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**Rules of**  
**Department of Natural Resources**  
**Division 10—Air Conservation Commission**  
**Chapter 3—Air Pollution Control Rules Specific**  
**to the Outstate Missouri Area**

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**Title 10—DEPARTMENT OF  
NATURAL RESOURCES**

**Division 10—Air Conservation  
Commission**

**Chapter 3—Air Pollution Control Rules  
Specific to the Outstate Missouri Area**

**10 CSR 10-3.010 Auto Exhaust Emission  
Controls**

*PURPOSE: This rule requires proper maintenance of original emission control devices and systems on 1968 and subsequent year motor vehicles.*

(1) Definitions of terms specified in this rule may be found in 10 CSR 10-6.020.

(2) Ignition System and Engine Speed. All 1968 and subsequent model year gasoline-powered motor vehicles shall be maintained so as to be in compliance with the following requirements:

(A) The number of revolutions per minute of an engine while operating at idle speed shall be in accordance with the specifications and determined under conditions published by the manufacturer, but in no case shall the idle speed be less than the minimum specified in the manufacturer's published specifications. Revolutions per minute shall be determined by a tachometer or other device which shall be tested for accuracy and precision at reasonable intervals under those terms and conditions as the staff director may direct;

(B) Ignition timing of an engine shall comply with the published specifications of the manufacturer as determined in accordance with procedures and conditions specified by the manufacturer; and

(C) All cylinders shall be firing.

(3) Crankcase Ventilation System. The positive crankcase ventilation system on all 1968 and subsequent model year gasoline-powered motor vehicles, except motorcycles and motor tricycles, and all 1969 and subsequent model year gasoline-powered motor vehicles, including motorcycles and motor tricycles, shall meet the following requirements:

(A) The plumbing and connections shall be properly connected as installed by the manufacturer and free of obstructions and leakage;

(B) There shall be a negative pressure (suction) at the inlet of the crankcase ventilation valve; and

(C) The crankcase ventilation valve shall be freely operative so as to regulate the flow of gases through the system.

(4) Exhaust Emission Control Systems.

(A) Air Injection Systems. Exhaust emission control air injection systems on those

gasoline-powered motor vehicles so equipped by the manufacturer shall operate so that—

1. The air delivery hoses, connections and air distribution manifold shall be properly connected as installed by the manufacturer and free of obstructions and leakage;

2. The air compressor drive belt tension shall be within manufacturer's specification;

3. There is a positive air flow from the air pump to the air delivery distribution manifold;

4. The check valve prevents any reverse air flow from the air distribution manifold out through the check valve inlet; and

5. The antibackfire valve, gulp-valve, air bypass valve or other similar device with the same function permits the passage of air from the air pump to the exhaust manifold(s), except when the carburetor throttle is closed rapidly from an open position as in deceleration.

(B) Engine Modification Systems. All vacuum control valves, vacuum lines, mechanical linkage, electrical circuits and switches peculiar to certain engine modification systems shall be properly connected as installed on all 1968 and subsequent model year gasoline-powered motor vehicles so equipped by the manufacturer.

(C) The requirements of section (4) shall apply to all gasoline-powered motor vehicles with the following exceptions:

1. Vehicles of 1967 or earlier model year;

2. Vehicles not equipped by the manufacturer with exhaust emission control air injection systems;

3. Commercial vehicles of over one thousand pounds (1,000 lbs.) designed capacity; or

4. Motor vehicles with an engine displacement of less than fifty (50) cubic inches (819.35 cubic centimeters).

*AUTHORITY: section 643.050, RSMo Supp. 1992.\* Original rule filed April 26, 1968, effective May 6, 1968. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978.*

*\*Original authority: 643.050, RSMo 1965, amended 1972, 1992.*

*Op. Atty. Gen. No. 331, Shell (11-15-71). The Missouri Air Conservation Commission does not have any specific authority to require the installation of emission monitoring devices, but does have the authority to require reports from sources of air pollution relating to rate, period of emission and composition of effluent, and to make such information available to the public, unless any such information is "confidential" as defined by section 203.050.4, RSMo 1969.*

**10 CSR 10-3.020 Approval of Planned  
Installations**

(Rescinded April 11, 1980)

*AUTHORITY: section 203.050, RSMo 1978. Original rule filed Sept. 8, 1970, effective Sept. 18, 1970. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Aug. 25, 1972, effective Sept. 4, 1972. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Rescinded: Filed Dec. 10, 1979, effective April 11, 1980.*

