

APPENDIX I

Proposed State SO₂ Rule

**Title 10—DEPARTMENT OF
NATURAL RESOURCES**

Division 10—Air Conservation Commission

**Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods and Air
Pollution Control Regulations for the Entire State of Missouri**

PROPOSED RULE

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions. If the commission adopts this rule action, it will be the department's intention to submit this new rule to the U.S. Environmental Protection Agency for inclusion in the Missouri State Implementation Plan. The evidence supporting the need for this proposed rulemaking is available for viewing at the Missouri Department of Natural Resources' Air Pollution Control Program at the address listed in the Notice of Public Hearing at the end of this rule. More information concerning this rulemaking can be found at the Missouri Department of Natural Resources' Environmental Regulatory Agenda website, www.dnr.mo.gov/regs/index.html.

*PURPOSE: This rule establishes requirements for emission units emitting sulfur dioxide (SO₂). These requirements are necessary to comply with the one (1)-hour SO₂ National Ambient Air Quality Standard (NAAQS) and to maintain existing SO₂ regulatory requirements previously found in 10 CSR 10-6.260 that were in place prior to the establishment of the one (1)-hour SO₂ NAAQS. The rule consolidates, streamlines, and updates existing regulatory requirements in accordance with 536.175, RSMo. The evidence supporting the need for this proposed rulemaking, per 536.016, RSMo, is a June 22, 2010, **Federal Register** rule that established a new one (1)-hour SO₂ standard and an August 5, 2013, **Federal Register** rule that established one (1)-hour SO₂ nonattainment areas.*

- (1) **Applicability.** This rule applies to any source that emits sulfur dioxide (SO₂). The following exceptions apply to any source not listed in Table I of this rule. Owners or operators of units that meet the exception criteria must furnish the director information necessary to confirm the criterion is met.
 - (A) Individual units fueled exclusively with natural gas (as defined in 40 CFR 72.2) or liquefied petroleum gas as defined by ASTM International or any combination of these fuels as of December 31, 2016;
 - (B) Individual indirect heating units with a rated capacity less than or equal to three hundred fifty thousand British thermal units (350,000 Btus) per hour actual heat input; or
 - (C) Individual units subject to a more restrictive SO₂ emission limit or more restrictive fuel sulfur content limit under –
 1. 10 CSR 10-6.070; or
 2. Any federally enforceable permit.
- (2) **Definitions.** Definitions of certain terms specified in this rule may be found in 10 CSR 10-6.020.

(3) General Provisions.

- (A) SO₂ Emission Limits. No later than January 1, 2017, owners or operators of sources and units listed in Table I of this rule must limit their SO₂ emissions as specified. As of the effective date of this rule, owners or operators of sources listed in Table II of this rule must limit their SO₂ emissions as specified.

Table I – Sources with SO₂ emission limits necessary to address the one (1)-hour SO₂ National Ambient Air Quality Standard*

Source	Source ID	Emission Limit per Source/Unit (Pounds SO ₂ per Hour)	Averaging Time
Ameren Missouri — Labadie Energy Center	0710003	40,837	24 hour block average
Ameren Missouri — Meramec Energy Center	1890010	7,371	24 hour block average
Ameren Missouri — Rush Island Energy Center	0990016	13,600	24 hour block average
Independence Power and Light — Blue Valley Station Unit 1 Unit 2 Unit 3	0950050	Natural gas Natural gas Natural gas	N.A. N.A. N.A.
Kansas City Power and Light Co. — Hawthorn Station Boiler #5 Combustion turbine 7 Combustion turbine 8 Combustion turbine 9	0950022	785 Natural gas Natural gas Natural gas	30 day rolling N.A. N.A. N.A.
Kansas City Power and Light Co. — Sibley Generating Station Boiler #1 Boiler #2 Boiler #3	0950031	1,468.17 1,447.01 10,632.02	30 day rolling 30 day rolling 30 day rolling
Veolia Energy Kansas City Inc. — Grand Ave. Station Boiler 1A Boiler 6 & 8 Boiler 7	0950021	0.5 351.8 0.5	1 hour 1 hour 1 hour

*Any Table I source/unit fueled by coal, diesel or fuel oil shall require a SO₂ Continuous Emission Monitoring System (CEMS) and owners or operators must follow all applicable requirements per subparagraph (3)(E)1.B. of this rule. Any source/unit that is fueled by natural gas (or changes fuels to natural gas no later than January 1, 2017) shall no longer require SO₂ CEMS for such units beginning with the completion date of the fuel change to natural gas.

