

Missouri Department of Natural Resources  
**Rulemaking Report**  
Updated: 3/20/15

Affected Rule(s): New rule 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions, rescission of 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

1. What is the purpose of this proposed rulemaking?

The new rule, 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions, will set enforceable environmental conditions and emission limits necessary to address the U.S. Environmental Protection Agency's (EPA's) 1-hour sulfur dioxide (SO<sub>2</sub>) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion (ppb) [75 Federal Register (FR) 35520, June 22, 2010]. This new rule is a core component of the Missouri State Implementation Plans (SIPs) for the Jackson and Jefferson County SO<sub>2</sub> nonattainment areas. In addition, this rule incorporates all necessary existing provisions from 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds (i.e., provisions in place prior to the 1-hour SO<sub>2</sub> NAAQS) in order to consolidate SO<sub>2</sub> requirements and reduce confusion for Missouri's SO<sub>2</sub> emission sources.

The new rule serves as the permanent and enforceable mechanism that will support attainment demonstration SIPs for the Jackson and Jefferson County SO<sub>2</sub> nonattainment areas. The SO<sub>2</sub> emission limits and unit-specific fuel requirements in Table I of 10 CSR 10-6.261 for Independence Power and Light's Blue Valley power plant, Kansas City Power and Light's Hawthorn and Sibley power plants, and Veolia Energy are set at the level needed to demonstrate attainment of the 1-hour SO<sub>2</sub> NAAQS within the Jackson County nonattainment area. In addition, the SO<sub>2</sub> emission limits in Table I for Ameren Missouri's Labadie, Meramec, and Rush Island power plants ensure compliance at the Mott Street SO<sub>2</sub> monitor and support the attainment demonstration for the Jefferson County nonattainment area. Another provision in the new rule to address the 1-hour SO<sub>2</sub> NAAQS is a requirement for sources located in Jackson and Jefferson Counties to use ultra-low sulfur distillate fuel oil in the future. All Table I emission limits and fuel requirements would become effective January 2017, consistent with EPA's SO<sub>2</sub> nonattainment SIP guidance.

The primary SO<sub>2</sub> source contributing to the violating Troost monitor in Jackson County is still operating (Veolia Energy), and the control strategy for bringing this monitor into compliance will be implemented through this rulemaking. In Jefferson County, the approach is different because the main control strategy—the closure of the Doe Run Herculaneum lead smelter as required by federal consent decree—has already been implemented. After the smelter ceased operations at the end of 2013, SO<sub>2</sub> concentrations at the violating Mott Street monitor have dropped significantly. This monitor is expected to be in compliance with the 1-hour SO<sub>2</sub> NAAQS by the end of 2015, which is over two years earlier than the attainment date of October 2018.

In conjunction with these rulemakings, the Air Program is pursuing an agreement with Ameren Missouri to install and operate new ambient SO<sub>2</sub> monitors and meteorological stations at their Rush Island power plant beginning in 2015. Rush Island is located within the Jefferson County nonattainment area boundary. The Rush Island agreement will also specify a process for evaluating the data collected at this plant and adjusting the SO<sub>2</sub> emission limits based on this data if needed in the future. Any adjustments to the SO<sub>2</sub> emission limits in Table I would be completed via a future revision to these agreements and/or to 10 CSR 10-6.261.

On a parallel path, the Air Program plans to pursue a "clean data finding" (determination that the area is attaining the 1-hour SO<sub>2</sub> NAAQS) for Jefferson County, once the three-year period demonstrates compliance with the monitor at the end of 2015. This clean data finding, subject to EPA approval, would suspend certain nonattainment SIP requirements for Jefferson County.

Details associated with the air quality modeling demonstrations and other supporting information for the SO<sub>2</sub> emission limits and fuel requirements in Table I of 10 CSR 10-6.261 will be provided with the attainment demonstration SIPs for both Jackson and Jefferson Counties. Both of these SIPs will be made available for public review and comment separate from this rulemaking (estimated in the spring/summer 2015 timeframe).

Regarding the consolidation of existing SO<sub>2</sub> requirements from 10 CSR 10-6.260, obsolete provisions are being eliminated and provisions that cannot be replaced with (existing) equivalent or more stringent SO<sub>2</sub> requirements are being carried forward into the new rule. The main 10 CSR 10-6.260 provisions being eliminated include the following:

- Sulfuric acid and sulfur trioxide limits of 35 and 70 micrograms per cubic meter (µg/m<sup>3</sup>); and
- SO<sub>2</sub> emission limits for named sources that no longer operate or are covered by another enforceable mechanism.