*Op. Atty. Gen. No. 331, Shell (11-15-71). The Missouri Air Conservation Commission has the authority under Chapter 203, RSMo 1969, to provide for the equivalent of a construction permit system by promulgating rules to require the submission of plans and specifications for approval before any person may construct any facility which will cause air pollution, but that the commission has no such authority regarding an equivalent permit system for the operation of existing facilities which are the source of air pollution.*

**10 CSR 10-3.030 Open Burning Restrictions**

(Rescinded January 30, 2008)

*AUTHORITY: section 643.050, RSMo Supp. 1997. Original rule filed Sept. 8, 1970, effective Sept. 18, 1970. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed Nov. 9, 1983, effective April 12, 1984. Amended: Filed Jan. 2, 1998, effective Aug. 30, 1998. Rescinded: Filed June 7, 2007, effective Jan. 30, 2008.*

**10 CSR 10-3.040 Incinerators**

(Rescinded December 9, 1991)

*AUTHORITY: section 203.050, RSMo 1986. Original rule filed Sept. 8, 1970, effective Sept. 18, 1970. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed Dec. 15, 1982, effective May 12, 1983. Amended: Filed Oct. 13, 1983, effective March 12, 1984. Rescinded: Filed May 20, 1991, effective Dec. 9, 1991.*

**10 CSR 10-3.050 Restriction of Emission  
of Particulate Matter From Industrial  
Processes**

(Rescinded March 30, 2001)

*AUTHORITY: section 643.050, RSMo Supp. 1998. Original rule filed March 24, 1971,*



effective April 3, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed June 30, 1975, effective July 10, 1975. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed May 12, 1978, effective Oct. 11, 1978. Amended: Filed March 15, 1979, effective Nov. 11, 1979. Amended: Filed Oct. 11, 1983, effective March 12, 1984. Amended: Filed June 15, 1998, effective Jan. 30, 1999. Amended: Filed Feb. 16, 1999, effective Sept. 30, 1999. Emergency amendment filed March 26, 1999, effective April 5, 1999, expired Oct. 1, 1999. Rescinded: Filed Aug. 4, 2000, effective March 30, 2001.

**10 CSR 10-3.060 Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating**

*PURPOSE: This rule restricts the emission of particulate matter from fuel burning equipment used for indirect heating except where 10 CSR 10-6.070 would be applied.*

(1) Application. This rule shall apply throughout Missouri except in the City of St. Louis and St. Charles, St. Louis, Jefferson, Franklin, Clay, Cass, Buchanan, Ray, Jackson, Platte and Greene Counties.

(2) Definitions of terms specified in this rule may be found in 10 CSR 10-6.020.

(3) General Provisions.

(A) This rule applies to installations in which fuel is burned for the primary purpose of producing steam, hot water or hot air or other indirect heating of liquids, gases or solids and in the course of doing so, the products of combustion do not come into direct contact with process materials. Fuels may include for example coal, coke, lignite, coke breeze, gas, fuel oil and wood, but do not include refuse. When any products or by-products of a manufacturing process are burned for the same purpose or in conjunction with any fuel, the same maximum emission limitations shall apply.

(B) The heat content of solid fuels shall be determined as specified in 10 CSR 10-6.040(2). The heat content of liquid hydrocarbon fuels shall be determined as specified in 10 CSR 10-6.040(3).

(C) For purposes of this rule, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack(s). The heat input value used shall be the equipment manufacturer's or designer's guaranteed maximum input, whichever is greater, except in the case of

boilers of ten (10) million British thermal units (Btu) or less the heat input can also be determined by the higher heating value (HHV) of the fuel used at maximum operating conditions. The total heat input of all fuel burning units at a plant or on a premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted.

(D) The amount of particulate matter emitted shall be determined as specified in 10 CSR 10-6.030(5). Any other method which is in accordance with good professional practice may be used with the consent of the staff director.

(E) This rule shall not apply to indirect heating sources subject to the provisions of 10 CSR 10-6.070. However, indirect heat input values from sources that are subject to New Source Performance Standards shall be used in the calculation of Q (the installation's total heat input).

(F) Indirect heating sources requiring permits under 10 CSR 10-6.060 that in turn may require particular air pollution control measures to meet more stringent emission limitations than in this rule shall meet the requirements of 10 CSR 10-6.060 Permits Required.

(4) Emission Limitations for Existing Indirect Heating Sources.

