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Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO₂) Primary
National Ambient Air Quality Standard (NAAQS); Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[EPA-HQ-OAR-2013-0711; FRL-9928-18-OAR]

RIN 2060-AR19

Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard (NAAQS)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is promulgating a rule directing state and tribal air agencies (air agencies) to provide data to characterize current air quality in areas with large sources of sulfur dioxide (SO₂) emissions to identify maximum 1-hour SO₂ concentrations in ambient air. The final rule establishes minimum criteria for identifying the emissions sources and associated areas for which air agencies are required to characterize SO₂ air quality. Air agencies remain free to also characterize air quality in additional areas beyond those required to be characterized under the rule. The final rule also sets forth a process and timetables by which air agencies must characterize air quality through ambient monitoring and/or air quality modeling techniques and submit such data to the EPA. The EPA has issued separate non-binding draft technical assistance documents recommending how air agencies should conduct such monitoring or modeling. The air quality data developed by air agencies pursuant to this rule may be used by the EPA in future actions to evaluate areas' air quality under the 2010 1-hour SO₂ National Ambient Air Quality Standard (NAAQS), including area designations and redesignations, as appropriate.

DATES: This final rule is effective on September 21, 2015.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2013-0711. All documents in the docket are listed on the <http://www.regulations.gov> Web site. Although listed in the index, some information is not publicly available, *i.e.*, confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at

the Docket ID No. EPA-HQ-OAR-2013-0711, EPA/DC, William Jefferson Clinton West Building, Room 3334, 1301 Constitution Avenue NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744 and the telephone number for the Air and Radiation Docket Information Center is (202) 566-1742. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at: <http://www.epa.gov/epahome/dockets.htm>.

FOR FURTHER INFORMATION CONTACT: For further general information on this rulemaking, contact Dr. Larry D. Wallace, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, by phone at (919) 541-0906, or by email at wallace.larry@epa.gov; or Mr. Rich Damberg, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, by phone at (919) 541-5592, or by email at damberg.rich@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

Entities potentially affected directly by this final rulemaking include state, local and tribal governments. Entities potentially affected indirectly by this final rulemaking, depending on how state, local and tribal agencies choose to regulate such entities in the future, include owners and operators of sources of SO₂ emissions (such as coal-fired power plants, refineries, smelters, pulp and paper related facilities, waste incinerators, chemical manufacturers and facilities with industrial boilers for power generation) that contribute to ambient SO₂ concentrations, as well as people whose air quality is affected by these facilities.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this document will be posted at: <http://www.epa.gov/air/sulfurdioxide/implement.html>. Upon its publication in the **Federal Register**, only the published version may be considered the final official version of the notice, and will govern in the case of any discrepancies between the **Federal Register** published version and any other version.

C. How is this document organized?

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Statutory Authority

II. Background for Final Rulemaking

On May 13, 2014, the EPA proposed the Data Requirements Rule (DRR) for the 2010 1-hour SO₂ Primary NAAQS. The preamble to the proposal provided a discussion of the events that led to the EPA's proposal of a new regulation to direct state, tribal and local agencies¹ to better characterize ambient air SO₂ concentrations near large polluting sources. See 79 FR 27447, May 13, 2014. This discussion addressed the adoption of the 2010 SO₂ NAAQS and the suggested implementation approach described in the preamble of that rulemaking; the area designations process under section 107 of the Clean Air Act (CAA); the history of

¹ The final rule applies to air agencies in all states. The definition of "state" in section 302(d) of the Clean Air Act (CAA or Act) means a state, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands.

designations for prior SO₂ NAAQS, including the use of air quality modeling information; the Agency's subsequent issuance of an implementation white paper in May 2012 and input received from stakeholder groups; and the EPA's February 2013 SO₂ NAAQS implementation and designations strategy paper, developed in response to feedback received through this outreach process.² This final rulemaking notice does not repeat all of that discussion, but refers interested readers to the preamble of the proposed rule for this informative background.

The proposed rule noted that although the current SO₂ ambient monitoring network included more than 400 monitors nationwide, the scope of the network had certain limitations, and approximately two-thirds of the monitors are not located to characterize maximum 1-hour SO₂ concentration impacts from emissions sources. To more effectively assess potential public health impacts from exposure to high SO₂ concentrations, the proposed rule presented options for requiring air agencies to characterize air quality in the vicinity of large sources of SO₂ emissions that exceed specified annual emissions thresholds. The EPA's proposed preferred emissions threshold option specified that air agencies would be required to characterize air quality in the vicinity of sources that emit over 1,000 tons of SO₂ per year and are located in more highly populated areas (*i.e.*, Core-Based Statistical Areas (CBSA) with population of at least 1 million), and in the vicinity of sources that emit over 2,000 tons of SO₂ per year and are located outside metropolitan areas of at least 1 million population. The EPA also identified two other emission threshold options and requested public comment on these potential emission thresholds values, a CBSA population threshold of 1 million, the combination of emissions and population thresholds as a means of determining how SO₂ sources would be identified, and on any possible alternatives. Under the proposed approach, air agencies, or the EPA, also could require air quality characterization around other sources, if warranted. *See* 79 FR 27453, May 13, 2014.

Under the proposed rule, air agencies would determine for each emissions source exceeding the threshold whether

air quality characterization for that source would be done either through air quality modeling analysis or by conducting ambient monitoring. Apart from the proposed rule, the EPA issued two draft technical assistance documents (TADs) on modeling and monitoring to assist air agencies with this analytical work. The proposed rule also described a process and timetable by which air agencies would be required to identify sources to be characterized, conduct the relevant analyses and submit such data to the EPA. *See* 79 FR 27456, May 13, 2014.

Specific technical considerations regarding air quality monitoring and modeling were also discussed in the proposed rule, along with options for ongoing verification of the air quality characterization in areas that are not otherwise designated as nonattainment. *See* 79 FR 27460, May 13, 2014. The proposal also discussed incentives for air agencies and sources to work together to establish federally enforceable limits on emissions expeditiously in order to avoid requirements for air quality characterization altogether. We refer readers to the proposed rule for the technical, policy and legal rationale that were presented in support of the proposal, and for a complete discussion of the issues for which the EPA requested public comment. Several supporting memoranda, analyses and data were included in the docket for the proposed action.

The 60-day public comment period for the proposed rule closed on July 14, 2014. In section IV of this preamble, we summarize each key issue from the proposal, briefly summarize major comments received and provide a response, and describe the final policy in the rule, including any changes made to the approaches presented in the proposal. A more detailed response to comments document can be found in the docket for this rulemaking.

III. Summary of the Final Rule Requirements

This section provides a brief summary of the requirements of the final rule. Further discussion of the basis for these requirements and responses to significant comments are provided in the next section. The EPA believes that the approach set forth in this rule directing air agencies to gather additional data to characterize ambient air in the vicinity of larger SO₂ sources is uniquely suited for implementation of the 1-hour SO₂ NAAQS, and the Agency does not anticipate it to be used for other NAAQS pollutants. The final rule establishes minimum requirements for

air agencies to characterize 1-hour SO₂ air quality concentrations across the country, with an emphasis on doing so in the vicinity of sources that have the largest annual SO₂ emissions. Note that there are already minimum SO₂ ambient monitoring requirements in place that were established when the 1-hour SO₂ NAAQS was adopted. *See* 75 FR 35520, June 22, 2010. The requirements in the present rule supplement those monitoring requirements, which remain in place. As discussed in more detail in the next section, these requirements are intended to establish a flexible yet effective program for characterizing SO₂ air quality in priority areas across the country, given existing funding and resource constraints, and given the particular characteristics of SO₂ air pollution in the affected areas. This final rule also reflects the fact that numerous larger sources of SO₂ across the country have in recent years installed, and are expected to install in the near future, additional control measures that may substantially reduce SO₂ emissions in some cases.

Under this rule, each air agency is required to submit a list to the EPA by January 15, 2016, that identifies all sources within its jurisdiction that have SO₂ emissions that exceeded the 2,000 tons per year (tpy) annual threshold during the most recent year for which emissions data for that source are available, plus any additional sources and their associated areas identified by the air agency or by the EPA as also warranting air quality characterization. (The list is a permanent list of prioritized sources that excludes sources in areas designated as nonattainment before January 2016 and is not altered by designations after January 2016.) The rule requires air quality characterization of the area associated with each listed source, and provides two options for this characterization, namely the use of monitoring or modeling. The final rule also provides a third option, under which air agencies would establish a limit requiring emissions from a listed source to be below the 2,000 tpy threshold, which, with the concurrence of the EPA Regional Administrator, would result in that source and its associated area not being subject to requirements for air quality characterization. The EPA anticipates discussions with air agencies early in 2016 to resolve any questions as to what areas warrant air quality characterization. These discussions are intended to address whether any additional areas (*e.g.*, areas with clusters of sources) warrant air quality

² The May 2012 White Paper and high-level summaries of stakeholder meetings are available at: <http://www.epa.gov/oaqps001/sulfurdioxide/Implement.html>. These documents and written comments received from stakeholders are also included in the docket for this rulemaking.

characterization, whether existing monitoring networks might serve to address air quality characterization requirements, and whether any new limits intended by the air agencies negate the need for air quality characterization.

For each source on the list, the air agency will be required to indicate by July 1, 2016, whether it will characterize air quality through ambient monitoring or through air quality modeling or, alternatively, whether it will be subjecting the pertinent source or sources to emission limit(s) that will keep the source(s) below this rule's 2,000 tpy threshold. The option identified by the air agency for each source and its associated area will determine the submittal and timing requirements for the air agency to provide the required information.

If the air agency chooses the first option, ambient monitoring for a source, the air agency must include information about the planned new monitor(s) in the annual monitoring plan that the air agency must submit to the EPA by July 1, 2016; and the air agency must also ensure that the new monitor(s) are operational by January 1, 2017. The required monitors shall be sited and operated either as State and Local Air Monitoring Stations³ (SLAMS) or in a manner equivalent to SLAMS. In either case, monitors shall be subject to reporting and data certification requirements as prescribed in 40 CFR 58.15 and 58.16 (*e.g.*, quarterly reporting of monitoring data to the Air Quality System, and the annual certification of data by May 1 of the following year), and must satisfy applicable criteria in 40 CFR part 58, appendices A, C, and E.

If the air agency chooses the second option, air quality modeling for a source, it must submit a modeling protocol for each such source to the EPA by July 1, 2016, for review and consultation with the EPA Regional Office. The modeling analyses must then be submitted to the EPA by January 13, 2017.

If the air agency chooses the third option, to provide federally enforceable emissions limitations that limit emissions of an applicable source to less than 2,000 tpy, or to provide documentation that the applicable source has permanently shut down, the air agency must notify the EPA of its decision by July 1, 2016, and provide a

description of the planned emission limitation, including identification of the level of the limitation being planned. Especially in areas with multiple sources, the limit(s) should be sufficiently low as to avert the need for air quality characterization that applies for other listed sources. Therefore, the rule requires the concurrence of the EPA as to whether the limit that the air agency intends will suffice in lieu of conducting air quality characterization. By January 13, 2017, the air agency must provide EPA with documentation demonstrating that the emission limits are federally enforceable, adopted, and require compliance by January 13, 2017, in order for areas containing such sources to avoid the need to characterize ambient SO₂ emissions under the rule. If EPA approval is required to make a limit federally enforceable, the submittal must be sent to the EPA early enough such that the EPA has enough time to complete a rulemaking to make the limit federally enforceable by the January 13, 2017, date.

Section IV.D of this preamble provides a discussion of selected technical considerations related to characterizing air quality, but the rule does not prescribe how an ambient monitoring network around an identified SO₂ source is to be designed, or how air quality modeling must be specifically done to meet the objectives of this rule. As stated in the proposal, the EPA has developed TADs that provide approaches on ambient monitoring and air quality modeling when planning and executing air quality characterization activities, and recommends that air agencies refer to these documents to support their efforts. For example, the TAD for ambient monitoring suggests potential options and recommendations on different analyses and approaches that could be considered to help the air agency site source-oriented SO₂ monitors in locations of expected maximum 1-hour concentrations. The TAD for air quality modeling explains that refined dispersion models are able to characterize SO₂ air quality impacts from the modeled sources across the domain of interest on an hourly basis with a high degree of spatial resolution. It suggests that in order to characterize recent air quality levels around a source, it would be acceptable to use actual hourly emissions data, actual meteorological data and actual stack height information as technical inputs to the modeling analysis. However, it is important to note that, except to require that monitoring be sited and operated in a manner equivalent to SLAMS and to

provide that modeling may be based on actual or allowable emissions, this rule does not promulgate any specific requirements with regard to these analytical approaches, and air agencies are expected to use their best professional judgment, consulting as appropriate with the EPA, in conducting these analyses. Air agencies should also contact their respective EPA Regional Offices regarding any additional issues beyond those addressed in the TADs.

The final rule also includes provisions specifying how characterization requirements for listed sources continue into the future (*i.e.*, ongoing data requirements). For areas where air quality is to be characterized through ambient monitoring, the rule requires the monitoring to be conducted for the calendar years of 2017 through 2019, in order to calculate a valid design value for each area. The rule requires that air agencies (or other parties conducting the monitoring) continue the operation of all existing and new monitors used to meet the requirements of this rule. However, it also provides for the possibility that an air agency may obtain EPA approval to terminate operation of a monitor that was established to meet the requirements of this rule if the air quality values at the monitor are low enough to meet specific criteria. Following commencement of operation of a new monitor, the air agency may seek EPA approval to terminate operation of the monitor pursuant to § 51.1203(c)(3) of this rule, if the monitored design value for the first 3-year period or second 3-year period is no greater than 50 percent of the 1-hour SO₂ NAAQS. After the fourth year following commencement of operation of a new monitor, the air agency may be able to seek approval to shut down the monitor if it meets the criteria specified in existing regulations at 40 CFR 58.14.

For areas that were characterized using air quality modeling, the ongoing data requirement applies only where the modeling was based on actual emissions and where the area has not subsequently received a nonattainment designation. In such cases, the air agency will be required to submit an annual report to the EPA providing updated emissions information and recommending to the EPA whether further modeling is warranted to assess any expected changes in recent air quality. For example, it may be appropriate for the air agency to conduct updated modeling for an area if there have been increases in short term emissions rates, an increase in annual emissions, or changes in facility operations. Where warranted, the air agency shall conduct

³ The SLAMS network is an air quality surveillance system that consists of a network of monitoring stations designated as SLAMS which measure ambient concentrations of those pollutants for which standards have been established in 40 CFR part 50.

updated modeling to characterize air quality in light of the identified emissions changes and present the results in its annual report to the EPA. Analogous to the monitor shutdown provisions noted earlier, the requirement for the annual emissions assessments for an area originally characterized by modeling may be terminated if the air agency provides a modeling analysis demonstrating that actual emissions in the previous year for SO₂ sources in the area results in a modeled design value that does not exceed 50 percent of the NAAQS at any receptor within the modeling domain. While the annual assessment requirement under this rule would be terminated in such cases, any other EPA requirements to provide data (e.g., for the Air Emission Reporting Rule (AERR)) would not be affected.

The EPA received more than 80 comments on the proposed rule. Taking into consideration the range of comments received, the EPA made a number of revisions that are reflected in the final rule, including the following:

- The source emissions threshold approach was changed to a single 2,000 ton annual SO₂ emissions level, so the final rule does not include thresholds that vary depending on the population of the area.

- Air agencies still need to identify in January 2016 a list of sources in their jurisdiction for which air quality is to be characterized, but they now have until July 2016 to indicate whether, for each source, they plan to use modeling or monitoring to characterize air quality, or to adopt an enforceable emissions limit. (The rule clarifies that this list would not include any source located in an area already designated as nonattainment for the 2010 SO₂ NAAQS.) The approach in the proposal would have required the air agency to indicate its planned approach for each source in January 2016.

- The final rule also includes a set of monitor shutdown provisions that is a hybrid of the options included in the proposed rule and the existing monitor shutdown provisions in 40 CFR part 58. A monitor required under this rule would be eligible for shutdown if it has a design value less than 50 percent of the SO₂ standard during one of the first two 3-year periods of operation. After this point in time, any potential shutdown would need to meet the basic shutdown provisions that apply for SLAMS monitors as described in 40 CFR 58.14.

- The proposal took comment on three potential approaches for ongoing requirements for air agencies to provide modeling or emissions data for areas

that were originally characterized with modeling based on actual emissions data. As noted earlier, the approach in the final rule requires the air agency to provide emissions data to the EPA annually for all sources not designated as nonattainment, and to recommend to the EPA whether an emissions change was substantial enough to warrant updated air quality modeling.

- A number of commenters suggested that an air agency should be able to avoid the air quality characterization requirement for a source if it adopted a federally enforceable requirement limiting annual emissions at the source to less than 2,000 tpy. The final rule now includes such a provision. This type of limit would need to be adopted and in effect by January 2017.

