1-Hr \( \text{SO}_2 \) NAAQS
Designations and Implementation

A summary of the sequence of designation steps for four types of areas in the wake of the \( \text{SO}_2 \) NAAQS consent decree and final data requirements rule.

by Scott Janoe and Zach Craft

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The U.S. Environmental Protection Agency’s (EPA) 1-hr National Ambient Air Quality Standard for sulfur dioxide (SO₂ NAAQS) has triggered a reevaluation of all areas where air quality might exceed the standard.

In issuing its final rule establishing the current SO₂ NAAQS in 2010, EPA emphasized its views that it must “ensur[e] the NAAQS is attained everywhere as expeditiously as possible,” and to that end that dispersion modeling reflects “the most technically appropriate, efficient, and readily available method for assessing short-term ambient SO₂ concentrations in areas with large point sources.” SO₂ NAAQS attainment status has not been widely determined during the first five years, as EPA has so far designated only 29 SO₂ nonattainment areas in 16 states. The vast majority of the United States remains undesignated for the SO₂ NAAQS.

However, two subsequent actions have resulted in a flurry of EPA and state activity assessing ambient SO₂ levels. First, the agency entered a consent decree, which sets timelines for EPA to designate all remaining areas of the United States as attainment, nonattainment, or unclassifiable for the SO₂ NAAQS. Second, EPA issued its final SO₂ Data Requirements Rule directing states to take specific measures to determine SO₂ levels around numerous industrial facilities that collectively emit a majority of nationwide SO₂ emissions. For areas that are designated nonattainment for SO₂, the state air agency will become responsible for submitting a plan that will achieve compliance with
the SO2 NAAQS within five years of the designation.6 In addition, new and modified industrial facilities in that area will be subject to more stringent air permitting rules.7

This article summarizes the sequence of designation steps that follow from these two actions for four types of areas: areas containing coal-fired power plants, areas with monitoring data above the SO2 NAAQS,8 areas with sources emitting more than 2,000 tons per year SO2, and areas with clusters of smaller SO2 sources.

Areas with Coal-Fired Power Plants
Outside of the 29 SO2 nonattainment areas established in 2013, most of the areas to be designated next for the SO2 NAAQS are areas that include certain coal-fired power plants.9 Under the consent decree, EPA must designate areas containing plants that meet at least one of the following two criteria within 16 months of the consent decree’s entry (i.e., by July 2, 2016):10

• The plant emits more than 16,000 tons per year SO2; or
• The plant emits more than 2,600 tons per year SO2 with an annual average emission rate of at least 0.45 lb of SO2 per million BTUs.

The consent decree further specifies that these emission rates must be determined by reference to 2012 data from EPA’s Air Markets Database. As this database only includes power plants, and non-coal-fired plants would not be expected to have such SO2 emission rates, the criteria have the effect of only affecting coal-fired units.11 EPA’s latest announcement indicates that the agency has identified 68 plants that meet these criteria.12

EPA’s most recent guidance on SO2 designations advises that the agency expects to “consider county boundaries as the analytical starting point for determining SO2 nonattainment areas.”13 Thus, SO2 emissions sources located within a county or otherwise near a coal-fired power plant may also be affected by EPA designations.

Areas with SO2 Levels above the NAAQS
In addition to areas with coal-fired power plants, the consent decree also sets a July 2, 2016 deadline for EPA to designate for the SO2 NAAQS any areas that have not yet been designated but, “based on air quality monitoring in the three (3) full calendar years preceding such deadline have monitored violations of the 2010 revised primary SO2 NAAQS.”14

This part of the consent decree will likely affect a relatively small number of areas in addition to those containing coal-fired power plants. EPA’s March 2015 communications to the states on SO2 designations addressed areas that might meet this criteria based on 2012–2014 SO2 ambient monitoring data in Georgia, Hawaii, Missouri, North Dakota, Wisconsin, and Wyoming.15 It is possible that this list of areas may change: the list was compiled using 2012–2014 data, but the “three (3) full calendar years preceding” July 2, 2016 (i.e., the consent decree’s express basis for data that would trigger the July 2, 2016 deadline) would include 2013–2015.