(A) No person may cause, allow or permit the emission of particulate matter from existing indirect heating sources in excess of that specified in the following schedule:

1. If the total equipment heat input has a capacity rating of ten (10) million Btu or less, 0.60 pounds for each million Btu per hour input; or

2. If the total equipment heat input has a capacity rating of ten thousand (10,000) million Btu or more, 0.18 pounds for each million Btu per hour input.

(B) The amount of particulate matter which may be emitted from fuel burning equipment having an intermediate capacity rating between ten (10) million and ten thousand (10,000) million Btu shall be determined by use of the following equation:

$$E = 0.90(Q)^{-0.174}$$

where

E = the maximum allowable particulate emission rate in pounds per million Btu of heat input, rounded off to two (2) decimal places; and

Q = the installation heat input in millions of Btu per hour.

(5) Emission Limitation for New Indirect Heating Sources.

(A) No person may cause, allow or permit the emission of particulate matter in excess of that specified in the following schedule:

1. If the total equipment heat input has a capacity rating of ten (10) million Btu or less, 0.60 pounds for each million Btu per hour input; or

2. If the total equipment heat input has a capacity rating of two thousand (2,000) million Btu or more, 0.10 pounds for each million Btu per hour input.

(B) The amount of particulate matter which may be emitted from fuel burning equipment having an intermediate capacity rating between ten (10) million and two thousand (2,000) million Btu shall be determined by use of the following equation:

$$E = 1.31(Q)^{-0.338}$$

where

E = the maximum allowable particulate emission rate in pounds per million Btu of heat input, rounded off to two (2) decimal places; and

Q = the installation heat input in millions of Btu per hour.

(6) Compliance Schedule for Existing Sources. Existing burning equipment used for indirect heating shall be modified or rebuilt in compliance with section (4) in accordance with the following schedule: rated capacity—ten thousand (10,000) million or greater Btu heat input per hour; latest date for compliance; January 1, 1972; and rated capacity—ten (10) million to nine thousand nine hundred ninety-nine (9,999) million Btu heat input per hour; latest date for compliance, January 1, 1973.

*AUTHORITY: section 643.050, RSMo 1986.\* Original rule filed March 24, 1971, effective April 3, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed June 30, 1975, effective July 10, 1975. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed March 15, 1979, effective Nov. 11, 1979. Amended: Filed Oct. 13, 1983, effective March 12, 1984. Amended: Filed March 14, 1984, effective Sept. 14, 1984. Amended: Filed April 1, 2002, effective Nov. 30, 2002.*

*\*Original authority: 643.050, RSMo 1965, amended 1972, 1992.*

**10 CSR 10-3.070 Restriction of Particulate Matter From Becoming Airborne**  
(Rescinded September 28, 1990)

*AUTHORITY: section 203.050, RSMo 1986. Original rule filed July 13, 1971, effective*





July 23, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed June 30, 1975, effective July 10, 1975. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed May 11, 1984, effective Oct. 11, 1984. Rescinded: Filed March 5, 1990, effective Sept. 28, 1990.

**10 CSR 10-3.080 Restriction of Emission of Visible Air Contaminants**  
(Rescinded May 30, 2000)

*AUTHORITY:* section 643.050, RSMo Supp. 1997. Original rule filed March 24, 1971, effective April 3, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Jan. 14, 1977, effective July 11, 1977. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed March 15, 1979, effective Nov. 11, 1979. Emergency amendment filed June 15, 1995, effective June 25, 1995, expired Oct. 22, 1995. Amended: Filed Sept. 14, 1995, effective May 30, 1996. Amended: Filed June 15, 1998, effective Jan. 30, 1999. Rescinded: Filed Sept. 15, 1999, effective May 30, 2000.

**10 CSR 10-3.090 Restriction of Emission of Odors**

*PURPOSE:* This rule restricts the emission of excessive odorous matter.

*PUBLISHER'S NOTE:* The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproduction. This note applies only to the reference material. The entire text of the rule is printed here.

(1) Application. This rule shall apply throughout Missouri except in the City of St. Louis and St. Charles, St. Louis, Jefferson, Franklin, Clay, Cass, Buchanan, Ray, Jackson, Platte and Greene Counties.

(2) Restriction of Emission of Odors. No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one (1) volume of odorous air is diluted with seven (7) volumes of odor-free air for two (2) separate trials not less

than fifteen (15) minutes apart within the period of one (1) hour.

(3) Exceptions.