IV. Responses to Significant Comments on the Proposed Rule

A. The Use of Monitoring and/or Modeling Data

1. Legal Authority To Require States To Submit Data Pursuant to This Rule

a. Summary of Proposal

In the proposed rule, the EPA explained that the requirements for the air agency to submit the SO₂ monitoring and modeling data described in § 51.1203 of the proposed rule are appropriate steps needed to understand SO₂ air quality throughout the country, and are consistent with section 110(a)(2)(B), section 110(a)(2)(K) and section 301(a)(1) of the CAA. *See* 79 FR 27457, May 13, 2014.

b. Brief Summary of Comments

Some state commenters asserted that the DRR modifies the CAA and imposes new monitoring and modeling obligations on air agencies. One commenter suggested that requiring states to develop monitoring or modeling data in accordance with this proposal modifies the statutory mandate to designate all areas by June 2013 because the EPA intends to use these data for designations. One industry commenter stated it is not appropriate to replace the CAA's statutory directive for designations with extra-statutory provisions like those proposed in the DRR.

Several state and industry commenters stated that the proposed requirements and schedules conflict with requirements that apply to the EPA to timely complete designations under section 107 of the CAA. These commenters stated that the CAA required the EPA to make area designations under the new SO₂ standard no later than June 3, 2013, and

that the EPA failed to comply with that mandatory obligation. Therefore, the commenters claimed, the DRR proposal's discussion of a schedule for issuing designations by December 2020 is beyond the EPA's authority. One state commenter cited *EME Homer City Generation LP v. Env't'l Prot. Agency*, 696 F. 3d 7, 27 (D.C. Cir. 2012) and stated that the DRR cannot stand as proposed because it fails to follow the mandatory timelines for promulgating area designations, and, therefore, exceeds the EPA's statutory authority.

c. EPA Response

The comments that assert that the EPA has not designated areas under the 2010 SO₂ NAAQS in a timely manner are beyond the scope of this rulemaking, and are not germane to the issue of the EPA's statutory authority to direct air agencies to conduct monitoring or modeling to further characterize ambient air concentrations of SO₂. Through this rulemaking, the EPA is not establishing or modifying any area designation requirements provided for in section 107 of the CAA, nor does any aspect of this final rule conflict with any provision of section 107 that directs states and the EPA to take timely action to issue designations. The purpose and effect of this rulemaking is to require air agencies to characterize air quality in priority areas throughout the country where existing ambient monitors may not be adequately characterizing peak 1-hour SO₂ ambient air concentrations. The air quality data obtained as a result of this rulemaking then may be used in future analytical actions by the EPA, including designations of any undesignated areas or redesignations of already designated areas. It is true that in the proposed rule preamble we discussed how the timing of the implementation of this rule would fit with our intended schedule for completing area designations, but the proposal did not itself purport to establish a binding schedule for completing designations.

The EPA notes that litigation was filed against the EPA to compel the Agency to complete designations under CAA section 107, and on March 2, 2015, the court in one of those cases issued a ruling that places the EPA on a binding schedule to complete area designations for the 2010 1-hour SO₂ NAAQS. *See, Sierra Club, et al. v. McCarthy*, Case No. 13-cv-03953-SI (N.D. Cal., March 2, 2015) (Order Granting Joint Motion To Approve And Enter Consent Decree And Denying Other Motions As Moot; and Consent Decree). Copies of the court's order and the March 2015 consent decree setting forth the EPA's schedule

for completing designations have been placed in the docket for this rulemaking. Under the schedule ordered by the court, the EPA is required to complete the designations in no more than three future rounds.

First, by July 2, 2016 (16 months from the date of the court's order), the EPA must sign a notice for publication in the **Federal Register** that promulgates designations for remaining undesignated areas that: (a) Based on air quality monitoring in the three full calendar years preceding that date have monitored violations of the NAAQS; or (b) contain any stationary source that has not by March 2, 2015, been "announced for retirement" and that, according to data in the EPA's Air Markets Database, either (1) emitted more than 16,000 tons of SO₂ in 2012, or (2) emitted more than 2,600 tons of SO₂ and had an annual average emission rate of 0.45 lbs. SO₂/Mmbtu or higher in 2012. (The March 2015 consent decree defines "announced for retirement" as meaning "any stationary source in the United States with a coal-fired unit that as of January 1, 2010, had a capacity of over five (5) megawatts (MW) and that has announced it will cease burning coal at that unit through a company public announcement, public utilities commission filing, consent decree, public legal settlement, final state or federal permit filing, or other similar means of communication.")

Second, by December 31, 2017, the EPA must sign such a notice promulgating designations for remaining undesignated areas in which, by January 1, 2017, states have not installed and begun operating a new SO₂ monitoring network meeting EPA's specifications referenced in this rulemaking. Finally, by December 31, 2020, the EPA must sign a notice promulgating designations for all remaining undesignated areas.

The EPA notes that the schedule imposed by the court will allow at least the latter two stages of designations to be informed and benefited by the additional information that is timely obtained pursuant to this final rule, as appropriate. However, we also note that the round of designations that is required to be completed by July 2, 2016, will likely be conducted before state air agencies and the EPA will have been able to implement this final rule, and will instead rely upon data and information that is separately developed or obtained during the designations process. Nevertheless, as explained later in this document, depending on how those areas become designated in 2016, the rule may still result in additional

information that could inform future assessments of attainment status for such areas.

The EPA continues to believe that the requirements of this rule for air agencies to submit a list of sources where further air quality characterization is needed, and the other data submittal requirements found in § 51.1203 of this rule, are appropriate steps needed to better understand SO₂ air quality throughout the country, and are consistent with section 110(a)(2)(B), section 110(a)(2)(K), and section 301(a)(1) of the CAA. The commenters did not challenge this view. Section 110(a)(2)(B) indicates that State Implementation Plans (SIPs) are to "provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile and analyze data on ambient air quality and (ii) upon request, make such data available to the Administrator." Section 110(a)(2)(K) states that SIPs shall "provide for (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a NAAQS, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator." Section 301(a)(1) provides the EPA with general authority to establish regulations as necessary to carry out the agency's functions, which in this case includes ensuring the attainment of the SO₂ NAAQS throughout each state. This section states that "The Administrator is authorized to prescribe such regulations as are necessary to carry out his functions under this chapter."

The EPA often establishes and revises monitoring requirements for implementing NAAQS. Those requirements will not necessarily always generate new information in time to inform timely area designations under CAA section 107. *See, e.g.*, 75 FR 81126, 81130, December 27, 2010. The validity of such rules does not depend upon whether information generated pursuant to those requirements will be gathered in time to support designations that are timely under section 107. Here, the commenters have raised no objection to the central premise of the rule, which is that additional information that better characterizes air quality near larger sources of SO₂ is warranted and is authorized to be required under sections 110 and 301 of the Act. Irrespective of when the EPA uses this information—for example, irrespective of whether the EPA

promulgates initial designations of "unclassifiable" (and then uses the information collected pursuant to this data requirements rule in later redesignations), or whether the EPA promulgates the remaining designations after the information required here becomes available—the EPA believes that this rule is authorized and is warranted. Therefore, in this final rulemaking, the commenters have provided no basis for the EPA to not require air agencies to submit such SO₂ monitoring and modeling data to the EPA, as proposed. The final rule is fully consistent with the Agency's broad authority under section 110 and 301, as well as with the EPA's authority under CAA section 114(a)(1) to direct any person to provide information as is reasonably required to improve characterization of ambient air quality near larger sources of SO₂.

2. Legal Authority To Base Air Quality Evaluations on Modeling Data

a. Summary of Proposal

In the proposal, the EPA stated that existing air quality modeling tools are technically sound and historically have been used to characterize SO₂ air quality when monitoring data were not available; therefore, the EPA considers these modeling tools appropriate for assessing air quality impacts from SO₂ emissions. The EPA stated that historical use of modeling to characterize SO₂ air quality concentrations has been affirmed as technically valid and lawful under the CAA by reviewing courts. *See* 79 FR 27448, May 13, 2014.

b. Brief Summary of Comments

Some industry group commenters stated that the DRR provisions allowing for modeling to characterize ambient SO₂ concentrations go beyond what is necessary to comply with the CAA, arguing that 40 CFR 50.17 provides that monitoring is the sole basis for determining attainment. Commenters stated that the precise wording of 40 CFR 50.17 establishes ambient air monitoring as the only basis for determining if the SO₂ NAAQS is being met because it specifies that:

(a) The level of the national primary 1-hour ambient air quality standard for oxides of sulfur is 75 parts per billion (ppb, which is 1 part in 1,000,000,000), measured in the ambient air as SO₂.

(b) The 1-hour primary standard is met at an ambient air quality monitoring site when the 3-year average of the annual (99th percentile) of the daily maximum 1-hour average

concentrations is less than or equal to 75 ppb, as determined in accordance with appendix T of this part.

(c) The level of the standard shall be measured by a reference method based on appendix A or A-1 of this part, or by a Federal Equivalent Method (FEM) designated in accordance with part 53 of this chapter.

One public interest group commented that the provisions in the proposed DRR for conducting modeling are consistent with the EPA's historic use of air dispersion modeling for multiple NAAQS implementation purposes. This public interest group stated that dispersion modeling has a lengthy history as an appropriate tool for use in SO₂ designations and other actions, and provided several references to the EPA's documents and to court rulings to demonstrate that historic use.

In contrast, without disputing the fact that the EPA has often relied upon modeling to inform decisions implementing the SO₂ NAAQS, several state and industry commenters stated that monitoring, not modeling, has historically been used for designation of areas as attainment or nonattainment under this and other NAAQS. Several industry commenters supported the EPA's use of notice-and-comment rulemaking through the DRR to address certain major issues, including the use of monitoring and/or modeling to characterize air quality and make remaining area designations.

c. EPA Response

This final rule does not make any decisions or determinations regarding whether any area is in fact meeting or not meeting the NAAQS based on either monitoring or modeling information. Those decisions will be made in separate future actions, or have already been made for some areas in prior actions. *See e.g.*, 78 FR 47191, August 5, 2013. Therefore, this final rule does not take final action on the issue of whether it is permissible to implement the commenter's previous quoted provisions of 40 CFR 50.17(a)–(c) based on a combination of both monitoring and modeling information where both are available, or exclusively on modeling information where appropriate modeling information is available and monitoring is not. The commenters' objections appear to focus on how future-gathered information resulting from the rule may or can be used in subsequent NAAQS implementation actions, but the focus of this rule is on the initial gathering of the information itself. In future designation, redesignation, or other implementation actions, commenters may raise their

objections to the validity of information that the EPA relies upon in those specific actions, but such objections are beyond the scope of this final rule.

The commenters appear to be raising objections that were also raised after the EPA's promulgation of the 2010 SO₂ NAAQS, in response to the EPA's final rule preamble discussion explaining the Agency's then-intended implementation approach under the NAAQS. In their petitions for judicial review of the NAAQS, several states claimed that the EPA's discussion of the intended use of modeling in NAAQS implementation contravened the regulatory text of § 50.17. However, noting that the petitioners' claims addressed potential final implementation actions that had not yet in fact occurred, the U.S. Court of Appeals for the D.C. Circuit dismissed the petitioners' claims without addressing their merits, or lack thereof. *See National Environmental Development Association's Clean Air Project v. EPA*, 686 F.3d 803 (D.C. Cir. 2012). Likewise here, the EPA is not yet taking any action to apply modeling regarding any decision of whether an area is or is not meeting the NAAQS.

In any event, we note that although 40 CFR 50.17(a)–(c) very clearly sets forth the criteria for determining whether the NAAQS is met at a monitoring site, it does not by its terms restrict how such decisions may be made more broadly in areas impacted by SO₂ sources, including areas where there are no monitoring sites or where monitors are not sited at the point of maximum ambient concentration. Indeed, it is the relative scarcity of such monitors that has caused the EPA to undertake this rulemaking to enable states and the Agency to better understand just what the ambient air impacts are from larger sources of SO₂, which may not be captured by the current limited monitoring network. It is true that past area designations processes for most NAAQS (such as for ozone) having violations caused and contributed to by multiple sources over a broad region have relied primarily on air quality monitoring data to identify areas that violate the standard. However, it is important to note, as the EPA explained in the final 2010 SO₂ NAAQS preamble, that there is a long history of also using dispersion modeling information to inform area designations for the SO₂ NAAQS. *See, e.g.*, 75 FR 35551, June 22, 2010.

The EPA and the air quality management community have recognized over many years that peak concentrations of SO₂ are commonly caused by one or a few major point sources in an area, and that peak

concentrations are typically observed relatively close to the source. Many factors influence the observed SO₂ concentrations around emissions sources, including the sulfur content of fuel that is combusted, the sulfur content of material being heated as part of an industrial process, the rate of SO₂ emissions per hour, stack height, topography, meteorology, monitor location and source operating schedule. But because ambient SO₂ concentrations are not the result of complex atmospheric chemical reactions (unlike ozone or PM_{2.5}), they can be modeled accurately using well-understood air quality modeling tools, especially in areas where one or only a few sources exist. In the 1970's, when the original SO₂ NAAQS were established, there were significantly more SO₂ monitors in operation nationally than today. Even then, the EPA and air agencies acknowledged the utility of modeling in order to inform area designations under the SO₂ NAAQS. *See e.g.*, 43 FR 45993, October 5, 1978.

3. The Use of Monitoring and/or Modeling for Making Decisions About Air Quality

a. Summary of Proposal

In the proposed rule, the EPA explained that the current ambient SO₂ monitoring network, on the whole, is not appropriately positioned, or of adequate size, for purposes of the 2010 SO₂ standard to characterize the air quality around many of the nation's larger SO₂ sources in operation today. The EPA stated that, because ambient SO₂ concentrations are not the result of complex chemical reactions (unlike ozone or PM_{2.5}), they can be modeled accurately using well understood air quality modeling tools, especially in areas where one or only a few sources exist. However, the EPA noted that some areas may not be conducive to modeling, and for such areas the EPA encouraged air agencies to consider using enhanced monitoring to characterize air quality. *See* 79 FR 27448, May 13, 2014.

b. Brief Summary of Comments

Several state and industry commenters supported the provision in the proposed rule allowing air agencies to have the option to use modeling and/or monitoring to characterize SO₂ ambient air concentrations, as it provides appropriate flexibility for both the states and affected sources. Several commenters supported the EPA's observation that modeling may not be appropriate for all SO₂ evaluation scenarios, and supported the ability of

states to choose to evaluate NAAQS attainment through either dispersion modeling or ambient monitoring. However, several state and industry commenters cautioned that monitoring data should be the primary basis for such decisions, especially designating nonattainment areas. Several commenters claimed that, as modeling is frequently affected by factors such as emissions inputs, meteorological data and local geography, it is not as accurate or reliable as real-time, multiple-year monitoring. Other commenters claimed that modeling is advantageous because it characterizes air quality in all directions around a source with appropriate accuracy and can be done with less expense than ambient monitoring, which only characterizes air quality at a single location. Some industry commenters suggested the text of proposed § 51.1201 be revised to state that monitoring is the EPA's preferred analytical approach under the rule.

c. EPA Response

The EPA agrees with commenters who stressed the need to give air agencies the option to characterize SO₂ ambient air quality through either enhanced monitoring or modeling, and the EPA is maintaining that approach in this final rule. The EPA believes that the commenters have not presented any persuasive reasons for changing the basic positions previously discussed in the preamble to the final rule of the 2010 SO₂ NAAQS rulemaking, the February 2013 Strategy Paper, or in the proposed rule for why both air quality modeling and ambient monitoring are appropriate tools for characterizing ambient air quality for purposes of informing future decisions to implement the SO₂ NAAQS. However, as explained earlier, in this final rule the EPA is not taking final action to make any determinations regarding any area's status with respect to attaining or not attaining the NAAQS, but is only prescribing criteria and a process for how and when air agencies are to gather and provide to the EPA additional needed information. How the information is used in subsequent actions evaluating the attainment status of specific areas will depend upon the information that air agencies collect in the future and what it shows about areas' ambient air quality.

B. Source Coverage and Emission Threshold Options

1. Summary of Proposal

In the proposal, the EPA recognized that the characterization of air quality in areas around more than 20,000 SO₂

sources nationally would not be feasible. The proposal stated that the key objective to be achieved by using SO₂ source emission thresholds would be to focus the limited available resources at the state, tribal, local and federal levels toward characterizing air quality in areas having the largest SO₂ emitting sources due to the fact that larger sources can be expected to be the most likely potential contributors to violations of the SO₂ NAAQS. The EPA stated in the proposed rule that, just as NAAQS ambient monitoring networks are designed to measure air quality in areas meeting specific criteria where the public is likely to be exposed and violations may be likely to occur, the SO₂ annual emission threshold options in the rule are designed to meet a similar objective. *See* 79 FR 27453, May 13, 2014.

In considering how to develop effective options for identifying the minimum set of sources around which states would be required to characterize ambient air quality, we considered three important issues and requested comment on each:

- What would be an appropriate emissions metric for identifying sources?
- Should the threshold options require characterization of smaller sources in areas with higher populations?
- What would be an appropriate threshold for identifying sources near which air quality is to be characterized?

The notice of proposed rulemaking also addressed a number of additional elements of the implementation of these thresholds. In the discussion below, the EPA summarizes these additional proposed features, summarizes comments on these proposed features, and describes the EPA's responses. Note that this section is structured so that all the issues related to emissions thresholds are presented together before proceeding to the comment summaries on these issues, and then to the EPA's responses and final decision.

a. Emissions Metric: What would be an appropriate emissions metric for identifying sources?

