarged by a coefficient of the interval of reliability
- e) total time of operation and other times under Article 2 paragraph 1 letter b) to e) divided according to days and totally for one month
- f) average values of state and reference quantities and volume flow for a month
- g) explanation for use of alternate values of state and reference quantities according to letter a) of the sixth item and according to the sixth item letter d)
- h) data on number of half hour values and daily values, which as a result of not meeting the conditions according to the sixth to eighth item were not included into the set of valid half hour values and daily values and their share in the total time of operation of the source of contamination according to the meaning of annex No. 2 of the first item
- i) data on technical-operational parameters and constants used in calculations connected to assessment of data and meeting the concrete emission limit
- j) modified weighed averages of emission limits, which temporally correspond to ascertained half hour values and daily values, if they are being ascertained under Article 10 paragraph 14
- k) values of recalculated coefficients, coefficients of intervals of reliability, coefficients of tolerance intervals and their changes inclusive time of adjustment and name (code) of the responsible person
- l) identification data and codes of persons authorised to execute changes of constants of the monitoring system, in case they changed according to letter k)
- m) other data according to documentation and conditions specified by the institution of the protection of ambient air after requesting the standpoint of the inspection

14. Protocols printed and preserved according to the twelfth item for a year shall contain at least

- a) monthly average emission values, starting from the first month of the calendar year
- b) yearly average emission value
- c) other data according to documentation and conditions specified by the institution of the protection of ambient air after requesting the comments of the inspection

Monthly protocols according the thirteenth item shall be attached to the yearly protocol.

**Annex No. 2  
to the Regulation No. 41/1997 Coll.**

**OTHER REQUIREMENTS ON THE TECHNICAL FACILITIES FOR MONITORING OF  
EMISSIONS AND IMISSIONS OF SUBSTANCES CONTAMINATING AMBIENT AIR AND THEIR  
INSTALLATION**

1. The period, during which the operation of emission monitoring system is not in conformity with the valid documentation and conditions specified by the institution of the protection of ambient air, must not be longer than 5% from the time of the settled operation of the source of contamination and in case of imission monitoring system longer than 15% from the calendar year or from the time of existing of the source of contamination, if this time is shorter than one year.
2. Technical assessing facilities of the monitoring system must enable electronic transfer of the data in real time into imission or emission monitoring centre according to the conditions specified by the institution of protection of ambient air after requesting the comments from the inspection in case of monitoring of emissions and the institute in case of monitoring of imissions.
3. Monitoring system, its technical recalculating and assessing facilities in dependence on its purpose have to
  - a) be protected against unauthorised changes of constants, recalculating factors, real time and other data in conformity with the latest state of technology in time of installation of the monitoring system
  - b) ensure recording and complete identification of each change in data under subpar a), use of alternative values of state and reference quantities inclusive identification of the person executing whichever change of configuration of the monitoring system
  - c) enable at any time recalling of data under subpar b) and other data according to annex No. 1 of the thirteenth and the fourteenth item from the memory of the monitoring system and their printing
  - d) enable permanently to the authorised persons and institutions of the protection of ambient air recalling the data according to subpar c) from the memory of the monitoring system (remotely or locally)
  - e) have during monitoring of emission values the upper limit of the measuring range equal to 2,5 multiple of the value of emission limit
  - f) ensure potentialless (one way) transfer of state signals on the activity of operation of the source of contamination and feedback outcoming signals of the monitoring system, if they are used in the system of management of technology
  - g) provide signalling, recording of their states of deficiency and fall-out of the source of power supply; in case of the fall-out of power supply to ensure storing of all information for the time of at least 72 hours
  - h) be suitable for the environment in which they have been installed
  - i) fulfil other conditions of installation and operation of the monitoring system according to the approval of the institution of protection of ambient air; the conditions for emission monitoring system will be specified by the institution of protection of ambient air after requesting the standpoint of the inspection and for imission monitoring system after requesting the standpoint of the institution.