Table II – Sources subject to SO₂ emission limits in place prior to 2010

Source	Source ID	Emission Limit per Source (Pounds SO₂ per Million Btus Actual Heat Input)	Averaging Time
Associated Electric Coop, Inc. — Chamois Plant	1510002	6.7	3 hours
Empire District Electric Company — Asbury Plant	0970001	12.0	3 hours
New Madrid Power Plant — Marston	1430004	10.0	3 hours
Thomas Hill Energy Center Power Division — Thomas Hill	1750001	8.0	3 hours
University of Missouri (MU) — Columbia Power Plant	0190004	8.0	3 hours
Kansas City Power and Light Co. — Montrose Generating Station	0830001	3.9	24 hours
Ameren Missouri — Sioux Plant	1830001	4.8	Daily average, 00:01 to 24:00
Doe Run Company — Buick Resource Recycling Facility	0930009	8,650 pounds SO ₂ /hr	1 hour test repeated 3 times

- (B) Owners or operators of indirect heating sources with a total capacity, excluding exempt units, greater than three hundred fifty thousand British thermal units (350,000 Btus) per hour actual heat input must limit their SO₂ emissions as follows:
1. For sources located in Missouri, other than in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis, no more than eight pounds (8 lbs.) of SO₂ per million Btus actual heat input averaged on any consecutive three (3)-hour time period unless that source is listed in Table I or II of this rule; and

2. For sources located in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis, no more than two and three-tenths pounds (2.3 lbs.) of SO₂ per million Btus actual heat input averaged on any consecutive three (3)-hour time period unless —
 - A. The source is listed in Table I or II of this rule; or
 - B. The source has a total rated capacity of less than two thousand (2,000) million Btus per hour and then the following restrictions apply.
 - (I) During the months of October, November, December, January, February, and March of every year, no person shall burn or permit the burning of any coal containing more than two percent (2%) sulfur or of any fuel oil containing more than two percent (2%) sulfur. Otherwise, no person shall burn or permit the burning of any coal or fuel oil containing more than four percent (4%) sulfur.
 - (II) Part (3)(B)2.B.(I) of this rule shall not apply to any source if it can be shown that emissions of SO₂ from the source into the atmosphere will not exceed two and three-tenths pounds (2.3 lbs.) per million Btus actual heat input to the source.

- (C) Owners or operators of sources and units not covered under subsection (3)(A) or (3)(B) of this rule must limit the fuel sulfur content as specified below.

Source or unit	Liquid fuel [parts per million (ppm) sulfur]	
	Residual	Distillate
New	8,509	8,812
Existing	34,036	35,249

- (D) No later than January 1, 2017, owners or operators of sources subject to this rule in Jackson and Jefferson Counties must accept for delivery only ultra-low sulfur distillate fuel oil with a maximum fuel sulfur content of fifteen (15) ppm for use in unit(s) fueled, in whole or in part, by diesel, No. 1 fuel oil and/or No. 2 fuel oil.
- (E) Compliance Determination. Compliance must be determined as follows:
 1. For sources and/or units listed in Table I of this rule, SO₂ Continuous Emission Monitoring System (CEMS) data.
 - A. SO₂ CEMS are not required for the following cases:
 - (I) Units fueled exclusively by natural gas and not using any secondary fuel; or
 - (II) Units fueled by natural gas and only using fuel oil for less than forty-eight (48)-hours annually and only for qualifying situations (e.g., testing, maintenance or operator training). The forty-eight (48)-hour annual limit for the use of fuel oil as a secondary fuel shall not include qualifying curtailment events and compliance must be demonstrated using paragraph (3)(D)3. of this rule;
 - B. SO₂ CEMS must follow the requirements in 40 CFR 75 and/or 40