Areas with Sources Emitting More Than 2,000 Tons
For areas with industrial facilities emitting more than 2,000 tons per year SO2, the designation timeline is more complex. To the extent such areas are not already subject to a July 2, 2016 deadline (i.e., based on the presence of a coal-fired power plant or ambient air monitoring data exceeding the SO2 NAAQS), EPA’s consent decree deadline to designate these areas will depend on the states’ decisions on how to implement the SO2 Data Requirements Rule, which applies to sources emitting more than 2,000 tons per year SO2.16

Two tracks are possible:

2017: First, “for a majority of the country,” EPA will promulgate an SO2 designation by December 31, 2017.17 The consent decree sets this deadline “for remaining undesignated areas in which, by January 1, 2017, states have not installed and begun operating a new SO2 monitoring network meeting EPA specifications.”18 In other words, the deadline is for all undesignated areas that have
not elected to use monitoring to comply with the SO$_2$ Data Requirements Rule. For sources subject to the SO$_2$ Data Requirements Rule, this provision of the consent decree may be construed to include areas for which a state elects to use dispersion modeling to characterize the SO$_2$ source,\textsuperscript{19} or sets an enforceable emission limit to reduce the source’s annual SO$_2$ emissions below 2,000 tons.\textsuperscript{20}

\textbf{2020:} Second, for those areas that are characterized using new ambient monitoring data under the SO$_2$ Data Requirements Rule, EPA will promulgate an SO$_2$ designation by December 31, 2020. The consent decree expressly applies this deadline to “all remaining undesignated areas” not covered by other consent decree deadlines.\textsuperscript{21} Read together with the other consent decree provisions, such areas would be limited to those that use ambient monitors to satisfy the data requirements rule and also lack prior nonattaining monitor data or a coal-fired power plant.

\textbf{Clusters of SO$_2$ Emission Sources}

Areas containing clusters of SO$_2$ emissions sources may be subject to the same designation deadlines as areas with sources above 2,000 tons per year—December 31, 2020—if characterized by new ambient SO$_2$ monitors, or otherwise December 31, 2017. This results from the SO$_2$ Data Requirements Rule’s applicability language, which extends to areas “that have been identified by the [state] air agency or the EPA Regional Administrator as requiring further air quality characterization.”\textsuperscript{22} EPA’s \textit{Federal Register} preamble suggests that the agency may plan to exercise this discretionary authority “where multiple smaller sources located in close proximity may collectively exceed the emissions thresholds and/or cause or contribute to NAAQS exceedances.”\textsuperscript{23}

\textbf{Conclusion}

Between the consent decree and the SO$_2$ Data Requirements Rule, EPA has set in motion a chain of events to develop significant new information
By 2020, EPA's new regime will affect a variety of SO2 sources over a large part of the United States. The first affected sources will generally be coal-fired power plants and any other large SO2 sources near them. By 2020, EPA's new regime will have the same effect for a variety of SO2 sources over a large part of the United States.

References
8. These areas appear most likely to be in Georgia, Hawaii, Missouri, North Dakota, Wisconsin, and Wyoming.
9. These areas are in Arkansas, Colorado, Georgia, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, New York, Ohio, Oklahoma, South Dakota, Tennessee, Texas, and Wisconsin.
10. Consent Decree at para. 1(b).
11. An exception to the July 2, 2016 deadline exists for coal-fired plants that have been announced for retirement. These units are not subject to the July 2, 2016 deadline. Consent Decree at paras. 1(b)-(c).
16. 40 C.F.R. § 51.1202 (eff. Sept. 21, 2015) (“This subpart applies to any air agency in whose jurisdiction is located one or more applicable sources of SO2 emissions that have annual actual SO2 emissions of 2,000 tons or more . . .”). As indicated below, EPA has also taken the position that clusters of SO2 sources may be subject to the SO2 data requirements rule.
17. 80 Fed. Reg. at 51,064, Tbl. 2.
18. Consent Decree at para. 2.
19. As allowed by 40 C.F.R. § 51.1203(d) (eff. Sept. 21, 2015).
21. Consent Decree at para. 3.
22. 40 C.F.R. § 51.1202 (eff. Sept. 21, 2015).

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