

# 1-Hour SO<sub>2</sub> NAAQS Implementation: Final Data Requirements Rule

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PRESENTATION FOR AIR AGENCIES

OFFICE OF AIR QUALITY PLANNING AND STANDARDS

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# Overview

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- SO<sub>2</sub> NAAQS Data Requirements Rule (DRR)
  - Final rule was signed on August 10, 2015.
  - Information available on:  
<http://www.epa.gov/oaqps001/sulfurdioxide/implement.html>
- The DRR was developed to address the need for additional air quality data to be used for implementing the 2010 1-hour SO<sub>2</sub> NAAQS.
  - The existing SO<sub>2</sub> monitoring network characterizes localized SO<sub>2</sub> source impacts in a limited set of areas.
  - Under the DRR, air agencies will provide additional air quality data characterizing 1-hour peak concentrations and source-oriented impacts.

# Summary

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- The DRR directs state and tribal air agencies to characterize current air quality in areas with large SO<sub>2</sub> sources (2,000 tons per year or greater). (See section 51.1202)
- The final rule sets a process and timetable for air agencies to either establish ambient monitoring sites or conduct air quality modeling, and to submit air quality data to the EPA.
  - Air agencies have flexibility to choose the most appropriate technical approach for each source.
  - The resulting air quality data may be used by EPA in future actions related to implementing the 2010 1-hr SO<sub>2</sub> NAAQS.
- Alternatively, an air agency can avoid the air quality characterization requirement for a source by establishing federally enforceable emission limit(s) and providing documentation of the limit and compliance to EPA by January 2017.

# Source Applicability Threshold

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- Source applicability threshold is 2,000 tons per year (tpy) of actual SO<sub>2</sub> emissions in most recent year for which data are available.
  - Identifies priority sources.
  - No separate threshold based on metro area population.
  - Data submitted annually pursuant to requirements of acid rain program and/or Air Emissions Reporting Rule may be used for evaluating applicability.
- Based on 2011 emissions data, a threshold of 2,000 tpy accounts for approximately 412 sources and covers 89% of U.S. SO<sub>2</sub> emissions.
  - Based on more recent data, it is estimated that about 10% fewer sources now exceed this threshold.

# Federally Enforceable Emission Limits

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- Air agencies can avoid the requirement for source characterization by working with sources to establish permanent and enforceable emission limitations with compliance by January 13, 2017 that provide for annual emissions to remain below 2,000 tpy. [See section 51.1202(b)]
- SO<sub>2</sub> emission limits can be made federally enforceable through various mechanisms (e.g. through a source-specific SIP revision, a minor NSR permit, consent decree, etc.). Not all approaches would require a SIP revision.
- The air agency can also avoid air quality characterization for a source if the air agency can provide documentation that the affected source has permanently shut down operations prior to January 13, 2017. [See section 51.1202(b)]

# Timeline

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- **August 2015:** EPA issues final rule.
- **Jan. 15, 2016:** Air agency identifies sources exceeding threshold and other sources for which air quality will be characterized.
- **July 1, 2016:** Air agency specifies (for each identified source) whether it will monitor air quality, model air quality, or establish an enforceable limit.
  - Air agency also accordingly submits a revised monitoring plan, modeling protocols, or descriptions of planned limits on emissions to less than 2,000 tpy.
- **January 2017**
  - New monitoring sites must be operational by Jan. 1, 2017.
  - Modeling analyses must be submitted to EPA by Jan. 13, 2017.
  - Documentation of federally enforceable emission limits and compliance must be submitted to EPA by Jan. 13, 2017.
- **Early 2020:** Monitoring sites will have 3 years of quality-assured data which must be submitted to EPA.

# January 15, 2016: Air agency submits list of sources

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- The list submitted by the state establishes the sources that must be characterized, and cannot be changed once submitted. [See section 51.1202(a)]
- Before submitting list, consultation between air agencies and EPA Regional Offices is strongly encouraged!
- Air quality characterization is required for sources that emitted at least 2,000 tpy in most recent year for which data is available.
- States and EPA Regional Administrators retain the discretion to require air quality characterization near additional sources below the threshold that may warrant characterization:
  - Near sources with low stack height and plume buoyancy.
  - In areas with multiple, clustered sources below the threshold.
  - Near sources only temporarily below the threshold.

# July 1, 2016: Air agency specifies for each source whether it will monitor air quality, model air quality, or establish an enforceable limit

- Submit revised monitoring plan:
  - Draft non-binding Monitoring Technical Assistance Document:
    - <http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf>
  - Include any new monitoring sites established to meet the DRR in annual monitoring plan update.
  - Operate as State and Local Air Monitoring Stations (SLAMS) or in equivalent manner.
  - Report data quarterly; annual certification by May 1 of following year.
- Submit modeling protocol:
  - Draft non-binding Modeling Technical Assistance Document:
    - <http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/SO2ModelingTAD.pdf>
  - Model air quality using actual hourly emissions and meteorology for the most recent 3 years.
  - Review by EPA, and ongoing consultation between EPA and air agency to resolve issues early in process. No formal action by EPA on modeling protocols.
- Describe planned emission limits.
  - Describe intended level, averaging time, approach for making federally enforceable.



# Monitoring and Modeling Technical Assistance Documents

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## Monitoring TAD

- Describes several analytical approaches to help identify appropriate monitoring locations to characterize peak SO<sub>2</sub> concentrations around an SO<sub>2</sub> emissions source.
- Approaches include the use of air quality modeling, exploratory monitoring, and weight of evidence.

## Modeling TAD

- Suggests details on modeling with actual emissions data for one or more sources to characterize air quality.
- Provides recommendations on including other nearby sources, use of three years of meteorological data, and accounting for background concentrations.