- CFR 60, Appendices B and F, as incorporated by reference in subsection (5)(B) of this rule;
2. For sources listed in Table II of this rule already subject to a SO₂ CEMS requirement, SO₂ CEMS data; and
 3. For sources subject to subsection (3)(B) or (3)(C) of this rule not required to use SO₂ CEMS for compliance and for sources listed in Table II of this rule not required to use SO₂ CEMS for compliance—
 - A. Fuel delivery records;
 - B. Fuel sampling and analysis;
 - C. Performance tests;
 - D. Continuous emission monitoring; or
 - E. Other compliance methods approved by the staff director and the U.S. Environmental Protection Agency and incorporated into the state implementation plan.
- (4) Reporting and Record Keeping.
- (A) Owners or operators of all sources subject to this rule must—
 1. Report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the staff director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be a written report and must include, at a minimum, the following:
 - A. Name and location of source;
 - B. Name and telephone number of person responsible for the source;
 - C. Identity and description of the equipment involved;
 - D. Time and duration of the period of SO₂ excess emissions;
 - E. Type of activity;
 - F. Estimate of the magnitude of the SO₂ excess emissions expressed in the units of the applicable emission control regulation and the operating data and calculations used in estimating the magnitude;
 - G. Measures taken to mitigate the extent and duration of the SO₂ excess emissions; and
 - H. Measures taken to remedy the situation which caused the SO₂ excess emissions and the measures taken or planned to prevent the recurrence of these situations;
 2. Maintain a list of modifications to the source's operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess SO₂ emissions;
 3. Maintain a record of data, calculations, results, records, and reports from any SO₂ emissions performance test, SO₂ continuous emission monitoring, fuel deliveries, and/or fuel sampling tests; and
 4. Maintain a record of any applicable SO₂ monitoring data, performance evaluations, calibration checks, monitoring system and device performance tests, and any adjustments and maintenance performed on these systems or devices.
 - (B) Owners or operators of sources using SO₂ CEMS for compliance must also—

1. If SO₂ CEMS is already used to satisfy other requirements (other than only to demonstrate compliance with this rule), continue to follow all correlating SO₂ CEMS requirements; or
 2. If SO₂ CEMS is used only to demonstrate compliance with this rule, the SO₂ CEMS and any necessary auxiliary monitoring equipment must follow the requirements in subsection (5)(B) of this rule.
- (C) Owners or operators of sources using fuel delivery records for compliance must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
1. The name, address, and contact information of the fuel supplier;
 2. The type of fuel (bituminous or sub-bituminous coal, diesel, #2 fuel oil, etc.);
 3. The moisture content of the coal (if applicable);
 4. The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
 5. The heating value of the fuel.
- (D) Owners or operators of sources using fuel sampling and analysis for compliance must also follow the requirements in subsection (5)(D) of this rule.
- (E) Owners or operators of sources using SO₂ emissions performance tests for compliance must also follow the requirements in subsection (5)(A) of this.
- (F) All required reports and records must be retained on-site for a minimum of five (5) years and made available within five (5) business days upon written or electronic request by the director.
- (G) Owners or operators of sources subject to this rule must furnish the director all data necessary to determine compliance status.
- (5) Test Methods.
- (A) Owners or operators of sources must use one (1) or more of the following test methods contained in 40 CFR 60, Appendix A, published as of July 1, 2014, and hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, DC 20408, to determine compliance with SO₂ emission limits in this rule. This rule does not incorporate any subsequent amendments or additions.
1. Method 1: Sample and velocity traverses for stationary sources;
 2. Method 2: Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);
 3. Method 3: Gas analysis for the determination of dry molecular weight;
 4. Method 4: Determination of moisture content in stack gases;
 5. Method 6: Determination of Sulfur Dioxide Emissions from Stationary Sources;
 6. Method 6A: Determination of Sulfur Dioxide, Moisture, and Carbon Dioxide from Fuel Combustion Sources;
 7. Method 6B: Determination of Sulfur Dioxide and Carbon Dioxide Daily