10 CSR 10-6.260 provisions being retained in the new rule include:

- Exemption from SO<sub>2</sub> emission limits for units using natural gas and LPG;
- Exemption for small sources;
- Exemption for units subject to an applicable SO<sub>2</sub> emission limit or fuel sulfur content under 10 CSR 10-6.070 New Source Performance Regulations or any federally enforceable permit;
- Distinction between indirect and direct heating sources;
- SO<sub>2</sub> concentration limits of 2,000 and 500 parts per million by volume (ppmv) converted to the more common units of parts per million by weight for ease of determining compliance;
- SO<sub>2</sub> emission limits for named sources not contributing to the Jackson and Jefferson County SO<sub>2</sub> nonattainment areas (listed in Table II of 10 CSR 10-6.261);

- St. Louis and outstate SO<sub>2</sub> emission limits of 2.3 pounds per million British thermal units (lbs/MMBtu) and 8.0 lbs/MMBtu; and
- 2% and 4% sulfur content limits for coal and fuel oil in the St. Louis area.

While the requirements being carried forward from 10 CSR 10-6.260 are not necessarily reflective of the 1-hour SO<sub>2</sub> NAAQS, they are needed to maintain the existing level of SO<sub>2</sub> emissions control in portions of the state outside the SO<sub>2</sub> nonattainment areas. The technical support document accompanying this proposed rule (“Anti-Backsliding Demonstration for the Consolidation of 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds with New Rule 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions”) further details which provisions are being eliminated from 10 CSR 10-6.260 and which are being retained. The technical support document also demonstrates that omitting the obsolete provisions from 10 CSR 10-6.261 will not have an adverse impact on air quality.

The existing rule, 10 CSR 10-6.260, is being rescinded. The intent is for 10 CSR 10-6.261 to serve as the state’s SO<sub>2</sub> rule that will be amended as needed over time to comply with future implementation phases of the 1-hour SO<sub>2</sub> NAAQS.

2. Why is the rulemaking being proposed now?

EPA finalized the Jackson County and Jefferson County SO<sub>2</sub> nonattainment areas in August 2013. The SIPs to address the 1-hour SO<sub>2</sub> standards for these two areas are due to EPA in April 2015. Timely completion of these rulemakings is needed because the new rule serves as the permanent and enforceable mechanism for requirements being established to support the SIPs for the Jackson County and Jefferson County SO<sub>2</sub> nonattainment areas.

10 CSR 10-6.261 is being proposed at this time because it will serve as an updated and streamlined regulation for SO<sub>2</sub> requirements in the state. 10 CSR 10-6.260 is being rescinded at this time because all necessary requirements will be contained in the new SO<sub>2</sub> rule, making 10 CSR 10-6.260 unnecessary.

3. Will the rulemaking incorporate any document by reference, rather than state the language within the rulemaking?

The new rule incorporates by reference multiple EPA test methods from 40 CFR 60, Appendix A. In addition, SO<sub>2</sub> Continuous Emissions Monitoring System (CEMS) requirements in 40 CFR 60, Appendices B and F, and 40 CFR 75 are also incorporated by reference. All these documents are incorporated by reference in section (5) of the rule. The specific test methods incorporated by reference from 40 CFR 60, Appendix A are:

- Method 1: Sample and velocity traverses for stationary sources;
- Method 2: Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);
- Method 3: Gas analysis for the determination of dry molecular weight;
- Method 4: Determination of moisture content in stack gases;

Method 6: Determination of Sulfur Dioxide Emissions from Stationary Sources;  
Method 6A: Determination of Sulfur Dioxide, Moisture, and Carbon Dioxide from Fuel Combustion Sources;  
Method 6B: Determination of Sulfur Dioxide and Carbon Dioxide Daily Average Emissions from Fossil Fuel Combustion Sources;  
Method 6C: Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure); and/or  
Method 8: Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources;

The test methods in 10 CSR 10-6.261 expand what is referenced in 10 CSR 10-6.260. The new rule adds test methods 1-4 and expands test method 6, which is now further divided into additional test methods 6A, 6B, and 6C.

4. Does this rulemaking prescribe environmental standards, limits or conditions and is a Regulatory Impact Report required for this rulemaking?

The new rule, 10 CSR 10-6.261, will prescribe environmental standards, limits or conditions so a Regulatory Impact Report will be required. An RIR is not required for the rescission of 10 CSR 10-6.260.

5. What authority does DNR have to carry out this rulemaking?

643.050, Powers and duties of commission, provides the commission shall have the power to adopt, promulgate, amend and repeal rules and regulations consistent with the general intent and purposes of sections 643.010 to 643.190, RSMo and chapter 536, RSMo.