The proposal presented a discussion about what emissions-related metric would be most appropriate for this rule. The proposal noted that for the 1-hour SO₂ NAAQS, the ideal metric for identifying sources near which air quality is to be characterized would be a 1-hour SO₂ emissions rate. However, the EPA observed that while 1-hour SO₂ emission rate data are available for most electricity generating units (EGUs)

because they operate continuous emission monitors, many non-EGUs do not operate continuous emission monitors on all emission points and produce 1-hour data. For this reason, the proposal stated that the emissions threshold options presented in this rulemaking should be expressed in terms of annual emissions of SO₂ because annual emissions information is readily available for all large SO₂ sources.

The EPA requested comment on the use of annual emissions (*i.e.*, tons of SO₂ per year) as the metric to be used for an emissions and population-based threshold approach, or, alternatively, for a solely emissions-based threshold approach, to identify SO₂ sources around which further ambient air quality characterization with respect to the 1-hour SO₂ NAAQS might be required. The EPA also requested comment on any potential alternative factors that should be considered for defining emissions thresholds, along with any information about the availability of data related to any alternative factor for all SO₂ sources nationally, the time and resources needed to develop a database for this alternative factor, any associated technical analysis and rationale for using these other factors in defining source thresholds. *See* 79 FR 27454, May 13, 2014.

b. Should the threshold options require air quality characterization near smaller sources in areas with higher populations?

In the proposed rule, the proposed emissions threshold option and the other two options on which the EPA requested comment each had a "two-pronged" form. Each potential option was expressed with a higher emissions threshold for identifying sources located outside of CBSAs with a population equal to or greater than 1 million persons, and a lower emissions threshold for identifying sources located within such CBSAs. The reasoning given for this proposed approach was that a lower threshold for urban sources could help increase public health protection because there are more people in an area that could be impacted by relatively smaller sources. The EPA requested comment on its proposed use of the 1 million person CBSA population threshold for representing the population exposure component of the source threshold options in this rule. The EPA also requested comment on whether to include a population exposure-based threshold at all; and on whether alternative, or additional, criteria would

be appropriate to further focus resources on characterizing air quality in areas with a higher likelihood of population exposure. *See* 79 FR 27455, May 13, 2014.

c. What is an appropriate threshold level or levels for identifying sources near which air quality is to be characterized?

The EPA proposed one preferred option and took comments on two additional options. Option 1 (proposed preferred option) would require ambient air quality characterization around any source with annual emissions greater than 1,000 tpy and which is located within a CBSA having 1,000,000 or more persons, and around sources with emissions greater than 2,000 tpy located outside CBSAs having 1,000,000 or more persons. Option 2 would require ambient air quality characterization around sources with emissions greater than 2,000 tpy that are located within any CBSA having 1,000,000 or more persons, and around sources with emissions greater than 5,000 tpy located outside CBSAs having 1,000,000 or more persons. Option 3 would require ambient air quality characterization around sources with emissions greater than 3,000 tpy that are located within any CBSA having 1,000,000 or more persons, and around sources with emissions greater than 10,000 tpy located outside CBSAs having 1,000,000 or more persons.

The EPA requested comment on the preferred option and the other two options described in the proposal. The EPA also requested comment on any possible alternatives that might be appropriate for consideration. The EPA requested comment on the scope of sources for which we would require data. In addition, the EPA also requested any information identifying sources that would be identified by these options but that have confirmed documentation to show that they will shut down in the next several years.

d. Discretion for Air Agencies and the EPA To Address Additional Sources

The EPA noted in the proposed rule that, in addition to meeting the requirements to provide information regarding areas with sources over the future promulgated thresholds, there may still be situations where an air agency would need to characterize air quality for other sources below the thresholds; specifically, where the air agency, or the EPA Regional Administrator, determines that they may have the potential to violate the NAAQS. Application of air quality characterization requirements was noted

to be possibly warranted, for example, where multiple smaller sources located in close proximity may collectively exceed the emissions thresholds and/or cause or contribute to NAAQS exceedances. *See* 79 FR 27455, May 13, 2014.

2. Summary of Comments

This section provides a brief summary of comments received on each of the four source threshold issues identified previously, as well as additional features of the EPA's proposed implementation of thresholds.

a. Comments on an Appropriate Emissions Metric

Most commenters that addressed the emissions metric issue supported using annual SO₂ emissions (in tpy) as the appropriate metric for defining source thresholds. Several commenters stated that it is most appropriate to evaluate annual emissions since these data are widely reported to the EPA and are readily available. Some industry commenters stated that using an annual emissions based threshold approach for identifying areas to be evaluated would serve to make more manageable the demands on state, tribal, local and federal resources. Several other commenters stated that the use of additional factors such as stack height, 1-hour SO₂ emission rate, proximity to sensitive populations, and topography would make the source identification process unnecessarily difficult and time consuming. On the other hand, a few regulatory agency commenters urged the establishment of supplemental criteria based on short-term spikes in emissions.

b. Comments on Whether the Options Should Require Characterization Near Smaller Sources in Areas With Higher Populations

A number of state and industry commenters supported the application of a lower emission threshold in urban areas. Some commenters stated that population centers represent locations of higher potential public exposure and, therefore, characterization of air quality in these areas would be more representative of the public's SO₂ exposure risk. Several state and industry commenters stated that a threshold approach based purely on emissions could inappropriately focus limited resources on areas with limited to no public exposure. Some state commenters noted that, as a precedent, a population threshold has been used to establish the minimum monitoring requirements for the SO₂ NAAQS as well as the NAAQS for nitrogen dioxide,

carbon monoxide, and particulate matter.

Some commenters stated that many sources located within an existing CBSA are located on the edge of the boundary in less populated areas and urged the EPA to consider more refined census data based on population density. One industry commenter suggested, for example, that the EPA could use population density data around the affected facilities out to a radius of 10 kilometers (km) and, if average population density from the 2010 census in this area exceeds a certain threshold (e.g., 100 persons/square km), then the lower emissions criteria would be used. Some tribal commenters, some environmental group commenters, and some state commenters recommended against applying different thresholds in less populated areas, in order to assure that all areas are equally protected against violations of the air quality standard.

c. Comments on Source Threshold Options

One public interest group and several states urged the EPA to adopt the proposed Option 1 level of 1,000 tpy, but apply it uniformly, regardless of population in order to ensure a basic level of health protection to people who live around the sources. Some commenters stated that because modeling has shown that sources with emissions below 2,000 tpy have the potential to cause or contribute to modeled NAAQS violations, an emissions threshold of 1,000 tpy is more appropriate to ensure that air quality characterizations are accurately capturing potential NAAQS violations.

Several state and industry commenters supported Option 2 stating it balances limited agency resources for the implementation of this rule while still allowing important SO₂ emission source areas to be evaluated. Some industry commenters stated Option 2 appears to be the best option because the difference between the number of sources captured by Options 1 and 2 is substantial while the difference in overall emissions covered by the two options is small.

Numerous state and industry commenters supported Option 3, stating it would apply reasonable thresholds without burdening states with unnecessary modeling or monitoring. One industry commenter stated that this option would allow states to focus their limited resources on the areas with the largest 211 sources of SO₂ emissions.

One industry commenter stated that if the EPA decides that either Option 1 or 2 is preferable, then the source

threshold needs to be revised to take into account the following additional factors: The distance a source is located from population centers in general and sensitive populations in particular; stack heights; topography and meteorological factors unique to the source(s); and economic conditions that will affect a source's expected SO₂ emissions. This commenter disagreed with the proposal's statement explaining why the Agency does not believe it necessary for air agencies to consider such factors, stating that the lack of a nationwide database with respect to such factors is irrelevant since the modeling is to characterize localized ambient air quality.

d. Comments on Discretion To Address Additional Areas

Several state and tribal commenters requested clarification of criteria the EPA would use to determine additional areas to be characterized beyond those with sources emitting more than the applicable threshold. A few commenters offered specific recommendations, for example to characterize areas of 10 km or 25 km diameters in which total emissions exceed the threshold but those of no single source exceeding the threshold. A few commenters recommended that the EPA should not have the discretion to subject additional areas to characterization unless total emissions in the areas exceed the applicable threshold. Some commenters recommended that the rule specify criteria to be used to identify multi-source areas that would need to be characterized. Conversely, some commenters recommended that the EPA not codify any specific criteria, recommending instead that the EPA provide guidance on how it envisions addressing areas with multiple sources and rely on the professional judgment of air agency personnel in consultation with the EPA to identify specific additional areas that warrant being characterized. Also, one state commenter recommended that any area "that, based on the state's knowledge, has the potential to exceed the NAAQS" should become subject to requirements for air quality characterization. Finally, a few industry commenters and a few state commenters urged that the EPA not have the discretion to subject additional areas to DRR requirements.

3. EPA Response

The EPA considered the many and varied comments received on the source threshold options presented in the proposal. After considering the comments received and as explained below, the EPA has decided to establish

a requirement for air agencies to identify all sources with annual SO₂ emissions that exceed 2,000 tpy (using emissions data from the most recent calendar year for which such data are available) and characterize air quality around such sources according to the timeline in section IV.C of this preamble. The following subsections also address the other comments relating to applicability of the requirements for air quality characterization described previously.

a. Emissions Metric

The EPA agrees with the many commenters who expressed support for using an annual emissions metric because annual emissions data are most readily available for all large SO₂ sources, whereas 1-hour emissions rate information is not readily available for all SO₂ sources. Since the tpy emissions metric is a common denominator in the emissions inventory and reporting universe, the EPA believes that the use of this metric is most appropriate to be required under a rule that applies broadly to areas with sources that do not already measure 1-hour emissions rates. Using tpy will provide air agencies and the regulated community a common, easily verifiable, straightforward approach for identifying sources around which air agencies are required to characterize air quality. This approach will rely on existing emission inventory collection systems that are already in place. An approach based on tons of emissions per year also should reduce unforeseen or otherwise uneven application of the requirements for air quality characterization that could arise if different metrics are used for different SO₂ source sectors to identify areas for which air agencies are required to characterize air quality.

The EPA acknowledges that some state commenters suggested inclusion of a 1-hour emissions rate-based criterion for identifying certain sources with infrequent, episodic SO₂ emissions at atypically high rates that could impact nearby populations. The EPA notes that the emissions threshold included in the final rule establishes only minimum requirements for identifying sources. The EPA agrees with state commenters who recommended that air agencies should also characterize areas that, based on their knowledge of sources and areas, may be at risk of violating the standard. Thus, under this rule air agencies could also require characterization of air quality near sources prone to episodic emissions with relatively high rates or amounts, as appropriate. However, because short-term emissions data are not available for all SO₂ sources, the EPA did not include

in this rule a minimum requirement for identifying source areas needing air quality characterization based on this metric.

b. Characterization Near Smaller Sources in Areas With Higher Populations

The EPA considered the comments received on the issue of whether a lower emissions threshold should be included for areas with more dense populations (e.g., CBSAs greater than 1 million population). A number of commenters appeared to interpret the inclusion of a lower threshold for areas with higher population as being less protective of the public in less populated areas. The EPA wants to clarify that this was not the intention behind the population-inclusive options included in the proposed rule. The SO₂ NAAQS, and all NAAQS, are intended to provide equal protection for citizens throughout the country. The proposed use of both population and emissions thresholds as a means to require air quality characterization was simply one approach to focus limited federal and state modeling and monitoring resources into characterizing locations where a greater coincidence of people and SO₂ emissions occur, and thus a potentially greater potential for exposure is presented. After reviewing the comments on this issue, however, the EPA has decided not to move forward with the proposed preferred approach, and instead to apply requirements for air quality characterization based on emissions levels uniformly across the country for both more urbanized and less urbanized populations so as to focus primarily on the size of the sources.

It should be noted here that any monitoring that occurs pursuant to this rulemaking is potentially in addition to, or can possibly help to satisfy, required SO₂ monitoring stemming from 40 CFR part 58, appendix D, section 4.4. Those monitors required in 40 CFR part 58, appendix D, section 4.4 are determined using a unique metric that accounts for the coincidental occurrences of SO₂ emissions and population, namely the Population Weighted Emissions Index (PWEI). This rulemaking does not supplant or otherwise modify those existing requirements.

c. Emissions Threshold

Regarding the comments EPA received expressing preferences on the proposed emission threshold options, the EPA notes the wide range of views. A few commenters recommended alternate thresholds in the range from 1,000 tpy to 10,000 tpy, or

recommended pairs of thresholds within this range. Some commenters provided modeling analyses as an indication that sources larger than 12,000 tpy did not cause a violation of the standard, while other commenters recommended a single emissions threshold of 1,000 tpy and provided modeling analyses of different sources as an indication that sources less than 2,000 tpy caused modeled violations. These comments demonstrate that ambient SO₂ impacts can be variable, and are dependent on many factors other than annual emissions (such as meteorology, stack height, local topography and plant operations). These factors can only be assessed through analytical approaches, such as ambient monitoring or air quality modeling, which take many of these related factors into account simultaneously. These comments demonstrate why air quality characterization of the area around these sources is needed to protect public health in the first place.

The EPA believes that, for the purposes of establishing a minimum threshold that prioritizes the resources that will be devoted to characterizing air quality near SO₂ sources nationally, the 2,000 tpy source emissions threshold strikes a reasonable balance between the need to characterize air quality near sources that have a higher likelihood of contributing to a NAAQS violation and the analytical burden on air agencies. This threshold is on the lower end of the range of thresholds recommended by commenters because sources on the lower end of the range have the potential to cause or contribute to violations of the NAAQS. As compared to the preferred option in the proposal (*i.e.*, 1,000 tpy sources in CBSAs over 1 million people; 2,000 tpy sources not in CBSAs over 1 million people), the 2,000 tpy threshold would mean that, in the aggregate, air agencies would need to address air quality near about 35 fewer sources (or 7 percent fewer). Nevertheless, the total emissions addressed would still account for 89 percent of the SO₂ emissions nationally (based on 2011 emissions), very close to the 90 percent level that has been considered to be reasonable by many stakeholders in the past.⁴ National SO₂ emissions have declined by a significant amount from 2011 to 2013 (around 1.5 million tons, or more than 20 percent), for various reasons. The EPA assessed the number of sources meeting a 2,000

tpy threshold based on 2013 emissions data now available for EGUs and 2011 emissions data for non-EGUs. Compared to the assessment in the proposal, which assessed the number of sources meeting the proposed threshold (1,000 tpy in urban areas/2,000 tpy elsewhere) based solely on 2011 data, the EPA now estimates that approximately 70 fewer sources (about 15 percent) will need nearby air quality to be characterized than was estimated in the proposal. Based on the updated data, the EPA estimates that already-designated sources plus sources currently exceeding the final threshold in this rule still would account for 86 percent of national emissions. Under this rule, each air agency will be required to identify all sources with annual SO₂ emissions that exceed 2,000 tpy (using emissions data from the most recent calendar year for which such data are available) and characterize air quality around such sources according to the timeline in section IV.C of this preamble.

Of course, if the trend in reduction of SO₂ emissions continues at individual sources, there will also be a corresponding reduction in national emissions, and both kinds of reductions are desirable for improving public health, even if that results in fewer source areas becoming subject to the emissions characterization requirements in the final rule. Conversely, if the trend reverses and source emissions increase, more sources and areas will be required to be characterized under the rule. Thus, the exact number of sources and areas that will exceed the promulgated threshold when air agencies begin characterizing areas under the rule cannot be precisely known at this time, nor can their future percentage share of the national inventory be precisely estimated. Nevertheless, the EPA believes that the promulgated threshold strikes a reasonable balance based on the information the Agency currently has regarding recent historical SO₂ emissions inventory levels. An analysis of potential source threshold options and associated source coverage, emissions coverage, and analytical costs is included in an EPA memorandum to the docket for this rule.⁵

d. Discretion To Address Additional Areas

Section 114(a)(1) of the CAA already provides the EPA authority and discretion to require emissions sources

to install, use and maintain monitoring equipment and provide other information as the Agency may reasonably require, even in the absence of this DRR. In addition, the EPA had several reasons for proposing as part of this rule to reinforce state and the EPA discretion to also require air quality characterization around sources with emissions below the proposed thresholds. The purpose of proposing the use of emission levels as the criterion for determining applicability of the air quality characterization requirement is that emissions provide a simple means of identifying the sources that are most likely to cause or contribute to violations of the SO₂ NAAQS. Nevertheless, the EPA recognizes that a variety of factors other than emission levels can influence the likelihood of NAAQS violations. As one example, source characteristics such as stack height and plume buoyancy can significantly affect source impacts. As another example, clusters of multiple smaller sources that are in close proximity can cause as much impact as a single larger source. Finally, the EPA recognizes that a variety of other reasons may exist that may warrant further characterizing air quality in particular areas, which supports maintaining state and EPA Regional Administrator discretion to require air quality characterization in the area. The EPA continues to believe that states and the EPA should retain this authority and that it would be unreasonable to restrict implicitly, via this rule, the inherent authority that air agencies already have to require sources of air pollution to measure their emissions and characterize their impacts.