(A) The provisions of section (2) of this rule shall not apply to the emission of odorous matter from the pyrolysis of wood in the production of charcoal in a Missouri-type charcoal kiln.

(B) The provisions of section (2) of this rule shall not apply to the emission of odorous matter from the raising and harvesting of crops nor from the feeding, breeding and management of livestock or domestic animals or fowl except as described in section (5) of this rule.

(4) Method of Measurement. Measurements may be made with a Scentometer as manufactured by the Barnebey & Sutcliffe Corporation or by a similar technique that will give equivalent results.

(5) Control of Odors from Class 1A Concentrated Animal Feeding Operations.

(A) Notwithstanding any provision in any other regulation to the contrary, all Class 1A concentrated animal feeding operations as defined in section 640.703(3), RSMo, operating on or after January 1, 1999, shall prepare and implement an odor control plan describing measures to be used to control odor emissions. The plan shall identify all sources of odor emissions and describe the measures to be used to reduce the overall odor emissions associated with the facility operations. The schedule for these activities shall be as follows:

1. Not later than July 1, 2000, an odor control plan shall be submitted to the Air Pollution Control Program (APCP). The odor control plan shall contain the following:

A. A listing of all potentially innovative and proven odor control options for the facility. Odor control options may include odor reductions achieved through: odor prevention, odor capture and treatment, odor dispersion, add-on control devices, modifications to feed-stock or waste handling practices, or process changes;

B. A detailed discussion of feasible odor control options for the facility. The discussion shall include options determined by the facility to be infeasible. Determination of infeasibility should be well documented and based on physical, chemical and engineering principles demonstrating that technical difficulties would preclude the success of the control option;

C. A ranking of feasible odor control options from most to least effective. Ranking factors shall include odor control effective-

ness, expected odor reduction, energy impacts and economic impacts;

D. An evaluation of the most effective odor control options. Energy, environmental and economic impacts shall be evaluated on a case-by-case basis;

E. Description of the odor control options to be implemented by the facility;

F. A schedule for implementation. The schedule shall establish interim milestones in implementing the odor control plan prior to the implementation deadline; and

G. An odor monitoring plan;

2. The APCP, in consultation with the Water Pollution Control Program, shall review and approve or disapprove the odor control plan.

A. After the APCP receives an odor control plan they shall perform a completeness review. Within thirty (30) days of receipt, the APCP shall notify the facility if the plan contains all the elements of a complete odor control plan. If found incomplete, the APCP shall give the facility a written explanation of the plan's deficiencies.

B. Within sixty (60) days after determining an odor control plan submittal is deemed complete, the APCP shall approve or disapprove the plan. During this sixty (60)-day technical review period, the APCP may request additional information needed for review. If the plan is disapproved, the APCP shall give the owner or operator a written evaluation explaining the reason(s) for disapproval;

3. Not later than March 1, 2001, the facility shall submit to the APCP a written progress report on implementing the odor control plan. The progress report shall, at a minimum, compare the actual schedule of implementation to that approved in the odor control plan;

4. Not later than January 1, 2002, implementation of the odor control plan shall be complete and controls shall be operational.

(B) Notwithstanding any provision in any other regulation to the contrary, all new Class 1A concentrated animal feeding operations, prior to commencement of construction, shall obtain approval from the APCP of an odor control plan as described above.

(C) After January 1, 2002, no Class 1A concentrated animal feeding operation may cause, permit or allow the emission of odorous matter—

1. In concentrations and frequencies or for durations that the odor can be perceived when one (1) volume of odorous air is diluted with seven (7) volumes of odor-free air for two (2) separate trials not less than fifteen (15) minutes apart within the period of one



(1) hour. This odor evaluation shall be taken at a site not at the installation and will be used as a screening evaluation. A positive screening evaluation for odor shall require an odor sample to be taken and evaluated by olfactometry as described in paragraph (5)(C)2. of this rule. These measurements may be made with a Scentometer as manufactured by the Barnebey & Sutcliffe Corporation or by a similar technique that will give equivalent results; and

2. When one (1) of the following conditions is met:

A. In concentrations with a best estimate detection threshold, represented as  $Z_{OL} \geq 110$ , as determined using American Society for Testing and Materials Standard E 679-04 (published April 2004) at an olfactometer flow rate of twenty (20) liters per minute. This standard is incorporated by reference in this rule, as published by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. This rule does not incorporate any subsequent amendments or additions; or

B. At intensities greater than that of two hundred twenty-five (225) parts per million of n-butanol odorant in air, which serves as the reference scale, as determined by an olfactometry panel evaluation of a sample of the odorous air.