- Average Emissions from Fossil Fuel Combustion Sources;
8. Method 6C: Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure); and/or
 9. Method 8: Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources.
- (B) Owners or operators of sources using a SO₂ CEMS for demonstrating compliance with this rule must follow the requirements in 40 CFR 75 and/or 40 CFR 60, Appendices B and F, published as of July 1, 2014, which are hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, DC 20408. This rule does not incorporate any subsequent amendments or additions.
- (C) Owners or operators of secondary lead smelters must operate a SO₂ CEMS as follows:
1. The SO₂ CEMS must be certified by the owner or operator in accordance with 40 CFR 60 Appendix B, Performance Specification 2 and Section 60.13 as is pertinent to SO₂ continuous emission monitors as adopted by reference in 10 CSR 10-6.070.
 2. The span of SO₂ continuous emission monitors must be set at an SO₂ concentration of one-fifth percent (0.20%) by volume.
- (D) Owners or operators of sources must use fuel sampling and analysis to determine sulfur weight percent, or equivalent, of fuels(s) used to operate fuel emission sources and/or units regulated by this rule in accordance with 10 CSR 10-6.040.
- (E) The heating value of the fuel must be determined as specified in 10 CSR 10-6.040. The actual heat input must be determined by multiplying the heating value of the fuel by the amount of fuel burned during the source test period.
- (F) Owners or operators of sources may use an alternative test method that provides results at least the same accuracy and precision as the replaced method, and is approved in advance by the staff director, the EPA, and incorporated into the state implementation plan.

AUTHORITY: section 643.050, RSMo Supp. 2014. Original rule filed April 10, 2015.

PUBLIC COST: This proposed rule will not cost public entities or political subdivisions more than five hundred dollars (\$500) in the aggregate. Fiscal notes are provided for this proposed rule to document detailed information and assumptions associated with the economic cost estimates.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars (\$500) in the aggregate. Fiscal notes are provided for this proposed rule to document detailed information and assumptions associated with the economic cost estimates.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: A public hearing on this proposed rule will begin at 9:00 a.m., June 25, 2015. The public hearing will be held at the Governor's Office Building, 200 Madison Street, Jefferson City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person. Interested persons, whether or not heard, may submit a written or email statement of their views until 5:00 p.m., July 2, 2015.

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Written comments shall be sent to Chief, Air Quality Planning Section, Missouri Department of Natural Resources' Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102-0176. Email comments shall be sent to apcprulespn@dnr.mo.gov.

**FISCAL NOTE
PRIVATE COST**

- I. Department Title:** Department of Natural Resources
Division Title: Air Conservation Commission
Chapter Title: Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

Rule Number and Title:	10 CSR 10-6.261 Control of Sulfur Dioxide Emissions
Type of Rulemaking:	New Rule

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
6 entities	Electric generating units (EGUs) identified in Table I of rule	\$ 0
709 entities	Businesses (such as electric services, manufacturing, heating) with sulfur dioxide emissions as reported on 2012 Emission Inventory Questionnaire for entire state	\$ 0

III. WORKSHEET

(Not Applicable)

II. ASSUMPTIONS

1. For the convenience of calculating this fiscal note over a reasonable time frame, the life of the rule is assumed to be ten (10) years although the duration of the rule is indefinite. If the life of the rule extends beyond ten (10) years, the annual costs for additional years will be consistent with the assumptions used to calculate annual costs as identified in this fiscal note.
2. There are no new costs in transferring the existing 10 CSR 10-6.260 rule

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requirements, limits, and conditions to new rule 10 CSR 10-6.261. The monitoring, compliance, reporting, and recordkeeping requirements also have no new costs as they are existing requirements from 6.260.

3. In addition to the consolidation of 6.260 into the new rule, rule 6.261 sets limits and/or conditions for sources located in Jackson and Jefferson counties SO₂ nonattainment areas (listed in Table I of the rule) to comply with the 1-hour sulfur dioxide National Ambient Air Quality Standard (NAAQS).

Table I sources and units subject to this rule will incur no new costs as a result of this rule. Two (2) sources will switch to natural gas to comply with the federal Mercury and Air Toxics Standards (MATS) and/or the federal industrial boiler Maximum Achievable Control Technology (MACT). The other sources and units will comply with SO₂ emission limits through adjustments and modifications to existing equipment as part of their standard operating procedures. These adjustments would not require the installation of new SO₂ pollution control equipment.