## Links

<http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf>

<http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/SO2ModelingTAD.pdf>

## January 2017: Monitoring sites are operational; modeling analyses and documentation of federally enforceable emission limits are due

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- New monitoring sites must be operational by January 1, 2017. [See section 51.1203(c)(2)]
  - For the purpose of characterizing air quality using data collected during 2017-2019.
  - If monitoring sites are not operational by the January 1, 2017 deadline, then under the Consent Decree these areas must be designated by December 2017.
- Air agency submits modeling analyses and supporting information to EPA Regional Office by January 13, 2017. [See section 51.1203(d)(2)]
- Air agency submits documentation of federally enforceable emission limits and compliance to EPA Regional Office by Jan. 13, 2017. [See section 51.1203(e)]

# Ongoing Data Requirements for Areas Designated “Attainment”

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## For an area with ambient monitoring

- Monitor(s) generally must continue operation. However, a monitoring site established under the DRR may be shut down if it has a design value below 50% of the standard in the first 3-year period or second 3-year period of its operation. [See section 51.1203(c)(2)].
- After the fourth year of operation, a monitor may be shut down according to the generally applicable criteria of 40 CFR 58.14 (applicable for all pollutants, including a provision where the design value is below 80% of the standard and less than 10% estimated likelihood of violating).

## For an area designated attainment based on modeling with actual emissions

- In the absence of monitoring data, the air agency is required to provide a report to EPA annually (by July 1 of the following year) assessing emissions changes. [See section 51.1203(d)]
  - Report must reflect the most recent quality–assured emissions data available for relevant sources in the affected area.
  - Must recommend whether updated modeling should be provided to characterize air quality.
- If air agency provides modeling of most recent actual emissions indicating levels throughout area are 50% of standard or less, then it will not be obligated to provide further annual reports assessing emissions changes.

# Treatment Under the DRR of Sources in Areas Already Designated for the 2010 SO<sub>2</sub> NAAQS

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- Currently there are 29 areas already designated for the 2010 SO<sub>2</sub> NAAQS, and during the DRR implementation period, some additional areas may be designated pursuant to the consent decree resulting from litigation on the SO<sub>2</sub> NAAQS designations.
- The DRR preamble discusses how sources in already-designated areas would be treated under the DRR:
  - **Sources in “Nonattainment” areas:** Sources located in nonattainment areas are expected to be characterized as a part of the nonattainment plan submittal. Therefore, air quality characterization of these sources is not generally required under the DRR. States and Regions retain the discretion to characterize such sources, however (*e.g.*, to address potential impacts to areas outside a nonattainment area).
  - **Sources in “Unclassifiable/attainment” areas:** If an area is designated as “unclassifiable/attainment” prior to the DRR deadline to characterize air quality for sources in the area, information used to inform the designation may be considered to satisfy the source air quality characterization requirements under the DRR.
  - **Sources in “Unclassifiable” areas:** The DRR requires air quality characterization for sources in areas designated as unclassifiable.

# Key Changes from Proposed Rule

Rule Feature	Final Rule	Proposed Rule
Applicability threshold	2,000 tpy SO <sub>2</sub> (nationally) (Clarifies that, generally, does not apply to sources in designated nonattainment areas.)	1,000 tpy in CBSAs 2,000 tpy elsewhere
Emissions coverage (based on 2011 data)	89% of point sources nationally	90%
Options for characterization	Monitoring, modeling, or option to limit emissions to less than 2,000 tpy by 1/13/17	Monitoring or modeling

# Key Changes from Proposed Rule (Continued)

Rule Feature	Final Rule	Proposed Rule
Deadline for selecting option	July 1, 2016	January 15, 2016
If new monitor not operational by January 1, 2017	Area remains subject to monitoring requirements. (Note: a separate court order now requires designation of such areas by 12/31/2017 if monitor was not operational.)	Area “moved” to modeling pathway
Ongoing data requirements	<p><u>Monitoring</u>: Continuous operation expected. May discontinue operation if below 50% of NAAQS during first or 2<sup>nd</sup> 3-yr period, or if meets 40 CFR 58.14 thereafter.</p> <p><u>If designated attainment based on actual emissions</u>: Annual review of emissions changes; conduct updated modeling if emissions changes warrant it.</p>	<p><u>Monitoring</u>: Two options regarding discontinuing operation:</p> <ol style="list-style-type: none"> <li>1) &lt;50% of NAAQS</li> <li>2) &lt;80% of NAAQS</li> </ol> <p><u>If designated attainment based on actual emissions</u>: New modeling required every 3 years.</p>

# Questions?

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For more information

SO<sub>2</sub> NAAQS Implementation Website:

<http://www.epa.gov/oaqps001/sulfurdioxide/implement.html>

For questions related to the DRR,  
please contact your respective  
Regional Office Contacts.

# Appendix: March 2015 Court-Ordered Designations Schedule

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- A March 2015 court order requires the EPA to complete designations for the 2010 SO<sub>2</sub> standard for all remaining areas in the country in up to three additional rounds:
  - By July 2, 2016:
    - Areas that have monitored violations of the 2010 SO<sub>2</sub> standard based on 2013 – 2015 air quality data; and
    - Areas that contain any stationary source not announced for retirement that according to EPA's Air Markets Database emitted in 2012 either (a) more than 16,000 tons of SO<sub>2</sub> or (b) more than 2,600 tons of SO<sub>2</sub> and had an average emission rate of at least 0.45 lbs SO<sub>2</sub>/mmbtu.
  - By December 31, 2017 – Areas where states have not installed and begun operating a new SO<sub>2</sub> monitoring network.
  - By December 31, 2020 – All remaining areas.
- For most areas, the data required by the final DRR will be available in time to inform the designations made under the court ordered schedule.