For these purposes, the EPA continues to believe that the rule should make clear that states and the EPA retain the discretion to subject additional areas to the requirements for air quality characterization beyond areas with a single source exceeding the emissions threshold. The use of a simple emission threshold in the rule provides a convenient means of administering the application of the requirements for air quality characterization for the majority of cases. However, the impacts of a given level of emissions vary substantially, such that many areas with a source or sources that do not exceed the emission threshold might be known to have a high risk of contributing to NAAQS violations, potentially resulting in a higher risk of NAAQS violations than other areas exceeding the emission threshold. As a result, a rule that sets forth minimum requirements based on

⁴ The May 2012 White Paper and high-level summaries of stakeholder meetings are available at: <http://www.epa.gov/oaqps001/sulfurdioxide/Implement.html>. These documents and written comments received from stakeholders are also included in the docket for this rulemaking.

⁵ See also: "Analysis of Source Threshold Options for the Final SO₂ Data Requirements Rule," memorandum to docket EPA-HQ-OAR-2013-0711, July 16, 2015.

an emissions threshold cannot reasonably be used to support an assumption that no further characterization near smaller sources is warranted, or to preclude authority that air agencies already have to investigate the impacts of such sources. Therefore, while this rule requires the air quality characterization near the above-threshold sources, the EPA and air agencies will also need to consult regarding the need for the characterization of air quality near sources below the threshold as well.

Among cases in which no single source meets the applicable emission threshold, no simple indicator is available to indicate which of these cases warrants air quality characterization. For areas with a single source, the areas could warrant air quality characterization if the stack height is low, if the plume rise is minimal, if terrain or meteorology is conducive to high impacts, and/or if emissions are just slightly below the threshold. For areas with multiple sources, concentrations are influenced not only by these stack, terrain and meteorological factors but also by the level of emissions at each source, the distances between them and the wind directions in the nearby area. The EPA appreciates the comments urging the establishment of specific criteria in the rule for identifying additional areas that warrant air quality characterization, but the EPA finds that these areas are better identified on a case-by-case basis reflecting a judgment considering the range of factors that influence the likelihood of NAAQS violations. That is, the EPA agrees with the state commenter urging that the rule provide for discretionary coverage of additional areas, such that additional areas that in the air agency's (and the EPA's) judgment have significant potential for violating the NAAQS can be made subject to requirements for air quality characterization on case-by-case bases.

Consequently, the EPA is retaining the discretion for air agencies and the EPA to require additional areas to be characterized beyond those with a source exceeding the emission threshold. However, the EPA is not revising the rule to establish specific criteria for identifying such areas; the EPA is instead relying on case-by-case evaluation of the various relevant factors to determine which additional areas warrant air quality characterization.

For areas with multiple sources, the EPA recognizes that a number of such areas may have no single source that exceeds the threshold discussed earlier and yet may have concentrations similar

to other areas with a single source exceeding the threshold. Commonly, such areas would have multiple sources clustered in relatively close proximity and would have total emissions at or above the threshold. The EPA envisions the air agencies and the EPA evaluating multiple source areas on a case-by-case basis to determine whether the areas warrant the same priority as areas where a single source has emissions above the threshold. Generally, the EPA strongly recommends that areas with multiple sources, where the combined impact would be expected to be as much as the impact of a typical single source emitting at least 2,000 tpy, should be carefully considered for air quality characterization, and we expect the EPA Regional Administrators to focus on such areas in exercising their discretion. As stated previously, a rule that sets forth minimum requirements based on an emissions threshold cannot also be reasonably used to support an assumption that no further characterization near smaller sources may be required. Therefore, in addition to requiring air quality characterization near sources above the emission threshold, the rule also preserves the discretion of the EPA and air agencies to require air quality characterization in additional areas, which will necessitate consultation on a case-by-case basis regarding the need for characterization of additional areas beyond those containing a source exceeding the threshold in this rule.

Regarding the comments recommending specific criteria for subjecting multiple source areas to the requirements for air quality characterization, the EPA believes that too many factors influence the combined impact for the EPA to establish a single set of criteria for determining whether each area warrants becoming subject to the requirements for air quality characterization. Nevertheless, for the EPA and state agencies considering using their discretion to require characterization of additional areas, the EPA believes that the recommendations of these commenters provide good suggestions for where to begin making such decisions, to be followed by a case-by-case judgment as to the expected degree of combined impacts.

In numerous cases, areas include multiple operations that previously were all part of a single source that now for business reasons have subdivided their ownership, such that the operations that previously were a single source must now be considered multiple sources. For example, in many cases, where previously the area had a

single integrated iron and steel mill, the iron- and steel-making operations now have separate ownership from the coke-making operations, such that the former single source has now become two sources. In these cases, an additional equity concern arises, that otherwise comparable facilities should not be treated differently based on a business decision that has no effect on air quality. If the combined emissions of these now separately-owned operations exceed 2,000 tpy, the impact would commonly be similar to the impacts of single facilities emitting over 2,000 tpy, and such groups of separately owned operations would thus warrant air quality characterization.

Regarding the commenters who recommended that the EPA stipulate that an area with multiple sources emitting less than the threshold should not be required to characterize air quality under the rule unless the combined emissions exceed the threshold, the EPA does not agree with this approach. Even for single source areas, the EPA is preserving the discretion air agencies and the EPA already have to require air quality characterization where the source emits less than the threshold but where concern about potential NAAQS violations warrants further air quality characterization. By the same logic, the combined impacts of multiple sources may warrant further characterization even if the combined emissions are less than the threshold.

C. Data Requirements and Program Implementation Timeline

1. Overall Timeline

a. Summary of Proposal

In the proposed rule, the EPA proposed an implementation timeline addressing feedback and concerns raised in previous stakeholder meetings, which the EPA considered to provide air agencies with sufficient flexibility and time to pursue either improved monitoring or modeling to characterize air quality. The EPA designed the schedule to allow air agencies to account for SO₂ reductions that will occur over the next several years as a result of implementation of national and state level programs and facility decisions for complying with such requirements (such as the Mercury and Air Toxics Standards (MATS)).⁶ The

⁶ In 2012 the EPA promulgated the Mercury and Air Toxics Standards under Section 112 of the CAA, 42 U.S.C. 7412, that set emission limits for several hazardous air pollutants. See 77 FR 9304 (Feb. 16, 2012). Installing the technology necessary to reduce emissions directly regulated by the MATS rule has already reduced the emissions of SO₂. Id.

EPA solicited comments on the feasibility of the implementation of the proposed timeline. See 79 FR 27456, May 13, 2014. The notice of proposed rulemaking also included a discussion of when the EPA envisioned the information could potentially be used in designation actions.

b. Brief Summary of Comments

Several state and industry commenters agreed that the EPA's proposed timeline was reasonable for acquiring data by either modeling or monitoring, and for evaluating the submitted data. Many also agreed that it would be a reasonable schedule for supporting the issuance of designations and submittal of any SIPs, provided future schedules for those actions accommodate the schedule for implementing the rule. However, a larger number of state and industry commenters asserted that the time allotted for installation of monitors was not sufficient. One state commenter stated that the feasibility of the schedule will depend upon the threshold option selected by the EPA. Another state commenter supported the timeline that the EPA proposed as long as the EPA finalizes the rule by late 2014 and added that, if promulgation is delayed, the timeline should be adjusted by as many weeks or months as the delay in finalizing the rule. Some state and industry commenters recommended an extension of at least 1 year on all the proposed actions listed in the implementation timeline. Other commenters felt that the proposed timeline was flawed for multiple reasons and is, therefore, not achievable.

c. EPA Response

The EPA recognizes the logistical and financial challenges that were identified by commenters with respect to the timeline. In response, the final rule contains changes to provide additional time for air agencies to determine whether to use modeling or monitoring to characterize air quality near their affected sources, discussed later in this section. However, the final rule retains the proposed deadlines for commencing monitoring or providing modeling. The Agency acknowledges that these deadlines do not provide as much time as some commenters would prefer; however, the EPA believes that these deadlines can be achieved with the appropriate planning, coordination, and program implementation by air

agencies. The EPA notes that if air agencies conclude that the timeline and resource burdens associated with installing and conducting improved monitoring are not feasible for particular areas, they may instead choose the modeling approach, which is generally less expensive and can be performed more expeditiously than monitoring, to characterize air quality. Alternatively, in some cases the source owner and the air agency may be able to establish by January 2017 a federally enforceable requirement limiting emissions to less than 2,000 tpy, with the result that further modeling or monitoring in that area would not be required under the rule unless air agencies or EPA Regional Administrators conclude it is otherwise warranted. Because the purpose of this rule is to obtain improved air quality information in an efficient manner in order that these data may be used in future actions (such as area designations, redesignations, or other actions designed to ensure attainment of the 2010 SO₂ NAAQS) to protect the public from the short-term health effects associated with exposure to SO₂ concentrations that exceed the NAAQS, the EPA believes it would not be appropriate to further extend the timelines for air quality characterization in the rule.

The EPA believes that any further delay in air quality characterization around sources identified as a result of this rulemaking would delay the implementation of the SO₂ NAAQS and, therefore, would impede public health protection in areas that in the future show violations of the standard based on the data to be gathered under the rule. The EPA also believes that any significant delays in monitors becoming operational past the date of January 1, 2017, will certainly delay the potential for monitoring data to be used to inform actions that depend upon ambient concentration assessments, possibly past calendar year 2021. Finally, the EPA notes that under the terms of the March 2015 consent decree, in order to avoid the EPA being required to designate an area by December 31, 2017, an air agency will need to have installed and begun operating the new SO₂ monitoring system no later than January 1, 2017.

The Agency believes that it is very important to maintain the proposed timetable for conducting modeling and installing monitoring sites because of the need for these new data to be

available to support future determinations concerning the attainment status of areas. The EPA encourages each air agency to engage in early dialogue with the appropriate EPA Regional Office and with the identified applicable facilities in order to meet the requirements of the rule. In particular, in light of the reality of the sometimes complex process of identifying potential monitoring locations, securing funding, and installing an appropriate number of new sites, if an air agency is considering the monitoring approach for one or more areas, early coordination should improve the air agency's potential for success in meeting the timing and requirements of the rule.

The final rule retains the January 15, 2016, date for submittal of a list of sources, because the EPA expects that this information is relatively straightforward to obtain, and it is beneficial for planning purposes to have this list available as soon as possible. However, as mentioned previously, in light of comments, the EPA is promulgating a schedule that provides an additional six months for the air agency to specify how it plans to address the area around each listed source. The EPA is promulgating a schedule in which July 1, 2016, is the deadline for selecting among the monitoring approach, the modeling approach, or establishing source emission requirements. If the air agency selects the monitoring approach for a source area, it must also include in the annual monitoring plan (also due by July 1, 2016) information about any new monitoring sites it will establish by January 1, 2017. If the air agency selects the modeling approach for a source area, it must also submit a modeling protocol at that time. If the air agency chooses the option of establishing an enforceable source limit or limits as an alternative to air quality characterization, it must also at that time provide a description of the planned emission limitation, including such information as emission rate, averaging time, and expected legal mechanism for making the limitation federally enforceable. To suffice as an alternative to the characterization requirement, the emission requirements or limits would need to be adopted by the air agency, made federally enforceable, and require compliance by January 13, 2017. Further discussion of the rationale for these revisions to the timetable is provided in the relevant subsections that follow. Table 1 shows

at 9305. On April 15, 2014, the D.C. Circuit denied 26 consolidated petitions for review of the MATS rule brought by state, industry, and environmental petitioners in *White Stallion Energy Ctr. v. EPA*, No.

12–1100 (and consolidated cases) (D.C. Cir.). The Supreme Court has reversed and remanded the D.C. Circuit's decision for further proceedings. *Michigan v. EPA*, Nos. 14–46, 14–47, 14–49, 2015 WL

2473453 (June 29, 2015). However, the MATS rule remains in effect at this time.

the final rule timetable, including this revision.

TABLE 1—TIMELINE FOR DRR IMPLEMENTATION

Date	Action
From promulgation of this rule to January 15, 2016.	Air agency and the EPA Regional Office consult on list of SO ₂ sources; air agency submits its list of sources to EPA by January 15, 2016.
July 1, 2016	Air agency specifies for each source whether it will characterize air quality with modeling, characterize air quality with monitoring, or establish a federally enforceable requirement limiting annual emissions of the source to less than 2,000 tpy. For source areas to be modeled, the air agency submits a modeling protocol. For source areas to be monitored, the air agency submits information about any new monitoring sites it will establish by January 1, 2017. For areas where enforceable emission limits will be established as an alternative to air quality characterization, the air agency submits a description of the planned emission limit.
January 1, 2017	Air agency ensures that SO ₂ monitors to satisfy the Data Requirements Rule are installed and operational.
January 13, 2017	For any source identified for modeling pursuant to the July 1, 2016, milestone, air agency submits modeling analyses. For any source identified for emission limit approach, air agency submits documentation showing that limits requiring annual emissions to be less than 2,000 tpy are effective and federally enforceable.
May 2020	For any source area identified for monitoring approach, air agency certifies 2019 monitoring data, enabling official design values for the 2017–2019 time period to be calculated.

In addition, while the proposed rule discussed how the timing of the implementation of this rule would fit with the anticipated schedule for completing area designations, the proposed rule did not itself purport to establish a binding schedule for

completing designations. Table 2 provides information concerning the schedule for taking action to designate areas in the future in accordance with the March 2015 consent decree, but is intended for informational purposes only. In this rulemaking, we are not

addressing comments received on the proposed rule concerning the designation process because those issues would be beyond the intended scope of this rulemaking.

TABLE 2—ANTICIPATED SCHEDULE FOR FUTURE ROUNDS OF SO₂ DESIGNATIONS

July 2016	Date by which the EPA must issue final designations for sources meeting specific criteria in the March 2015 consent decree.
August 2017	Expected date by which the EPA would notify states of intended designations based on air quality data obtained pursuant to the first round of the data requirements rule.
December 2017	Date by which the EPA must issue final designations for a majority of the country (pursuant to March 2015 consent decree), except for areas with new monitoring networks commencing operation by January 1, 2017.
August 2019	Anticipated due date for state attainment plans for areas designated nonattainment in 2017.
May 2020	Certification of 2019 monitoring data is required by this date.
August 2020	Expected date by which the EPA would notify states of intended designations for the remainder of the country.
December 2020	Date by which the EPA must issue final designations for the remainder of the country (pursuant to March 2015 consent decree).
August 2022	Anticipated due date for state attainment plans for areas designated nonattainment in 2020.

2. Issues Related to Submittal of List of SO₂ Sources Where Air Quality Is To Be Characterized, and Election of Modeling or Monitoring

a. Submittal of List of Sources Where Air Quality Is To Be Characterized

i. Summary of Proposal

In § 51.1203(a), the EPA proposed to require each air agency to submit to its respective EPA Regional Administrator by January 15, 2016, a list identifying the specific sources in the state around which SO₂ air quality is to be characterized. The EPA stated that this proposed requirement for the air agency to submit a list of source areas identified for further air quality characterization,

and the other data submittal requirements found in § 51.1203 of the proposed rule, are appropriate steps necessary to characterize SO₂ air quality throughout the country, and are consistent with sections 110(a)(2)(B), 110(a)(2)(K) and 301(a)(1) of the CAA. In the docket, the EPA provided a preliminary list of sources that appeared to meet the EPA's proposed thresholds (based on 2011 emissions data), and the EPA solicited comments on this list. *See* 79 FR 27446, 27461, May 13, 2014.

ii. Brief Summary of Comments

Some state and industry commenters opposed the requirement that, by January 15, 2016, air agencies must

submit a list of sources. Some commenters also stated that submitting a list of sources is unnecessary for various reasons such as data are already made publicly available on an annual basis through the national emissions inventory; that it does not make sense to establish a list that is expected to change; and that air agencies and the EPA can work cooperatively without a binding requirement. Commenters also recommended that any listing of sources, and any identification of the selected air quality characterization approach for specific source areas, should wait until the January 2017 analysis for individual sources or areas is to be completed. One state commenter

indicated that they did not find merit in the citations that the EPA provided in the proposal regarding the authority for requiring this list submittal. This commenter stated that the CAA section 110(a)(2) citations address the requirements for SIP submittals by states for implementation, maintenance and enforcement of the standard. Several state commenters also suggested updates or revisions to the EPA's preliminary list of sources potentially subject to this rule.

iii. EPA Response

The EPA does not agree with commenters who claim that submittal of an initial list of sources near which air quality is to be characterized is not needed in January 2016. The EPA believes that it is important to receive the list of source areas to be characterized under the rule by January 15, 2016, because it will provide timely clarity for both EPA and the air agency about which sources and associated areas are to be characterized for air quality under this rule. In EPA's judgment, such timely clarity is essential to the success of the characterization efforts that follow the source identification step. The list will identify the sources in the state that exceed the 2,000 tpy emissions threshold based on the most recently available emissions data, as well as any other source or sources identified by the air agency or the EPA Regional Administrator as warranting air quality characterization. Development of this initial list will be important for air agencies as they prepare to generate timely air quality information that may be used to inform future designation, redesignation, or other decisions concerning attainment of the 2010 SO₂ NAAQS.

Retaining this deadline will provide the early opportunity for the air agency and the EPA to discuss and resolve questions about whether air quality characterization should be required for a particular area if, for example, emissions are low in some years and high in others, if an area has a cluster of smaller sources, or if source-specific or other factors may warrant the need for air quality characterization. As a further example, there may also be situations for which the state and the EPA need to reach agreement on what constitutes the most recent year of emissions data for specific EGU and non-EGU sources. The list requirement and deadline will ensure resolution of such questions in time to enable further characterization requirements to be met.