(D) The director may require an ambient air monitoring quality assurance project plan. This plan shall be approved by the director and include or reference the documented and approved standard operating procedures for monitoring, field collection and analysis for any Class 1A CAFO that exceeds the odor emission limits found in paragraph (5)(C)2. of this rule following implementation of its odor control plan. Monitoring shall be done for pollutants or gases reasonably expected to be emitted by the CAFO and implemented on a schedule as agreed to by the source operator and the staff director. Monitoring shall begin and continue as approved in the plan and shall not exceed eight (8) quarters of complete data unless subsequent violations are determined.

*AUTHORITY: section 643.050, RSMo 2000.\* Original rule filed July 13, 1971, effective July 23, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Aug. 15, 1983, effective Jan. 13, 1984. Amended: Filed Nov. 2, 1998, effective July 30, 1999. Amended: Filed Feb. 14, 2003, effective Sept. 30, 2003. Amended: Filed Dec. 4, 2006, effective July 30, 2007.*

*\*Original authority: 643.050, RSMo 1965, amended 1972, transferred from 203.050 in 1986, 1992, 1993, 1995.*

### **10 CSR 10-3.100 Restriction of Emission of Sulfur Compounds**

(Rescinded July 30, 1997)

*AUTHORITY: section 643.050, RSMo 1986.\* Original rule filed March 24, 1971, effective April 3, 1971. Amended: Filed Jan. 31, 1972, effective Feb. 10, 1972. Amended: Filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed Oct. 14, 1977, effective March 11, 1978. Amended: Filed Aug. 11, 1978, effective April 12, 1979. Amended: Filed July 1, 1986, effective Nov. 28, 1986. Rescinded: Filed Dec. 13, 1996, effective July 30, 1997.*

### **10 CSR 10-3.110 Rules for Controlling Emissions During Periods of High Air Pollution Potential**

(Rescinded October 11, 1984)

*AUTHORITY: section 203.050, RSMo 1978. Original rule filed Jan. 31, 1972, effective Feb. 10, 1972. Rescinded: Filed May 11, 1984, effective Oct. 11, 1984.*

*Op. Atty. Gen. No. 331, Shell (11-15-71). The Missouri Air Conservation Commission has the authority under Chapter 203, RSMo 1969 to abate pollutant emissions on an emergency basis comparable to that available under 42 U.S.C.A. Section 1857d(k).*

### **10 CSR 10-3.120 Public Availability of Emission Data**

(Rescinded November 12, 1984)

*AUTHORITY: section 203.050, RSMo 1978. Original rule filed Aug. 25, 1972, effective Sept. 4, 1972. Rescinded: Filed June 13, 1984, effective Nov. 12, 1984.*

*Op. Atty. Gen. No. 331, Shell (11-15-71). The Missouri Air Conservation Commission does not have any specific authority to require the installation of emission monitoring devices, but does have the authority to require reports from sources of air pollution relating to rate, period of emission and composition of effluent and to make such information available to the public, unless any such information is "confidential" as defined by section 203.050.4., RSMo 1969.*

### **10 CSR 10-3.130 Submission of Emission Information**

(Rescinded November 12, 1984)

*AUTHORITY: section 203.050, RSMo 1978. Original rule filed Aug. 25, 1972, effective*

*Sept. 4, 1972. Rescinded: Filed June 13, 1984, effective Nov. 12, 1984.*

*Op. Atty. Gen. No. 331 Shell (11-15-71). The Missouri Air Conservation Commission has the authority under Chapter 203, RSMo 1969 necessary to inspect, conduct tests and obtain information, including the authority to require recordkeeping, to determine compliance with emission control rules.*

### **10 CSR 10-3.140 New Source Performance Regulations**

(Rescinded April 11, 1980)

*AUTHORITY: section 203.050, RSMo 1978. Original rule filed Dec. 19, 1975, effective Dec. 29, 1975. Rescinded: Filed Dec. 10, 1979, effective April 11, 1980.*

*Op. Atty. Gen. No. 331, Shell (11-15-71). The Missouri Air Conservation Commission has the authority under Chapter 203, RSMo 1969 to adopt emission control rules, including limitations on the content of fuels, which will attain and maintain national air quality standards, if the state standards are the same or more stringent.*