643.055, Commission may adopt rules for compliance with federal law, provides the commission shall have authority to promulgate rules and regulations to establish standards and guidelines to ensure the State is in compliance with the provisions of federal Clean Air Act. The State is prohibited from being stricter than the federal Clean Air Act except for nonattainment and maintenance areas.

6. What does the rulemaking require and how does it produce benefits?

The new rule will set enforceable environmental conditions and limits necessary to address the 1-hour SO<sub>2</sub> NAAQS for the state's two SO<sub>2</sub> nonattainment areas. Sources with SO<sub>2</sub> emission limits in Table I of 10 CSR 10-6.261 will be required to keep their SO<sub>2</sub> emissions below these levels, but the rule provides these sources with the flexibility to rely on whatever control strategy they choose, whether it's installing pollution control equipment, switching to lower sulfur-containing fuels, reducing their hours of operation, or other methods. In some cases, Table I specifies use of natural gas, which is a low-sulfur fuel. Table I sources/units are also required to use CEMS to show compliance with the emission limits when not exempt through the use of natural gas. Another provision in the new rule to

address the 1-hour SO<sub>2</sub> NAAQS is a requirement for sources located in Jackson and Jefferson Counties to use ultra-low sulfur distillate fuel oil in the future.

The new rule incorporates all necessary existing provisions such as SO<sub>2</sub> emission limits and sulfur limits for coal and fuel oil from 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds. 10 CSR 10-6.261 provides additional methods for demonstrating compliance than does 10 CSR 10-6.260, such as the use of fuel delivery records.

SO<sub>2</sub> sources are required to monitor and record their SO<sub>2</sub> emissions. Sources have several monitoring options to demonstrate compliance such as the use of CEMS, fuel delivery records, fuel sampling, and performance tests. Any excess emissions other than startup, shutdown, and malfunctions must be reported each calendar quarter. All reports and records must be retained on-site for a minimum of five (5) years and made available upon request within five (5) business days.

The new rule produces several benefits. Sources in 10 CSR 10-6.261 Table I will be required to limit their SO<sub>2</sub> emissions, which will result in important health benefits. The new rule will serve to protect human health, public welfare, and the environment because the updated federal and state standards are based on studies that determine acceptable levels of pollutant concentrations. As a result of this rulemaking, the risk to human health, public welfare, or the environment will be reduced.

Current scientific evidence links short-term exposures to SO<sub>2</sub>, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.

Emissions that lead to high concentrations of SO<sub>2</sub> generally also lead to the formation of other SO<sub>x</sub>. Control measures that reduce SO<sub>2</sub> can generally be expected to reduce people's exposures to all gaseous SO<sub>x</sub>. This may have the important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats. SO<sub>x</sub> can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

Regarding the aspect of the 10 CSR 10-6.261 rulemaking that streamlines and consolidates existing SO<sub>2</sub> requirements from 10 CSR 10-6.260, obsolete provisions are being eliminated and provisions that cannot be replaced with equivalent or more stringent SO<sub>2</sub> requirements are being carried forward into the new rule. This consolidation streamlines the state's SO<sub>2</sub> rule requirements,

reducing confusion for affected sources and making it easier for sources to comply.

7. Who is most likely affected by the rulemaking?

The SO<sub>2</sub> emission limits and fuel requirements in Table I of 10 CSR 10-6.261 that address the 1-hour SO<sub>2</sub> NAAQS affect the following sources: Independence Power and Light's Blue Valley power plant, Kansas City Power and Light's Hawthorn and Sibley power plants, Veolia Energy, and Ameren's Labadie, Meramec, and Rush Island power plants. In addition, all sources located in Jackson and Jefferson Counties will be required to use ultra-low sulfur distillate fuel oil in the future. However, based on phone contact with businesses in those counties, we are not aware of any affected sources using anything except ultra-low sulfur fuels, so this does not impose additional requirements.

In addition to the facilities listed in Table I, the new rule affects SO<sub>2</sub> sources subject to the provisions carried forward from rule 10 CSR 10-6.260. This includes sources that emit SO<sub>2</sub> from fuel combustion and industrial processes. Since these provisions are already in place in 10 CSR 10-6.260, the new rule is not expected to impose additional obligations on these sources.

The citizens of Missouri will be affected by the SO<sub>2</sub> emission reductions and public health protections resulting from the proposed new rule. According to EPA, children, the elderly, and asthmatics are the most sensitive to SO<sub>2</sub> exposure. For these populations, SO<sub>2</sub> exposure can result in decreased lung function, increased respiratory symptoms, and more hospital admissions and emergency room visits.

8. What impact will the proposed rulemaking have on small businesses? (A small business is defined as a for-profit enterprise with fewer than 100 full or part-time employees.)