Thus, the EPA is retaining the January 2016 deadline, as proposed, for

submittal of the list of sources in order to initiate an orderly process to obtain additional information on ambient SO₂ concentrations, and ensure these data are available to support actions taken for the implementation of the 2010 SO₂ NAAQS. While the Agency has previously acknowledged that some of the deadlines in this rule do not provide as much time as some commenters would prefer, the EPA believes that the schedule for providing the list of sources is a relatively straightforward exercise that can be accomplished within the required time frame.

The EPA strongly encourages each air agency to consult with its respective EPA Regional Office to identify sources exceeding the emission threshold in the final rule, and to identify any other areas near sources that do not exceed the emission threshold but which would be appropriate for further air quality characterization. It will be important for air agencies and the EPA to carry out this consultation process as early as possible and to reach agreement on the list of sources to characterize under the rule as quickly and efficiently as possible. It is also important to note that, due to the overlap between the criteria for inclusion of sources in this final rule and those in the March 2015 consent decree, all of the sources identified in the March 2015 consent decree should also be included on the January 2016 list of sources required for characterization under this rule. The consent decree requires the designation in July 2016 of areas associated with an initial list of sources meeting specific criteria. Depending on the specifics of those designation actions, information developed to support those actions may serve to meet some or all of the requirements of this data requirements rule. (See section IV.E, Other Key Issues and Comments, for more discussion of these issues.)

Regarding comments about EPA's authority to require submittal of a source list, the EPA believes that the requirements of this rule for air agencies to submit a list of source areas identified for further air quality characterization, and the other data submittal requirements found in § 51.1203 of this rule are appropriate steps needed to better understand SO₂ air quality throughout the country, and that including such requirements is consistent with sections 110(a)(2)(B), 110(a)(2)(K), and 301(a)(1) of the CAA.

Section 110(a)(2)(B) of the CAA indicates that state SIPs are to "provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile and analyze data on ambient air

quality and (ii) upon request, make such data available to the Administrator."

Section 110(a)(2)(K) of the CAA states that SIPs shall "provide for (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a NAAQS and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator." Although both of these provisions direct what air agencies are required to include in SIPs, they clearly support the authority of the EPA to prescribe requirements that the information that SIPs are to ensure can be provided is collected in the first instance.

In addition, CAA section 301(a)(1) provides the EPA with general authority to establish regulations as necessary to carry out the agency's functions, which in this case includes ensuring that additional information is collected and provided so that air agencies and the EPA can ensure attainment and maintenance of the SO₂ NAAQS throughout each state. Finally, the EPA notes that CAA section 114(a)(1) also provides broad authority for the EPA, for the purposes of developing any implementation plan under section 110 or carrying out any provision of the CAA, to require monitoring and provision of other information the Agency may reasonably require (such as modeling information).

The EPA appreciates the comments on the preliminary list of sources that appeared likely to be subject to this rule as proposed. The EPA acknowledges that, for various reasons, such a list of sources could change up until the time that the list is required to be submitted. Accordingly, such a list is not being promulgated as part of this rule. The EPA plans on continuing consultations with air agencies regarding the source areas that the final rule will require to be characterized.

b. Choice Monitoring or Modeling

i. Summary of Proposal

In § 51.1203(b), the EPA proposed to require each air agency to state whether it will characterize air quality through improved ambient air quality monitoring or through air quality modeling techniques by January 15, 2016. The EPA also proposed in § 51.1203(b) that in an area with multiple subject sources, the air agency (or air agencies if a multi-state area) shall use the same technique (monitoring or modeling) to characterize air quality for all sources in the area. For

situations where multiple sources are located in proximity across state boundaries, the EPA recommended that the relevant air agencies work together to determine a common analytical approach for assessing air quality in that area. *See* 79 FR 27460, May 13, 2014.

ii. Brief Summary of Comments

Several state and industry commenters stated that the EPA should provide a more reasonable schedule for air agencies to elect the monitoring option under the proposed rule. Some commenters suggested that air agencies should have until January 1, 2017, to make this determination because they could benefit from using initial modeling results to inform this decision, such flexibility would reduce burdens on state regulators, and it could lead to more accurate determinations, while not impacting the EPA's expected attainment dates for such areas should the areas become designated nonattainment.

iii. EPA Response

In response to these comments, the EPA is providing additional time for making the election of modeling or monitoring (or, as discussed later, for making the election of an alternative approach that enforceably limits an applicable source's emissions). Accordingly, the deadline for this election will be July 1, 2016. The EPA recognizes that evaluating the relative merits of modeling and monitoring for any particular area, including identification of funding sources for any new monitoring that might be under consideration, warrants more time than was provided under the proposed rule. Consistent with this revision, the EPA is also revising the deadline for air agencies using modeling to submit modeling protocols for the applicable areas. Thus, under the final rule, by July 1, 2016, the air agency must submit its selection of whether each area will be characterized through modeling or monitoring and, depending on that selection, either must submit a modeling protocol or must include information in the Annual Monitoring Network Plan that specifies the monitoring to be conducted to address the requirements of this rule. The EPA believes that this revised deadline still provides for timely planning for air quality characterization to occur (through modeling) or begin (through monitoring) at the beginning of 2017. Conversely, the EPA does not agree that any later deadline for selecting the means of addressing air quality characterization requirements would provide the time and flexibility to

address in a timely way any issues that arise after the selection is made. The result would be that a later deadline for this selection could jeopardize timely receipt of information characterizing air quality.

Notwithstanding this revision, the Agency encourages air agencies to start their investigation of this issue as soon as practicable. The EPA strongly encourages each air agency to consult with its respective EPA Regional Office to identify sources exceeding the emission threshold in the final rule and any other sources that do not exceed the emission threshold but near which further air quality characterization would be warranted. Similarly, the EPA strongly encourages air agencies to hold early discussions regarding the manner in which modeling or monitoring might be used. As one example, if the air agency believes that the existing monitoring network suffices to characterize air quality, early discussions with the EPA would be essential for assuring that the intended selection of monitoring is based on appropriate assumptions regarding the network's ability to characterize air quality near the applicable source(s) without further network adjustments.

c. Use of Most Recent Publicly Available Data

i. Summary of Proposal

In § 51.1202, the EPA proposed that the air agency should identify applicable sources of SO₂ based on the most recent publicly available annual SO₂ emissions data for such sources. The EPA specified in proposed § 51.1200, that "annual SO₂ emissions data" means the quality-assured annual SO₂ emissions data for a stationary source as reported to the EPA in accordance with any existing regulatory requirement (such as requirements to report continuous emissions monitoring data for EGUs subject to the acid rain program). The EPA stated that, by January 15, 2016, data for 2014 would be available for EGU sources and 2013 data would be available for non-EGU sources. By considering the most recent emissions data, the EPA noted that air agencies and the EPA will be able to take into account any recent emissions increases or decreases that would cause a source to be subject to the requirements in this proposed rule. The EPA included in the docket to the proposed rule a preliminary list of sources that appeared to meet the criteria described in the EPA's proposed source threshold approach and requested that air agencies provide in their comments on this proposed rule

any relevant updated information that would support the addition or removal of a source from that preliminary list. *See*, 79 FR 27457, May 13, 2014.

ii. Brief Summary of Comments

Several state and industry commenters generally supported the approach that the basis for the emissions to be compared to the threshold would be the latest available 1-year of SO₂ emissions data. One industry commenter stated that using the most recent year of data ensures that any recent emissions reductions that have occurred will be properly taken into consideration.

One public interest group commenter stated that using the most recent year as a snapshot may fail to capture sources that simply have a low year, but normally emit at higher levels, and recommended that the EPA require that facilities only be excluded under the threshold if, in prior years, the facilities had similar low total emissions below the limit. A number of states provided information suggesting specific modifications to the EPA's preliminary list of sources.

One commenter stated that the rule should not take an "all in" or "all out" approach based on a simple analysis of 1 year's emissions or even a 3-year average of emissions alone. The commenter stated that the EPA seems to allow, or consider, the potential addition of non-threshold-meeting sources but does not appear to recognize that there may be instances where the air agencies knowledge and judgment warrants exclusion of threshold triggering sources. They suggested that air agencies should be able to take into consideration operational changes during the 3-year period to determine if a different methodology is appropriate for determining if a source should be a part of the analysis.

iii. EPA Response

The EPA continues to believe that the most appropriate generally applicable basis for determining applicability of the air quality characterization requirements is the most recent available year of emissions data for a stationary source as reported to the EPA in accordance with any existing regulatory requirement. As we have previously explained, SO₂ emissions are trending downward, due to numerous national and regional requirements that have recently been adopted and are taking effect. The Agency believes it is reasonable to account for this trend by basing applicability for this data requirements rule on the most recent available year of emissions.

By January 15, 2016, the EPA would expect that 2014 data will be available for all EGU sources, and 2015 data may be available for many EGUs in accordance with the requirements of the Acid Rain program and other emission trading programs that require data certification soon after the end of the year. These sources report hourly emissions data to the EPA on a quarterly basis. Emissions data for large SO₂ sources also would be available from annual reporting required for the AERR. Every 3 years (*i.e.*, 2011, 2014, 2017 and so on), air agencies must submit to EPA emissions data for SO₂ sources with the potential to emit more than 100 tpy. In other years, the AERR requires states to report emissions data for SO₂ sources with the potential to emit more than 2,500 tpy. These annual reports under the AERR are due 12 months after the end of the emissions year. Thus, the EPA would expect that in January 2016, states would have emissions data for calendar year 2014 available for non-EGU sources over 100 tpy potential to emit. Emissions reporting requirements for the Acid Rain and AERR programs would be expected to cover the vast majority, if not all, of the sources subject to the SO₂ DRR.

By considering the most recent emissions data, the air agency and the EPA will be able to take into account any recent emissions increases or decreases that would cause a source to be subject to the requirements in this rule or not. Although identifying sources based on the most recent year of emissions is a reasonable basis for prioritizing limited modeling and monitoring resources for characterizing current air quality, the EPA recognizes the concern of some commenters that there may be sources that in the most recent year have emissions that are lower than normal and are not representative of normal operations. In these cases, *i.e.*, where recent emissions are below 2,000 tpy but no controls have been installed and past representative emission levels are typically above 2,000 tpy, the state and the EPA should consider using their discretion to require additional air quality characterization near such sources.

The EPA also recognizes the concern about sources for which the most recent year's emissions are unrepresentatively high, *i.e.*, that some sources may have recent year emissions above 2,000 tpy but normally emit below that level. Given the trends in emissions, the EPA believes that situation will be relatively rare. Moreover, the existence of such sources does not negate the general conclusion that recent emissions data are an appropriate means for targeting

limited modeling and monitoring resources for characterizing current air quality.

The EPA believes that a rule that prioritizes resources based on the most recent year's data is more appropriate for a broader range of circumstances. The EPA notes, however, that after a source is initially identified, the air quality characterization requirements require air agencies to provide at least 3 years of monitoring or modeling data. The availability of such data will provide the opportunity to give appropriate consideration to representative emissions when using such data, as appropriate to the specific use.

d. Shutdowns and Limitations on Emissions Levels by January 13, 2017

i. Summary of Proposal

The EPA noted in the proposed rule that there may be sources in the power industry and other sectors that are in operation as of January 15, 2016, but may be scheduled to shut down (*e.g.*, due to a consent decree or other legal requirement), or may choose to shut down, prior to January 2017 (when the air agency should have ambient monitors operational and air quality modeling completed). The EPA proposed that any applicable source that intends to shut down but is still in operation on January 15, 2016, should be included on the air agency's list for SO₂ air quality characterization. However, if by January 13, 2017, the air agency can provide the EPA with a legal agreement confirming that the listed source has permanently and enforceably shut down, then under the proposal the air agency would have no further obligation regarding air quality characterization for this source pursuant to this rulemaking. *See* 79 FR 27458, May 13, 2014.

ii. Brief Summary of Comments

One state commenter recommended that the EPA revise the rule to exempt from the list those sources that take an enforceable emission limitation below the 2,000 tpy emissions threshold before January 13, 2017, even if reductions and applicability of the limitation are only realized within a reasonable time after January 13, 2017. Several commenters stated that there is no basis to distinguish between situations in which a source may provide documentation it will shut down, and cases where an enforceable limit is established, because in each case the source would no longer meet the criteria for characterization under the rule. Another commenter stated that sources should be able to

take federally enforceable limits on a tpy basis prior to the January 13, 2017, date for air agencies to submit their modeling analysis to avoid characterization under the rule. Another state commenter stated that requiring sources to implement controls prior to submittal of future required SIPs would encourage sources to make emission reductions while allowing sufficient time to implement these actions.

Some state and industry commenters recommended that sources should have until the applicable attainment date for a designated nonattainment area to complete any enforceable actions that achieve attainment, provided those actions are committed to by January 13, 2017. Commenters stated that there is insufficient time for sources to take all the actions needed to implement these controls (including conducting modeling, determining the required reductions and control strategies, procuring capital funds, obtaining permits and installing equipment) under the proposed rule. Commenters stated that allowing sources to implement controls after January 13, 2017, but before future attainment dates supports the EPA's desired outcome of achieving emission reductions as quickly as possible; in contrast, under the EPA's proposal, sources unable to have enforceable limits in place by the January 13, 2017, deadline have little incentive to take any action prior to the anticipated designation deadline of 2020.

iii. EPA Response

The EPA is finalizing the proposed approach to allow a state with a source that is in operation as of January 15, 2016, but that provides documentation that the source will shut down permanently prior to January 13, 2017 pursuant to a federally enforceable mechanism (*e.g.*, source-specific SIP revision or minor NSR permit revision submitted to the EPA by January 13, 2017), to avoid being subject to the requirement to characterize air quality in the vicinity of the source.

As a result of comments received on the proposed rule, the EPA is clarifying how this exclusion would work relative to the requirement for development and submittal in January 2016 of the list of sources near which air quality is to be characterized. The EPA appreciates that there might be a source whose most recent year of actual emissions exceeds the threshold for inclusion on the list, but for which the state has already adopted, or will soon adopt, enforceable requirements to shut down by January 2017. Such a source may have significant emissions during the most

recent available year, or may even still be in operation on January 15, 2016. The EPA has determined that the clearest way to implement the exclusion from the air quality characterization requirement is to require that the air agency initially identify such a source on its list for SO₂ air quality characterization because emissions in the previous year, which serve as the basis for listing under this rule, exceeded the emissions threshold. However, the final rule now includes language in § 51.1203(b) allowing the air agency to indicate by July 1, 2016, that it will provide the EPA with a federally enforceable requirement confirming that the source will be permanently and enforceably shut down by January 13, 2017. For a source for which the air agency provides documentation of a federally enforceable requirement that the source will shut down, the air agency will have no further obligation regarding air quality characterization pursuant to this rulemaking. This approach accomplishes the intent of the proposal by implementing the approach in a more clear and straightforward manner.

Commenters on the proposed rule also suggested that, in a similar manner, an air agency should not be subject to the air quality characterization obligation for any source that is initially on the list of sources due in January 15, 2016 (based on most recent actual emissions), but that becomes subject to a federally enforceable requirement to limit annual SO₂ emissions to below the 2,000 tpy emissions threshold. The EPA finds merit in those comments that suggest that the rule allow for similar treatment for sources that become subject to a federally enforceable emission limit as is allowed for sources that provide documentation that they will shut down. The EPA has revised the final rule accordingly, and provides further discussion below. However, EPA does not agree with commenters who suggest that sources should have until the applicable designation date, or attainment date for an area that is designated nonattainment, to implement controls that were committed to prior to January 13, 2017. Relying on commitments for emission reductions to occur after 2017 would not be consistent with the main focus of this rule, which is to provide current, updated information on priority SO₂ sources to the EPA beginning in early 2017 that will inform future area designations (now required in December 2017 and December 2020 per the March 2015 consent decree).

As indicated above, a source would be listed for air quality characterization if

its most recent emissions were above the 2,000 tpy threshold. However, the final rule also allows the air agency to meet the requirements of this rule by submitting a federally enforceable emissions limitation (e.g., source-specific SIP revision or minor NSR permit revision) to the EPA by January 13, 2017, that requires the affected source to reduce allowable emissions at the source to an annual rate below the 2,000 tpy threshold level by January 13, 2017. By July 1, 2016, the air agency would be required to identify the sources on the list for which it would be using such an approach as an alternative to modeling or monitoring. For such a source identified on the list, if the affected air agency has adopted and the source has become subject to federally enforceable control measures lowering emissions below 2,000 tpy by January 13, 2017, the air agency will generally not be required to further characterize the impacts from the source's emissions solely due to its size as of January 15, 2016.

Although air agencies may follow this option as an alternative to characterizing areas with sources that limit their emissions to below the 2,000 tpy size threshold, the EPA believes that air agencies and the EPA must apply judgment as to whether there are still reasons to characterize these areas due to other factors. As discussed above, some areas where all sources emit less than 2,000 tpy may nevertheless warrant air quality characterization, for example because the area has a cluster of sources with intermediate emission levels or because the characteristics of a source or the area warrant it. Thus, some areas with all sources limited to below 2,000 tpy may still warrant air quality characterization. Therefore, the EPA urges air agencies to consult early with the EPA regarding areas that are under consideration for being addressed in this manner, in order to develop a common understanding as to whether emission limits under consideration would suffice as an alternative to air quality characterization for the area.