4. Requiring sources in Jackson and Jefferson Counties subject to this rule to use Ultra Low Sulfur Diesel (ULSD) is not considered a new cost since that is the only diesel fuel currently available. Per the federal Low Sulfur Diesel (LSD) [500 ppm] and Ultra Low Sulfur Diesel [15 ppm] regulations [40 CFR 80 Subpart I], Diesel Fuel Grades 1-D & 2-D are required to be 100% ULSD for both highway diesel fuel and Non-road diesel fuel by 2014 (or earlier). Also, the provisions allowing qualifying small refiners credit options to produce higher sulfur fuels all expire in 2014 (or earlier) for both highway diesel fuel and Non-road diesel. As a result, ULSD requirements dictate 100% of Non-road Diesel Fuel Grades 1-D & 2-D, shall satisfy ULSD requirements in 2014. Refiners are not making any higher sulfur content diesel fuels and we are not aware of any diesel with fuel sulfur content greater than 15 ppm currently available or stockpiled in the state. Therefore, all future diesel fuel deliveries will meet the ULSD requirement with no additional cost as a result of this rule.

**FISCAL NOTE
PUBLIC COST**

- I. Department Title:** Department of Natural Resources
Division Title: Air Conservation Commission
Chapter Title: Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

Rule Number and Name:	10 CSR 10-6.261 Control of Sulfur Dioxide Emissions
Type of Rulemaking:	New Rule

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate
1 municipal utility identified in Table I of the rule	\$ 0
119 businesses (such as electric services, manufacturing, heating) with sulfur dioxide emissions as reported on 2012 Emission Inventory Questionnaire for entire state	\$ 0

III. WORKSHEET

(Not Applicable)

IV. ASSUMPTIONS

1. For the convenience of calculating this fiscal note over a reasonable time frame, the life of the rule is assumed to be ten (10) years although the duration of the rule is indefinite. If the life of the rule extends beyond ten (10) years, the annual costs for additional years will be consistent with the assumptions used to calculate annual costs as identified in this fiscal note.
2. There are no new costs in transferring the existing 10 CSR 10-6.260 rule requirements, limits, and conditions to new rule 10 CSR 10-6.261. The monitoring, compliance, reporting, and recordkeeping requirements also have no new costs as they are existing requirements from 6.260.
3. In addition to the consolidation of 6.260 into the new rule, rule 6.261 sets limits

and/or conditions for sources located in Jackson and Jefferson counties SO₂ nonattainment areas (listed in Table I of the rule) to comply with the 1-hour sulfur dioxide National Ambient Air Quality Standard (NAAQS).

Table I sources and units subject to this rule will incur no new costs as a result of this rule. Two (2) sources will switch to natural gas to comply with the federal Mercury and Air Toxics Standards (MATS) and/or the federal industrial boiler Maximum Achievable Control Technology (MACT). The other sources and units will comply with SO₂ emission limits through adjustments and modifications to existing equipment as part of their standard operating procedures. These adjustments would not require the installation of new SO₂ pollution control equipment.

4. Requiring sources in Jackson and Jefferson Counties subject to this rule to use Ultra Low Sulfur Diesel (ULSD) is not considered a new cost since that is the only diesel fuel currently available. Per the federal Low Sulfur Diesel (LSD) [500 ppm] and Ultra Low Sulfur Diesel [15 ppm] regulations [40 CFR 80 Subpart I], Diesel Fuel Grades 1-D & 2-D are required to be 100% ULSD for both highway diesel fuel and Non-road diesel fuel by 2014 (or earlier). Also, the provisions allowing qualifying small refiners credit options to produce higher sulfur fuels all expire in 2014 (or earlier) for both highway diesel fuel and Non-road diesel. As a result, ULSD requirements dictate 100% of Non-road Diesel Fuel Grades 1-D & 2-D, shall satisfy ULSD requirements in 2014. Refiners are not making any higher sulfur content diesel fuels and we are not aware of any diesel with fuel sulfur content greater than 15 ppm currently available or stockpiled in the state. Therefore, all future diesel fuel deliveries will meet the ULSD requirement with no additional cost as a result of this rule.