### **10 CSR 10-3.150 Restriction of Emissions of Sulfur Compounds From Indirect Heating Sources**

(Rescinded July 30, 1997)

*AUTHORITY: section 643.050, RSMo 1986.\* Original rule filed Oct. 14, 1977, effective March 11, 1978. Rescinded: Filed Dec. 13, 1996, effective July 30, 1997.*

### **10 CSR 10-3.160 Restriction of Emission of Fluorides From Diammonium Phosphate Fertilizer Production**

*PURPOSE: This rule establishes the maximum allowable rate of total fluoride emissions from any diammonium phosphate fertilizer production facility in the outstate Missouri area.*

*PUBLISHER'S NOTE: The publication of the full text of the material that the adopting agency has incorporated by reference in this rule would be unduly cumbersome or expensive. Therefore, the full text of that material will be made available to any interested person at both the Office of the Secretary of State and the office of the adopting agency, pursuant to section 536.031.4, RSMo. Such material will be provided at the cost established by state law.*



(1) Application. This rule shall apply throughout Missouri except in the City of St. Louis and St. Charles, St. Louis, Jefferson, Franklin, Clay, Cass, Buchanan, Ray, Jackson, Platte and Greene Counties.

(2) Maximum Allowable Emission of Total Fluoride From the Production of Diammonium Phosphate Fertilizer. The maximum emission of total fluoride from the production of diammonium phosphate fertilizer shall not exceed 0.030 grams per kilogram of phosphorous pentoxide input to the process (0.06 lb/ton).

(3) Time Schedules for Compliance. All sources subject to subsection (2)(A) of this rule shall be in compliance within eighteen (18) months (June 11, 1980) of the effective date of this rule December 11, 1978.

(4) Monitoring of Operations.

(A) Any facility subject to this rule shall install, calibrate, maintain and operate a monitoring device which can be used to determine the mass flow of phosphorous-bearing feed material to the diammonium phosphate process and a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. These devices shall have an accuracy of plus or minus five percent ( $\pm 5\%$ ) over their operating range.

(B) Any facility subject to this rule shall maintain a daily record of equivalent phosphorous pentoxide feed to the diammonium phosphate process by determining the total mass rate in metric ton/hour of phosphorous-bearing feed using a monitoring device for measuring mass flow rate which meets the requirements of subsection (4)(A) of this rule and by following the procedure described in subsection (5)(A).

(C) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(5) Determination of Equivalent Phosphorous Pentoxide Feed and Total Fluoride Emissions.

(A) Equivalent phosphorous pentoxide feed at the affected facility shall be determined as follows:

1. Determine the total mass rate in metric ton/hour of phosphorous-bearing feed using a flow monitoring device meeting the requirements of subsection (4)(A);

2. Calculate the equivalent phosphorous pentoxide feed by multiplying the percentage phosphorous pentoxide content, as measured

by the spectrophotometric molybdovanadophosphate method (AOAC Method 9) times the total mass rate of phosphorous-bearing feed. AOAC Method 9 is published in the *Official Methods of Analysis of the Association of Official Analytical Chemists*, 11th edition, 1970, pp. 11 and 12. Other methods may be approved by the director of the Department of Natural Resources.

(B) Determination of Total Fluoride Emissions. For each run, total fluoride emissions expressed as g/metric tons of equivalent phosphorous pentoxide feed shall be determined using the following equation:

$$E = \frac{(C_s Q_s) 10^{-3}}{M_{P_2O_5}}$$

Where:

E = emissions of total fluoride in g/metric ton of equivalent phosphorous pentoxide feed;

$C_s$  = concentration of total fluorides in mg/dscm as determined by 10 CSR 10-6.030(13);

$Q_s$  = volumetric flow rate of the effluent gas stream in dscm/hour as determined by 10 CSR 10-6.030(2);

$10^{-3}$  = Conversion factor for mg to g; and

$M_{P_2O_5}$  = Equivalent phosphorous pentoxide feed in metric ton/hour as determined by paragraph.

(6) Performance Testing. Any facility subject to this regulation shall have a performance test conducted on the diammonium phosphate process at the facility according to the procedure described in 10 CSR 10-6.030(13) within twenty-one (21) months after December 11, 1978 (September 11, 1980).

*AUTHORITY: section 643.050, RSMo 1986. \* Original rule filed Feb. 27, 1978, effective Dec. 11, 1978.*

*\*Original authority: 643.050, RSMo 1965, amended 1972, 1992.*