The EPA believes that allowance for this alternative emission limit approach is not only consistent with the intent of this rule to prioritize resources to focus on the largest sources of SO₂, but it also has the additional benefit of providing an incentive for early emission reductions to occur which will improve air quality in these areas in an expeditious manner. However, we do acknowledge the distinction between a formerly large source with no future emissions and a source with reduced but continuing emissions. The Agency does not believe it would be appropriate

to provide that the latter source can be excluded from evaluation in all cases. It may be that a source with emissions newly limited to below the applicability threshold—particularly one with limits established just below the threshold—may warrant further characterization, just as a source with actual emissions below the threshold may warrant characterization in some instances. For example, air quality characterization would continue to be warranted in areas with other sources over the applicability threshold, and in areas where no single source has emissions over the threshold but the combined emissions of multiple sources warrant air quality characterization. In evaluating such cases, the air agency should account for all source emissions contributing to ambient concentrations in the area, including those remaining emissions from the source that has just reduced its levels to below the applicability threshold. For this reason, the rule does not automatically exempt sources with emissions limited to less than 2,000 tpy from air quality characterization requirements; the rule instead provides that the air agency or the EPA may judge that the area should continue to be required to characterize air quality notwithstanding the new emission limits. Air agencies are thus advised to consult with their EPA Regional Office before pursuing this alternative to air quality characterization for a particular source area.

3. Issues Related to Submittal of Modeling Protocols

a. Summary of Proposal

For source areas that an air agency identifies are to be evaluated through air quality modeling, the EPA proposed in § 51.1203(d) that an air agency must also provide a modeling protocol to the EPA Regional Administrator for review by January 15, 2016. In the proposal, the EPA stated that the EPA Regional Offices would review the submitted information and consult with the air agency as expeditiously as practicable, either approving the submitted information in a similar manner to approval of annual monitoring plan updates, or having further discussion with the air agency if adjustments to modeling protocols are warranted. See 79 FR 27458, May 13, 2014.

b. Brief Summary of Comments

Several commenters stated that 1 year is not enough time to complete modeling demonstrations. These commenters stated that depending on the scope of the modeling required, it would take 2 to 4 years to complete the

entire process. The modeling time estimate will increase if refined modeling is required to site monitors and if the EPA expects the states to submit modeling protocols and not conduct any refined modeling to support monitor placement decisions until the EPA approves the protocols.

Several state and industry commenters objected to the EPA oversight of the modeling protocols. Commenters were concerned that the EPA could not review the plans in a timely manner and could cause delays in the process. One state commenter stated that, if this oversight and approval is finalized in this rule, they have serious concerns about whether 2 years from promulgation of the final rule is a reasonable amount of time for air agencies to prepare the necessary data inputs and conduct such modeling for all subject sources. One state commenter suggested that the EPA should clarify that air agencies could provide to the EPA a modeling protocol framework for review and approval, and that source-specific review of protocols should be left up to the respective state agency, consistent with past practices in PSD SIP approved states as well as past practices supporting Best Available Retrofit Technology (BART).

Some state and industry commenters recommended that the EPA oversight/approval of model protocols should be eliminated and air agencies should be able to determine the best approach, using the normal course of discussion and cooperation with their respective EPA Regional modeling contacts, and document that approach with the final submittal to the EPA. One industry commenter stated that it is arbitrary and capricious to require EPA approval of state monitoring and modeling plans when the EPA's technical resources are too stretched to provide this oversight in a timely manner.

c. EPA Response

The EPA recognizes the concerns of the commenters about the time and resources needed to develop effective modeling protocols. To clarify, the final rule does not require EPA approval of modeling protocols before air agencies may begin conducting modeling, but does direct air agencies to submit to the EPA modeling protocols by July 1, 2016. As with the modeling itself, directing submission of protocols is within the EPA's authority to prescribe modeling for the purpose of predicting the effect on ambient air quality of emissions under CAA section 110(a)(2)(K), and to prescribe such regulations as are necessary for the EPA to carry out its functions under CAA section 301(a)(1).

It is reasonable for the EPA to establish a process that provides an opportunity for preliminary EPA assistance to air agencies to ensure that their subsequent modeling is conducted in a manner that results in information that can reliably inform subsequent EPA actions determining air quality status under the SO₂ NAAQS. As explained below, the submission of modeling protocols will increase the likelihood that subsequent air agency modeling is sufficient for this purpose, and thus will clearly assist the EPA in carrying out its functions of determining air quality status.

As noted above, the EPA is allowing air agencies approximately six additional months to determine whether to characterize air quality through modeling or monitoring in order to accommodate the concerns about time needed to make this determination, without delaying the date by which information for characterizing air quality becomes available. Consistent with this revision, the EPA is delaying the deadline for states to submit modeling protocols for sources for which they choose to characterize air quality through modeling, to match the July 1, 2016, deadline for selecting an air quality characterization approach. The EPA believes that it is important and valuable for the EPA Regional Offices to work closely with air agencies to ensure that modeling protocols are adequate to ensure that the modeling for sources accurately characterizes air quality near sources. Requiring modeling protocols will help to keep air agencies from getting too far into the modeling process in a manner that may not be appropriate, which could occur absent such preliminary consultation with the EPA and, if it occurred, could result in the air agency needing to re-conduct modeling after submission to the EPA. The EPA does not intend to formally approve these protocols, nor does the EPA believe that a one-size-fits-all timeline, process, or presumption regarding approval or disapproval of these protocols is warranted. Nevertheless, the EPA believes that submittal of protocols will facilitate identification, and resolution of modeling issues, and will thereby help to avoid a later situation in which the EPA would not be able to rely upon the air agency's modeling in subsequent actions determining air quality status. Review of modeling protocols by the EPA will help ensure that the air agency's modeling will be appropriate for use in making future determinations regarding areas' attainment status, such as designations or redesignations. If an air agency's modeling protocol is not

submitted in advance of the subsequent modeling, the chances are greater that the EPA may not have critical air quality information when it is needed (for example, when the EPA intends to make area designations). Therefore, the EPA believes that a requirement for the air agency to provide modeling protocols for relevant sources to the EPA Regional Administrator by July 1, 2016 is a reasonable requirement. The modeling protocol should include information about issues such as emissions input data, modeling domain, receptor grid, meteorological data and how to account for background concentrations.

As was the case for the development of the list of sources and characterization approaches, the Agency acknowledges that the schedule for state submittal and the EPA review of modeling protocols is expeditious. The EPA nevertheless believes that the schedule can be achieved with appropriate planning, coordination, and program implementation by air agencies, and believes that it is necessary to establish expeditious timelines to ensure timely availability of the air quality information. The EPA Regional Office staff will be available to consult with air agency officials to refine the modeling protocols for relevant sources. The EPA Regional Offices will review the submitted information and consult with the air agency expeditiously to discuss any recommended adjustments to the protocol.

4. Issues Related To Submittal of Annual Monitoring Network Plans That Include SO₂ Monitoring Network Modifications To Satisfy the DRR

a. Summary of Proposal

In areas where air quality will be characterized through ambient monitoring to satisfy this rulemaking, the EPA proposed monitoring requirements in § 51.1203(c), including the requirement that air agencies submit relevant information about these monitoring sites to the EPA Regional Administrator by July 1, 2016, as part of their annual monitoring network plan, in accordance with the EPA's monitoring requirements specified in 40 CFR part 58. In the proposal, the EPA encouraged air agencies to work with the EPA Regional Offices in the development of an appropriate network plan which would include the rationale for why the proposed number of sites and their individual locations are appropriate. The EPA stated in the proposal that optional considerations for siting these monitors are discussed

in the draft Monitoring TAD.⁷ See 79 FR 27458, May 13, 2014.

b. Brief Summary of Comments

Several state and industry commenters asserted that it is unreasonable for the EPA to assume monitoring plans can be submitted by the proposed July 1, 2016, deadline. Some commenters stated that it may not be determined that monitoring would be appropriate in certain areas until after a lengthy round of initial modeling is complete. Other commenters stated that siting monitors is a lengthy process which involves, among other steps, working with the sources and the EPA to determine where monitors should be located, obtaining access to sites, identifying funding, and procuring and installing equipment. Furthermore, one commenter stated that, for sources that choose to operate monitoring equipment, additional time will be needed to (1) develop documentation between air agencies and sources to ensure that sites are adequately maintained and that data are reported in a timely and complete manner, and (2) to put in place a quality assurance program consistent with the EPA requirements for the entire monitoring network.

c. EPA Response

The EPA is finalizing the requirement that any plans to conduct monitoring to satisfy requirements of this rule (by air agencies, industry, or other parties) shall be reflected in the state's Annual Monitoring Network Plan due by July 1, 2016. The Agency believes that monitoring resources can be appropriately put in place by the January 1, 2017, deadline to satisfy this rule, particularly if air agencies begin planning as soon as possible. The EPA has encouraged air agencies to begin the monitor planning process early, particularly for the largest sources. As stated previously, the EPA believes that while the schedule for meeting the requirements of this rule is expeditious, the schedule can be achieved with the appropriate planning, coordination, and program implementation by affected air agencies. The EPA strongly encourages air agencies to start their investigation of this issue as soon as practicable. The EPA also encourages each air agency to consult with its respective EPA Regional Office to identify sources exceeding the emission threshold in the final rule and any other sources that do not exceed the

emission threshold but which would warrant the characterization of nearby air quality. In addition, as stated previously, the EPA believes that it is necessary to establish expeditious timelines to ensure timely availability of air quality information. With this in mind, and in light of the many logistical concerns raised by commenters and recognized by the EPA, the Agency is encouraging air agencies to engage with their respective EPA Regional Offices well in advance of the time by which the Annual Monitoring Network Plan is due. To this end, states should share their draft SO₂ network design plan for SO₂ monitoring intended to satisfy this rule with the EPA and the public in advance of the complete Annual Monitoring Network Plan.

The reality of the sometimes complex process of identifying a location, securing funding and installing a new monitoring site, necessitates such an approach. The Agency believes that early interaction between air agencies and the EPA Regional Offices and industry will likely improve the potential for success in installing an appropriate number of monitors in appropriate locations around SO₂ emitting facilities identified for characterization in this rulemaking.

5. Issues Related to Deadline for Operation of SO₂ Monitors

a. Summary of Proposal

The EPA proposed in § 51.1203(c)(1) that air agencies that have chosen to characterize air quality through ambient monitoring must have any relocated and/or new monitors operational by January 1, 2017. In the preamble, the EPA explained that, under this approach, it is anticipated that the first 3 calendar years of data would be collected from 2017 through 2019, allowing the first design value for each monitor to be calculated by May 2020. This would allow these new monitoring data to be used to inform air agency and the EPA determinations of areas' attainment status in actions that occur in 2020, which could include designations and redesignations. See 79 FR 27458, May 13, 2014.

b. Brief Summary of Comments

One industry commenter stated that the proposed rule reflected a reasonable timeframe for air agencies to collect the data, either through monitoring or modeling, that are needed to characterize air quality in areas and determine whether the 1-hour SO₂ NAAQS is being met. One state commenter also asserted that the feasibility of this time period will be

dependent upon the threshold option selected by the EPA and, thus, the number of affected sources.

However, more than 10 state and industry commenters asserted that the short time period between the dates when the monitoring plans need to be submitted and the monitors are required to be operational is inadequate. One industry commenter stated that it is technically infeasible to implement the proposed rule by 2017 and, thus, the EPA's proposal is arbitrary and capricious.

Several state and industry commenters recommended an extension of at least 1 year for air agencies to begin actual monitoring. One state commenter suggested that the EPA should allow monitoring to begin operation between May 1, 2017, and July 1, 2017, which would be consistent with its suggested approach allowing air agencies to notify the EPA of selection of the monitoring option up to January 1, 2017. This commenter recognized that this approach would likely require delaying the attainment date, if designations are not made until after 3 calendar years of the new monitoring data are obtained and certified. This commenter also noted that, if the EPA's approval of an SO₂ monitoring plan under this proposal does not occur until late 2016, air agencies with winter weather concerns would simply not have sufficient time to set up a monitoring network by January 1, 2017. Another state commenter noted that other recent rules establishing new monitoring requirements (such as NAAQS revisions for NO₂, SO₂ and PM_{2.5}) have not required such rapid deployment of monitors, but have each allowed at least 1.5 years from submittal of the network plan to operation of the monitor.

c. EPA Response

The EPA recognizes that the logistical and financial burdens of installing an ambient air monitoring station can vary in difficulty and the resources required. However, as noted earlier with regard to the overarching timetables effected by this rule, the Agency believes that, as with other parts of the implementation schedule, while the schedule for operating monitors is expeditious, it can be achieved with appropriate planning, coordination, and program implementation by the air agency which will allow monitoring resources to be in place by the deadline. The EPA believes that any further delay in air quality characterization around sources identified as a result of this rulemaking will delay implementation of the standard and public health protection in areas where there may be a violation of

⁷ The SO₂ NAAQS Designations Source-Oriented Monitoring Technical Assistance Document can be found at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf>.

the standard. The Agency believes that it is most prudent to maintain the proposed timetable for monitoring network installation because of the need for use of these new data in a relatively timely manner for use in making attainment status decisions concerning SO₂ areas in the country. Therefore, the EPA is finalizing the date by which monitors being used to satisfy this rulemaking must be operational to be January 1, 2017.

As noted previously, if a state chooses to monitor to satisfy the requirements of this rule, planning for the installation of new monitors must occur early on, soon after this rule is promulgated. With this in mind, and in light of the many logistical concerns raised by commenters and recognized by the EPA, the Agency is encouraging air agencies to engage with their respective EPA Regions well in advance of the time by which the Annual Monitoring Network Plan and network operations are due. The EPA is encouraging air agencies to engage with their respective EPA Regional Offices, and possibly the industrial sources needing nearby air quality characterization, to plan an adequate network design as early as possible after this rule is promulgated. The reality of the sometimes complex process of identifying a location, securing funding and installing a new monitoring site, necessitates such an approach. The Agency believes that early interaction between air agencies and the EPA Regional Office and industry will likely improve the potential for success in installing an appropriate number of monitors in appropriate locations around SO₂ emitting facilities identified in this rulemaking as needing nearby air quality to be characterized. The EPA also notes that if air agencies conclude that the timeline and resource burdens associated with installing and conducting improved monitors are not feasible for particular areas, they may instead choose the less resource-demanding and more expeditious method of modeling to characterize SO₂ emissions impacts in such areas.

6. Issues Related To Submittal of Modeling Analyses to the EPA

a. Summary of Proposal

The EPA proposed in § 51.1203(d)(3) that air agencies that choose modeling to characterize ambient air quality be required to submit modeling analyses to the EPA Regional Office by January 13, 2017. In the proposal, the EPA recommended that these modeling analyses should be conducted in accordance with the recommendations

in the EPA's Modeling TAD⁸ or as otherwise agreed upon with the EPA Regional Office on a case-by-case basis. The EPA stated that the EPA Regional Office and the air agency should engage actively in consultation to understand the inputs, assumptions and findings associated with each air quality modeling analysis; the air agency should submit thorough documentation of its modeling analysis; and the air agency should provide the EPA with supplemental information about the analysis upon request.

The proposal also indicated that where areas have not already been designated under the 2010 SO₂ NAAQS, air agencies could submit updated designation recommendations, if appropriate, as informed by their modeling analyses. The proposal noted that in developing any updated designation recommendations, the air agency should follow the EPA's most recent SO₂ designation guidance.⁹ See 79 FR 27458, May 13, 2014.

b. Brief Summary of Comments

One state commenter disagreed with the requirement that comprehensive modeling analyses and related supporting information need to be submitted to the EPA. This commenter asserted that the modeling analyses will be conducted by the facility owners and reviewed by the state air agency, and the air agency should be able to forward just a summary of the analyses to the EPA with sufficient information for the EPA to evaluate.

c. EPA Response

The EPA is finalizing its proposed approach of requiring that air agencies choosing modeling to characterize ambient air quality be required to submit modeling analyses to the EPA Regional Office. Irrespective of whether the state or a third party conducts the modeling, it is the state's responsibility under the CAA to submit the information that this rule requires. The EPA anticipates that any state submittal of third-party modeling would reflect a review as to whether it believes that the modeling satisfies applicable

⁸ The Draft SO₂ NAAQS Designations Modeling Technical Assistance Document can be found at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf>.

⁹ The EPA issued initial guidance on the SO₂ area designations process on March 24, 2011. See <http://www.epa.gov/air/sulfurdioxide/pdfs/20110411SO2designationsguidance.pdf>. Note: The EPA issued updated SO₂ designations guidance. See "Updated Guidance for Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard", March 20, 2015. Available at: <http://www.epa.gov/airquality/sulfurdioxide/pdfs/20150320SO2designations.pdf>.

requirements. Moreover, the EPA anticipates that the submittal would provide adequate information for the EPA to review the adequacy of the analysis as well.