Though most of the new 1-hour SO<sub>2</sub> NAAQS requirements affect only the state's largest SO<sub>2</sub> emitters, some small businesses located in Jackson and Jefferson Counties could be impacted by the rule's provision to use ultra-low sulfur distillate fuel oil in the future. However, based on phone contact with businesses in those counties, we are not aware of any affected sources using anything except ultra-low sulfur fuels.

The new rule also affects SO<sub>2</sub> sources subject to the provisions carried forward from 10 CSR 10-6.260. This could include small businesses that emit SO<sub>2</sub> from fuel combustion and industrial processes. Since these provisions are already in place in 10 CSR 10-6.260, the new rule is not expected to impose additional obligations or compliance costs on small businesses.

10 CSR 10-6.261 provides additional methods for demonstrating compliance than 10 CSR 10-6.260, such as the use of fuel delivery records. These options should benefit small business because they are less costly than source tests.

A Small Business Impact Statement will be created for the new rule to show that small business impacts were considered. The associated rescission of 10 CSR 10-6.260 does not impact small businesses and therefore no Small Business Impact Statement is required.

9. What are the probable costs for the department or any other public agency in the implementation and enforcement of the rulemaking?

Implementation and enforcement tasks would be performed by existing program staff as part of their routine duties and the department will incur no additional costs. Other public agencies, such as municipalities and state institutions such as universities, may incur costs if their facilities emit large amounts of sulfur. The public entity fiscal note for the new rule will contain additional information and cost assumptions.

10. What is the anticipated effect of the rulemaking on state revenue?

The rulemakings are anticipated to have little to no effect on state revenue.

11. Who was/will be involved in developing the rulemaking?

These rulemakings are being developed by the department's Air Pollution Control Program. The sources listed in Table I of the new rule provided significant input on the SO<sub>2</sub> emissions limits and other requirements for addressing the 1-hour SO<sub>2</sub> NAAQS in the Jackson County and Jefferson County nonattainment areas. The Air Program Advisory Forum workgroup that is assisting with reviewing air rules provided feedback on preliminary drafts regarding the streamlining of 10 CSR 10-6.260 provisions. Additionally, the Washington University Interdisciplinary Environmental Clinic and the Sierra Club have provided input on the rulemaking and SIP approach.

12. How has/will the development of the rulemaking been/be shared with interested parties and the public at large?

The Regulatory Impact Report and draft rule text were posted and made available for comment for 60 days on the program website on December 12, 2014. We received comments from Boeing Company, Ameren, EPA Region 7, Washington University in St. Louis School of Law on behalf of the Sierra Club, and Empire District Electric Company.

As a result of comments received during the 60-day comment period on the draft rule text, the following changes were incorporated into the proposed rulemaking text:

- Changed the exemption language in section (1) and subsection (1)(A) to reduce confusion and burden on sources using natural gas and LP gas to fire unit.
- Changed the names associated with Ameren's facilities shown in Table I.
- Added back the fuel sulfur limits of 500 and 2,000 parts per million by volume (changed to parts per million by weight to be more consistent with common use) for sources other than indirect heating sources and those listed in Tables I and II. This is found in subsection (3)(C).
- Added back the indirect heating source category in subsection (3)(B).
- Changed the reporting and recordkeeping language in subsection (4)(C) to be fuel neutral.
- Changed the exemption language in subsection (1)(C) to clarify the intent of the exemption.
- Added the requirement that sources located in Jackson and Jefferson counties use ultra-low sulfur distillate fuel to address 1-hour SO<sub>2</sub> NAAQS.

The normal rule amendment processes will be followed: public hearing, MACC adoption, order of rulemaking, and publication in the Code of State Regulations. Information on the rulemakings is also made available on the department's web site.

Information regarding rulemakings is also provided to the Air Program Advisory Forum, the Air Quality Advisory Committee of the East-West Gateway Council of Governments, and the Air Quality Forum of the Mid-America Council.

13. Who may I contact to either ask questions or provide input on this rulemaking?

Questions and/or comments can be sent to:

Chief, Air Quality Planning Section  
 Missouri Department of Natural Resources' Air Pollution Control Program  
 P.O. Box 176  
 Jefferson City, MO 65102-0176

or

Missouri Air Conservation Commission  
 P.O. Box 176  
 Jefferson City, MO 65102-0176

or call: (573) 751-4817

14. What is the expected calendar for this rulemaking, particularly the dates for the comment period and public hearing?

A tentative filing of the proposed rulemakings is expected 4/15/2015 and a public hearing is expected 6/25/15. The comment period will begin after the rulemakings are filed and end seven (7) days after the public hearing.