D. Technical Issues Relating to Modeling and Monitoring

1. Technical Assistance Documents (TADs)

This section of the preamble presents a discussion of the threshold-based air quality characterization approach to implement the SO₂ NAAQS in areas that contain sources with larger SO₂ emissions, in order to address areas where there may be higher potential for NAAQS violations that adversely affect public health. This section discusses the different recommended approaches air agencies may use to provide the necessary air quality information to the EPA for areas around those identified sources.

a. Summary of Proposal

In the preamble of the proposed rulemaking, the EPA noted that the Agency has produced draft, non-binding Monitoring and Modeling TADs that discuss options, suggested approaches and methods on how monitoring or modeling efforts to characterize air quality around an identified source might be conducted. The EPA stated that these documents can be used to assist air agencies in the implementation of this rulemaking. See 79 FR 27460, May 13, 2014.

b. Brief Summary of Comments

One industry commenter stated that the proposed rule references and relies upon guidance provided in the Modeling and Monitoring TADs and in EPA's Guideline on Air Quality Models; therefore, the commenter asserted that the documents are subject to review and comment for the proposed rule. One state commenter asserted that it is challenging to prepare meaningful comments on the proposal since much of it is contingent upon the use of the TADs.

Some state and industry commenters urged the EPA to be clearer in the final preamble that the TADs are guidance and, therefore, are not binding. One state commenter urged the EPA to explicitly state in the final rule that air agencies retain the ability to use alternative methods to those outlined in the TADs. One industry commenter stated that the EPA's reliance on technical guidance documents that have not been subject to public notice and comment undermines protections guaranteed by the Administrative

Procedure Act. One state commenter stated that because the rule “requires” the use of “. . . separate non-binding draft technical assistance documents . . .” and creates significant regulatory uncertainty for air agencies, they oppose the proposal.

c. EPA Response

The EPA reiterates that the TADs provide recommendations but are not binding or enforceable and create no obligations on any person. Although the draft TADs are referenced as recommended approaches in the preamble to the proposal and in this final rulemaking, they are not required to be adhered to by any air agency required to characterize air quality around an SO₂ source identified in this rulemaking. The EPA developed the TADs to aid air agencies seeking advice in the air quality characterization process required by this rulemaking. The Agency has indicated that the TADs are meant to be used as possible tools to aid air agencies. This rulemaking does not codify the TADs, and none of the comments on the proposed rule regarding the TADs resulted in changes to the rule itself. The TADs are considered to be living documents that the EPA may update as necessary over time. The Agency believes that a modeling protocol or monitoring network design that follows or references the recommended approaches in the TADs is likely to be adequate, and will better ensure the success and a timely fulfillment of the requirements of this rulemaking. However, air agencies remain free under the final rule to suggest alternative approaches to those suggested in the TADs. Whether an agency chooses to follow a TAD or suggest an alternative approach does not affect the fact that for every approach chosen, the air agency will need to submit their rationale and approach to the EPA for review on a case-by-case basis.

The EPA disagrees with the commenters who claimed that the proposal’s reference to the TADs violates the rulemaking requirements of the Administrative Procedure Act. The Agency did not propose, and is not promulgating language that the TADs are required to be followed, and is not changing their status as non-binding technical assistance documents. In response to the request that the TADs be subjected to notice and comment, in fact the first drafts of the TADs were circulated for review and comment by stakeholders, and revised versions of the TADs were developed in response to those comments.

2. Monitoring and Network Design Issues

a. Summary of Proposal

The EPA proposed that air agencies that select the monitoring approach to characterize air quality in an area would have the option to identify appropriate existing monitoring sites, relocate monitors as appropriate or install new monitors, and have them operational by January 1, 2017, in order to provide data for use in the anticipated designations process in calendar year 2020. The EPA proposed to require that any relocated or new monitors be operated either as SLAMS, or in a manner equivalent to those monitors operated elsewhere in the SLAMS network; they do not, however, have to be designated as SLAMS monitors. In the proposal, the EPA stated that the monitors should use Federal Reference Methods (FRMs) or FEMs and meet the requirements of 40 CFR part 58, appendices A, C, and E. Further, the EPA stated that the resulting data should be reported to the Air Quality System (AQS) and would be subject to the same annual data reporting and certification requirements listed in 40 CFR 58.15 and 58.16 as required for SLAMS data. *See* 79 FR 27461, May 13, 2014.

b. Brief Summary of Comments

Some commenters suggested that the rule should allow a third party, such as a facility owner, to cover the expenses of siting and operating new monitors in coordination with the air agency. One public interest group commenter stated that there are numerous considerations that make it unlikely that monitors could be sited at ideal modeled locations, including access to the location, power hookups, local pollutant effects and safety from vandalism. Several commenters expressed concern that the lack of clear criteria for designing an SO₂ source-oriented monitoring network puts air agencies in the unreasonable position of designing a monitoring network without knowing whether it will be approved by the EPA.

Some commenters stated that guidance is needed on the number of monitors required. Commenters stated this issue should not be left up to negotiations with the EPA Regional Office; rather, a procedure should be outlined that will provide consistency for all regional offices and air agencies. Some state and industry commenters suggested that one monitor may be sufficient and recommended the final rule include a discussion of the adequacy of one monitor in certain situations. One industry commenter stated that, because large gradients in

design concentrations for SO₂ are likely not present to the extent that the EPA may expect, the use of a single monitor to demonstrate NAAQS attainment is sufficient in many cases.

c. EPA Response

The EPA believes that there are no limitations as to who might operate a monitor or monitors being used to satisfy the requirements of this rulemaking. It can be a state, local or tribal government, industry, other third parties or a mix thereof. Whatever the case, the monitor or monitors should be included as a part of the state’s monitoring plan. The critical issue is that the monitor or monitors must be either a SLAMS monitor or SLAMS-like monitor, where the latter might be an industrial or other third party-operated monitor. In either case, the monitor or monitors must be an FRM or an FEM monitor, and must adhere to requirements in 40 CFR part 58, appendices A, C, and E, and adhere to data reporting requirements also contained in 40 CFR part 58. This does require states to provide oversight to any non-SLAMS sites for which they are claiming to satisfy this rulemaking, as the states have the final responsibility to ensure the quality of submitted data that satisfies the intent of this rulemaking.

With respect to concerns over a lack of clear criteria for designing an SO₂ source-oriented monitoring network, the likelihood to appropriately place one or more monitors, and the issue of what number of monitors might be required around a source, there is no one-size-fits-all answer to this question. The EPA indicated in the preamble to the proposal, and in the draft Monitoring TAD, that the relative location and number of monitors that might be sufficient to characterize the air quality around a source is a case-by-case determination. In general, the main objective is to monitor at, or as near as possible to, the location(s) where ambient SO₂ concentration maxima are expected to occur. Site selection for any monitoring network is subject to logistical hurdles including site access, identification or installation of appropriate infrastructure, telecommunications access, and safety, and state, local, and tribal air agencies are well versed in the variety of logistics that can be involved in the installation of an ambient air monitoring station. These issues undoubtedly can play into what any ambient air monitoring network ultimately looks like. However, as is the case with all required ambient air monitoring, responsible air agencies are expected to establish a clear rationale for the number and placement

of the monitors it is using to satisfy the requirements of the rule. In this process, there is flexibility for the state to use professional judgment in determining what is appropriate for their individual situations, but they are expected to perform due diligence in attempting to locate monitors in the most ideal locations possible. Further, the air agency's recommended number of monitors and preliminary rationale should be discussed with the EPA Regional Offices well in advance of the development of an Annual Monitoring Network Plan. As discussed in the Monitoring TAD, the development of a network design and its rationale can be informed by a number of types of analyses which can include the use of air quality modeling, exploratory monitoring, or analysis of existing data. In any scenario, the state would need to have a technically credible rationale that supports the monitoring network design approach that has been chosen to satisfy requirements in this rulemaking.

As stated previously, the TADs provide recommendations for air agencies, but are not binding or enforceable, and they create no obligations on any entity. Although the draft TADs are referenced as providing recommended approaches in the preamble to the proposal and in this final rulemaking, there is no specific provision in this rule that requires the air agency to adhere to the TADs. The TADs have been provided in order to potentially aid air agencies seeking advice in the air quality characterization process required by this rulemaking.

3. Areas Failing to Having New Monitors Operational by January 1, 2017

a. Summary of Proposal

Where an air agency has chosen the monitoring approach and submitted a list identifying the sources near which air quality is to be monitored, the proposed rule addressed the situation where it becomes evident that sufficient and appropriate monitoring will not be operational in a timely manner. The EPA proposed that the area around the source in question would be functionally "moved" to the modeling pathway, where air quality data characterized by the state under this rule could inform potential future designations that would be intended to occur by December 2017. The EPA requested comment on this approach, and on any alternative approaches that could most effectively address a situation where an air agency is acting in good faith to deploy monitors on time but experiences a delay which may be outside of its control, as well as a

situation where an air agency does not act in good faith to deploy monitors on time. *See* 79 FR 27461, May 13, 2014.

b. Brief Summary of Comments

One public interest group commenter stated that the 2017 modeling pathway discussed in the proposal offers a swifter, cheaper, and more accurate way of assessing air quality, and so did not believe that states that missed deadlines along the monitoring pathway should be allowed to further delay designations. Other commenters stated that the fact that modeling is less expensive than monitoring is not a substitute for what they believe is the superior accuracy of actual monitored data; and that they believe the lower costs of modeling do not offset the regulatory costs and other burdens on sources and communities that could result from nonattainment designations based on modeling.

One public interest group commenter stated that because the monitoring approach already could lead to designations occurring a full decade after the NAAQS was promulgated, it should be regarded as an absolute edge-of-the-envelope approach, meaning that failure to meet monitoring deadlines should result in areas being treated under the modeling pathway as a default. This commenter stated that setting such a policy in any final rule would properly incentivize actors to transmit information to the EPA in a timely manner.

A number of state and industry commenters did not agree that a would-be monitored area should be automatically designated at the same time as areas for which the modeling option was chosen in the event of any delay in monitoring. Commenters also stated that the proposed penalty for unanticipated monitoring site delays is excessive and there are too many uncertainties which argue against such automatic actions; especially in cases where the air agency has exercised all due diligence to ensure that the monitors are operational by the deadline in the rule.

c. EPA Response

The EPA is clarifying the relationship between this rule and the schedule for promulgating designations under CAA section 107. This rule does not establish any deadlines for designations or prescribe the manner in which future designations would occur. Therefore, it has never been the role of this rule, even as proposed, to promulgate schedules for designations of areas based on whether air agencies timely implement the rule. However, the proposed milestones for implementation of the

rule were devised in consideration of the Agency's preferred and anticipated schedule for completing area designations.

While this rule does not promulgate designation schedules, separate litigation activities have affected the schedule. On March 2, 2015, the U.S. District Court for the Northern District of California issued an order directing the EPA to complete designations pursuant to the schedule discussed earlier in this document. Affected air agencies considering the monitoring option under this rule should be aware of this schedule. Under the terms of the consent decree entered by the court, in order for the EPA to not be required to designate an area by December 31, 2017, air agencies choosing the monitoring option under this rule will need to install and begin operating those monitors by January 1, 2017. This is the date that the rule requires. However, while the rule does not provide designations schedules, and thus does not address how designation schedules would be affected by an air agency missing this deadline, the March 2015 consent decree does. If the monitor is not operational by January 1, 2017, the EPA will not be able to use the future monitoring information to be generated by those monitors in the initial designation for the area, because the court's order allows those designations to occur as late as 2020 only if the monitor is timely installed and operated. Where the January 1, 2017, deadline is not met, the designations must occur by December 31, 2017, and will have to depend upon other information available at that time.

The EPA's proposal addresses circumstances in which an air agency chooses to characterize through monitoring but fails to have monitors become operational on time. The proposal suggests that in these circumstances, the agency (or, for that matter, the EPA) would be required to conduct modeling under this rule and be relieved of further obligations to conduct monitoring, albeit late. The EPA's intent in its notice of proposed rulemaking was to explain that in these circumstances, where an air agency chooses to characterize air quality with new monitors but failed to have the new monitors operational by the January 1, 2017, deadline, the EPA envisioned designating such areas in conjunction with areas being characterized by modeling. That is, the EPA did not envision delaying the designation for such areas to the envisioned 2020 date when the Agency anticipates promulgating designations for areas characterizing air quality through a new

monitoring network. The EPA must now comply with a court-ordered designation schedule, in which the court expressly requires that areas that have not begun operation of a new monitoring network by January 1, 2017, must be designated by December 2017.

Nevertheless, the EPA wishes to clarify that an air agency that chooses monitoring as its means to meet the air quality characterization requirements, and commits in its July 2016 Annual Monitoring Network Plan to conduct such monitoring, remains obligated to fulfill the original requirement to monitor and to provide the resulting air quality characterization around a given SO₂ source, even if operation of new monitors commences after the January 1, 2017, deadline. If a state fails to meet the January 1, 2017, deadline, the state must still meet the monitoring requirements for the area pursuant to 40 CFR part 58, or the EPA may disapprove the state's monitoring plan for the following year, unless, of course, the monitoring plan is revised accordingly. Although, as discussed previously, the EPA will not be able to rely upon the future monitoring data to issue the designation on the court-ordered schedule, the future monitoring data may be useful for other purposes such as tracking progress and making later attainment status determinations needed for redesignations.

4. Monitor Shut Down

a. Summary of Proposal

In the preamble, the EPA proposed that a monitor that has been deployed under the monitoring option pursuant to this rule, and is located in an area that is subsequently designated attainment, may be eligible for shut down provided that the monitor meets certain criteria. The EPA proposed in § 51.1203(c)(3) that any SO₂ monitor identified in an approved state annual monitoring network plan to satisfy the rule requirements may be eligible for shut down if the following criteria are met: (1) The monitor is not also satisfying other minimum SO₂ monitoring requirements listed in 40 CFR part 58, appendix D; (2) the monitor is not otherwise required to meet requirements in a SIP or permit; and (3) the monitor has recorded a 3-year design value (DV) that is no greater than 50 percent of the 1-hour SO₂ NAAQS. The EPA also proposed that any SO₂ monitor eligible for shutting down would need to be approved by the EPA Regional Administrator before monitoring operations could cease. As an alternative, the EPA also proposed an option in which the same criteria noted

earlier would need to be met, except that the monitor would be eligible to cease operations if it recorded a design value (DV) in the 3-year period that is no greater than 80 percent of the 1-hour SO₂ NAAQS. The EPA requested comment on the two proposed options for DV criteria for SO₂ monitor shutdown, as well as other potential values within the 50–80 percent range. The EPA requested that commenters provide specific technical rationale supporting any approach they recommend. *See* 79 FR 27462, May 13, 2014.

b. Brief Summary of Comments

Some state and industry commenters agreed with the proposal that monitors placed pursuant to the monitoring option and located in areas that are designated as attainment should be eligible for shut down. Commenters also stated that providing state agencies with the flexibility to shut down unneeded monitors allows agencies to allocate their limited resources more appropriately. One industry commenter stated that, if the sources are properly controlled and/or limited by permit, the risk of significant increases in DVs over time is relatively low absent new sources entering the affected area. Several state and industry commenters supported the proposal, with one state commenter indicating that the use of the 50 percent threshold would be safe to use because the area would require a significant increase in future SO₂ emission to cause an exceedance of the 1-hour SO₂ NAAQS.

Some state commenters recommended that the threshold of 50 percent be dropped in the final rule since 40 CFR 58.14 already contains provisions for shutting down a monitor at 80 percent of the NAAQS. Commenters stated that there does not seem to be a reason to make the criteria more stringent than the existing criteria in 40 CFR part 58 and, if the EPA wishes to change those criteria, a revision to 40 CFR 58.14(c)(1) should be considered and made available for comment. Industry commenters stated that the requirement for annual reporting of changes in SO₂ emissions with the possibility that further monitoring could be required, argues against the more stringent 50 percent option.

Over 25 commenters supported the use of the 80 percent threshold. Commenters stated that 80 percent of the NAAQS is a strong enough criterion for shut down of an SO₂ monitor and the 80 percent criterion is consistent with criteria for shutting down most regulatory monitors. One public interest group commenter stated that new

monitors should not be shut down since (1) short-term monitor readings may not be consistent with long-term attainment and (2) the SO₂ monitor network needs to be rebuilt. In addition, this commenter recommended that monitors not be removed if the concentrations they are recording are trending upward, indicative of potential future problems.

c. EPA Response

The EPA is finalizing the rule to allow any SO₂ monitor identified by an air agency in its approved Annual Monitoring Network Plan as having the purpose of satisfying § 51.1203 which is not in an SO₂ nonattainment area, and is not also being used to satisfy other ambient SO₂ minimum monitoring requirements listed in 40 CFR part 58, appendix D, section 4.4, and is not otherwise required as part of a SIP, permit, attainment plan or maintenance plan, to be eligible for shut down if it produces a DV of no greater than 50 percent of the 1-hour SO₂ NAAQS in the first or second 3-year periods of its operation. The EPA has chosen to adopt this shutdown allowance so that those monitors that record DVs that are well below the NAAQS after 3 or 4 years of operation would no longer be required to operate under the unique provisions of this rule, if they are otherwise not required under other requirements. This potential ability to shut down monitors would relieve any resource burden under this rule on air agencies where NAAQS violations have not and likely will not occur. This particular provision will not require estimates of future concentrations as do existing shutdown provisions in 40 CFR 58.14.

More specifically, this monitor shutdown provision works by assessing how two DVs (*i.e.*, one calculated from monitor data collected in years 1 through 3, and one from years 2 through 4) would compare to the 50 percent of the NAAQS shutdown criterion. If a monitor produces a DV from data collected in years 1 through 3 that is no greater than 50 percent of the NAAQS, it is eligible for shutdown if it is not otherwise required to operate. If the DV is above the 50 percent threshold, the monitor must continue operation. If that monitor produces a DV no greater than 50 percent of the NAAQS from data in years 2 through 4, it is eligible for shutdown if not otherwise required to operate. If, instead, the DV is again above the 50 percent threshold, the air agency must continue to operate the monitor. From that point forward (*i.e.*, for data collection year 2021 and beyond), the applicable monitor shutdown provisions are those that exist in 40 CFR 58.14, which include

probabilistic estimations of future concentrations and other circumstantial situations that might allow for monitor shutdown.

The Agency would like to note language of particular relevance from 40 CFR part 58 regarding eligibility for shutdown based on recorded data and calculated design values that exists in § 58.14(c)(1). This particular provision allows monitoring discontinuation with the Regional Administrator approval for: “Any PM_{2.5}, O₃, CO, PM₁₀, SO₂, Pb, or NO₂ SLAMS monitor which has shown attainment during the previous 5 years, that has a probability of less than 10 percent of exceeding 80 percent of the applicable NAAQS during the next 3 years based on the levels, trends, and variability observed in the past, and which is not specifically required by an attainment plan or maintenance plan. In a nonattainment or maintenance area, if the most recent attainment or maintenance plan adopted by the state, and approved by the EPA, contains a contingency measure to be triggered by an air quality concentration and the monitor to be discontinued is the only SLAMS monitor operating in the nonattainment or maintenance area, the monitor may not be discontinued.”

In any circumstance regarding monitor shutdown, whether pursuant to this final rule or 40 CFR part 58, the air agency must receive the EPA Regional Administrator approval of a request to cease operation of the monitor as part of its action on the annual monitoring plan under 40 CFR 58.10 prior to the shutdown of any qualifying monitor. Therefore, under the final rule, there are two sequential routes for possibly shutting down a monitor. If a monitor shows DVs greater than 50 percent of the NAAQS after the first two 3-year periods of its operation and cannot be approved for shut down under the first sequential route, the monitoring will continue. However, after 5 years of operation it can be considered for shutdown if it meets the criteria that the EPA's rules at 40 CFR 58.14(c)(1) apply, with the EPA Regional Administrator's approval. These monitors might also be subject to shut down eligibility as set forth in § 58.14(c)(2), (3), (5), and (6).

5. Annual Reporting Following Monitor Shutdown

a. Summary of Proposal

For any area for which the EPA has approved an air agency's request for an SO₂ monitor to cease operations, the EPA proposed that the air agency be required to assess SO₂ emissions changes annually, beginning in the year after the monitor ceases operation. (The

proposal contained a similar requirement for modeled areas, discussed later in this section.) For areas around these sources in which total SO₂ emissions increase over the emissions for the previous year, the EPA proposed that the air agency would be required to submit to the EPA an assessment of the cause of the increase and provide an initial determination of whether the air quality around that source should be further re-assessed. The EPA proposed that the air agency could choose to reinstate the operation of the air monitor or complete air quality modeling for the source area to verify that the area continues to attain the standard. In the proposal, the EPA stated that, if modeling or monitoring information required to be submitted by the air agency to the EPA pursuant to § 51.1205 indicates that an area is not attaining the 2010 SO₂ NAAQS, the EPA may take appropriate action, including but not limited to disapproving the monitoring plan, requiring adoption of enforceable emission limits to ensure continued attainment of the 2010 SO₂ NAAQS, redesignation of the area to nonattainment, or issuance of a SIP Call.

The EPA proposed two options for how the air agency would submit this report and how the EPA would review and act on it. Under the first option, the EPA proposed that the air agency would submit a report to the EPA annually as an appendix to the air agency's annual monitoring plan; the annual monitoring plan is required to be submitted to the EPA Regional Administrator by July 1st each year. In the proposal, the EPA stated that the inclusion of this verification report as an appendix to the annual monitoring plan would ensure that the report would be subject to public review and comments that are to be provided for the monitoring plan pursuant to regulations at 40 CFR 58.10.

Under the second option, the annual report of emissions data for sources for which the state ceased the operation of nearby monitors would be submitted to the EPA in the form of a separate, independent annual submittal from the state to the EPA Regional Administrator due by the same July 1st date each year. This independent submittal would follow the general guidelines set forth in 40 CFR 58.10 regarding opportunities for public review and comment as described in Option 1, but the report would only include the annual assessments associated with sources in areas that were designated unclassifiable/attainment and for which the EPA granted approval to cease monitoring. The EPA invited comment on any suggested alternatives to these

procedural options. *See* 79 FR 27462, May 13, 2014.

b. Brief Summary of Comments

Several state and industry commenters stated that the proposed annual reporting requirement appears to be unduly burdensome. Some industry commenters opposed the annual reporting requirement, stating that SO₂ emissions from sources are already available to the EPA and the need for ongoing data requirements has not been demonstrated. One state commenter suggested that, if the monitors that were removed were providing data under 50 percent of the standard, there is no reason to perform such analyses since an increase in emissions that would result in such a drastic increase in monitored design values would surely be associated with changes to operations that would necessitate air permitting, which evaluates projects for NAAQS compliance.

One group of state commenters stated that the EPA's proposed July 1st submittal date is unrealistic because states will not have the required quality-assured emissions monitoring data processed by July 1st. Some state and industry commenters recommended a less burdensome process in which this verification would take place every 3 to 5 years instead of annually, pointing out that the EPA publishes the NEI data every 3 years, the EPA reviews the NAAQS every 5 years, and there is a 5-year ambient monitoring assessment plan required by 40 CFR 58.10.

Commenters requested clarification regarding the determination of an emissions increase. One state commenter stated that it is unclear whether an emission increase should be based on an increase greater than the 3 year average of emissions during the initial monitoring analysis, an increase above the highest single year of emissions during the initial monitoring analysis, or some other metric. Some commenters recommended the comparison be based on some compliant level of emissions from the year(s) where the monitor demonstrated attainment with the standard, since the “increase” or “decrease” in emissions of SO₂ may have resulted in total SO₂ emissions levels well below the annual emission rates during the years when monitoring data showed compliance.

One tribal and several state commenters supported the option of including the annual emissions analysis with the annual monitoring plan. One commenter stated that the analysis of emissions is closely related to network planning, and this procedure would provide a single document for public

inspection and EPA review and approval. Another commenter stated that the annual monitoring plan may not be the best tool or location to place modeled data, emission reports, ongoing data requirements, and requests to cease modeling. Other state commenters recommended that the monitoring plan verification report be considered a separate element for ease of processing and for public review.

c. EPA Response

The EPA has decided not to finalize the proposed requirement that any state with an area for which the EPA has approved the air agency's request for an SO₂ monitor to cease operations must still assess SO₂ emissions changes annually, beginning in the year after the monitor ceases operation. The EPA made this decision based upon comments on the proposed rule, and in recognition that a cessation of monitoring will not occur unless a monitor has measured SO₂ concentrations well below the NAAQS for a given time period and an EPA Regional Administrator has allowed the shut-down. The Agency is persuaded by commenters that monitor shutdown provisions, along with generally applicable emissions reporting requirements, are of sufficient strength that subsequent additional annual observation and reporting of SO₂ source emissions profiles by states specifically due to this rulemaking is unnecessary. Further, there are means by which monitoring can be reinitiated in the future if the unlikely scenario occurs where SO₂ emissions rise significantly in an area, or other data indicate possible NAAQS violations in an area after a monitor has been shut-down, mainly through the EPA Regional Administrator authority granted in 40 CFR part 58, appendix D, section 4.4.3.

6. Modeling Issues

a. AERMOD

i. Summary of Proposal

In the proposal, the EPA stated that the Agency anticipates that in implementing the rule air agencies would likely use AERMOD to conduct modeling, as AERMOD is the EPA's preferred near-field dispersion model and has been demonstrated to be a reliable predictor of SO₂ air quality given appropriate input data. The EPA explained in the proposed rule that, as part of its development, AERMOD was evaluated using 17 field studies, several of which involved short-term measurements of SO₂, robust site-specific meteorology and accurate measurements of emissions. The EPA

stated in the proposal that the Agency is confident that AERMOD can provide accurate predictions of actual SO₂ concentrations given representative meteorology and accurate emissions inputs. *See* 79 FR 27463, May 13, 2014.

ii. Brief Summary of Comments

One industry commenter stated that, for certain conventional SO₂ emission scenarios, such as tall stacks at coal fired EGUs, AERMOD can be at least reasonably predictive. One public interest group commenter stated that AERMOD modeling performs particularly well in evaluating emission sources with one or a handful of large emission points. This public interest group commenter cited a declaration of Roger W. Brode (EPA) filed in the EPA's successful defense of the 2010 SO₂ NAAQS in which he stated that AERMOD is capable of accurately predicting whether the revised primary SO₂ NAAQS is attained and whether individual sources cause or contribute to a violation of the SO₂ NAAQS. This commenter also stated that AERMOD has been tested and performs very well during conditions of low wind speeds, citing comments of Camille Sears.

A number of commenters expressed concern with the use of AERMOD. Some commenters stated that AERMOD was intentionally designed to over-predict SO₂ concentrations. Several commenters referenced studies that indicate AERMOD over-predicts, including studies by the Electric Power Research Institute (EPRI), AECOM and some air agencies. Commenters identified a number of issues that they believe need to be addressed because they lead to over-predicting SO₂ concentrations, including buoyant line sources, building downwash, conservative assumptions in terms of model input, modeling of multiple sources, periods of low wind speed, steep terrain and lack of representative meteorological data. Commenters stated that the individual aspects of AERMOD and the EPA's guidance that contribute to over-prediction of the SO₂ concentrations in the context of the 1-hour NAAQS are multiplicative.

iii. EPA Response

In this final rule, the EPA is not promulgating a requirement that air agencies use AERMOD in all cases, but is retaining the existing flexibility otherwise provided by the EPA's rules for agencies to support the use of the best model for a particular case. The EPA's latest recommendations for making this assessment are contained in the Modeling TAD. In most cases, the EPA believes that AERMOD will likely

be the model of choice by air agencies to address the requirements of this rule, unless the application involves a different recommended model, such as the Buoyant Line and Point Source Dispersion Model (BLP). Models recommended for particular applications are listed in appendix A of the EPA's Guideline on Air Quality Models.¹⁰ Section 3.2 of the EPA's Guideline on Air Quality Models outlines the procedures for use of alternative models for those cases where an alternative model may be more appropriate than a preferred model. In addition, the Modeling TAD also discusses past use of alternative models for particular applications.¹¹ The EPA recommends consultation with the appropriate reviewing authority or EPA Regional Office to determine if the use of an alternative model is valid for that application.

In addition, as stated previously, the TADs are documents that provide recommendations but are not binding or enforceable and create no obligations on any person. Although the draft TADs are referenced as recommended approaches in the preamble to the proposal and in this rulemaking, they are not required to be adhered to by any state who is required to characterize air quality around an SO₂ source identified in this rulemaking. The TADs have been provided in order to potentially aid air agencies seeking advice in the air quality characterization process required by this rulemaking.

With regards to concerns regarding model conservatism, EPA recently proposed updates to AERMOD to address concerns regarding buoyant line sources, building downwash, and low wind speed issues. *See* 80 FR 45340 July 29, 2015. With regards to comments about model inputs that lead to over-estimates, as part of its development, AERMOD has been shown to perform well against observed concentrations when actual emissions have been used. The modeling of actual emissions for multiple sources is not anticipated to cause over-predictions. The modeling TAD also discusses that the number of sources explicitly modeled in an

¹⁰ Revision to the Guideline on Air Quality Models: Enhancements to the AERMOD Dispersion Modeling System and Incorporation of Approaches to Address Ozone and Fine Particulate Matter" can be found at <http://www.epa.gov/ttn/scram/11thmodconf.htm>.

¹¹ It is the EPA's intention to update the Modeling and Monitoring TADs as necessary to reflect any change in policy or to make clarifications that are necessary. Therefore, any comments on the TADs themselves that have been submitted in response to the proposed rule will be addressed as a part of any updates made to the TADs in the future, rather than in this final rule.

application is expected to be low and that in many cases, a number of sources in a modeling domain can be represented by background concentrations instead of being explicitly modeled, thus reducing potential overestimates in modeling.

b. Emissions Data

i. Summary of Proposal

The EPA proposed that modeling analyses be based on either actual 1-hour SO₂ emissions from the most recent 3 years or federally enforceable allowable emissions. The EPA referred readers to the Modeling TAD for a more detailed discussion of a range of recommended options for determining actual emissions. While actual emissions would be the preferred choice to use for emissions inputs, air agencies have the option of using a more conservative approach by inputting a source's most recent 3 years of allowable, or "potential to emit," emissions. Additional information and recommendations on this approach are discussed in the Modeling TAD. *See* 79 FR 27446, 27464, May 13, 2014.

ii. Brief Summary of Comments

More than 30 state and industry commenters supported statements in the EPA's proposal that allow the use of actual emissions as an input in the air quality modeling in order to most effectively serve as a surrogate for comprehensive ambient monitoring results. Several commenters suggested that the use of allowable emissions as an input to air quality modeling analyses would result in modeled air quality values that were higher than air quality levels that would be expected to be observed by a properly sited ambient monitor. Commenters stated that using actual emissions is even more important when conducting a cumulative impact analysis (assessing potential impacts from two or more sources) since the model's tendency to overestimate ambient air impacts is compounded when numerous sources are all modeled at peak emissions at all times.

Several state and industry commenters supported the EPA's proposal to base the modeling analyses on actual emissions over a 3-year period. One commenter noted that, in situations where multiple sources are being modeled, the most recent 3 years of actual emissions data may not be the same for all sources, particularly if there is a mix of EGUs and non-EGUs. One state commenter suggested that, if justification can be provided for an alternative dataset, it too may be considered for modeling. One state

commenter recommended the rule clarify that states must use the most recent 3 years of emissions data that are available at the time that a modeling protocol for that area is submitted to the EPA, and that revised modeling should not be required if more recent emissions data become available.

iii. EPA Response

When using actual emissions, the EPA believes the most recent 3 years of time varying emissions (e.g., emissions that vary hourly, seasonally, monthly, daily, etc.) should be modeled since the air quality modeling is being used as a surrogate for monitoring. The Modeling TAD gives recommendations on inputting hourly emissions into AERMOD for those sources with hourly continuous emissions monitoring (CEM) data and also gives recommendations on inputting time varying emissions (e.g., seasonally, monthly, etc.) when no hourly emissions are available and only annual emissions and data such as production logs or fuel usage are available. However, the final rule does not restrict the ability of air agencies to use more conservative allowable emissions in conducting their modeling. In the event that a particular source does not have the most recent 3 years actual of emissions, it may be possible to use the most recently available emissions or develop the most recent 3 years of emissions using recommendations in the Modeling TAD. The reviewing authority should work with the appropriate EPA Regional Office on the use of such emissions. For an application that contains a mix of sources whose emissions data are not concurrent with each other, it is possible to model all of these sources together following recommendations in the Modeling TAD. Once a modeling protocol or modeling analyses have been submitted, there is no requirement to revise the protocol or modeling respectively if more recent emissions have become available since the submission, and in the best professional judgment of the reviewing authority, those emission changes do not warrant a revision to the protocol or modeling analyses.

c. Accounting for Recent Emission Reductions in Modeling Analyses

i. Summary of Proposal

In the proposal, the EPA noted that, in some cases, air quality modeling conducted in advance of January 2017 may indicate a violation of the 1-hour SO₂ standard and, to address such situations, the air agency may wish to consult with the source(s) and take

action to adopt enforceable emissions limitations as necessary prior to January 2017 to potentially avoid a nonattainment designation. The EPA proposed that, as long as these controls are implemented and enforceable as of January 2017, it would be appropriate for the new lower allowable emissions to be used in the modeling analysis in place of the higher actual emissions.

The EPA proposed that, if the air agency is able to demonstrate attainment with the new controls or emission limits, the governor of the state has the opportunity to modify its designation recommendation accordingly, if that designation has not yet been issued. *See* 79 FR 27464, May 13, 2014.

ii. Brief Summary of Comments

A number of commenters supported the inclusion of language providing the option for states to model more recent emission rates based on enforceable limits implemented in advance of the January 2017 modeling deadline. Commenters stated that this approach is a reasonable option which would provide industry with an incentive to achieve timely emission reductions to meet the regulatory requirements while potentially relieving air agencies from the requirements that a nonattainment designation entails, if such a designation has not yet been issued. One industry commenter requested that the method for reducing emissions not be limited to installing controls.

Some state commenters requested that the EPA develop methodologies for air agencies to work with sources whose 2015 emissions are above the threshold to establish permanent and enforceable emission limitations that show attainment with the SO₂ standards prior to a designation of such sources' areas. One state commenter stated that there must be a process that allows for the air agencies' discretion under extenuating circumstances in order to account for significant changes at a facility that occurred during the most recent 3 years.

iii. EPA Response

After review of the comments, the EPA continues to believe that it is appropriate for the air agency to consult with the affected source(s) and take action to adopt enforceable emissions limitations as necessary prior to January 2017. As long as the emissions limitations are in place and enforceable by January 2017, the new allowable emission limit may be input into the model instead of the actual emissions of the most recent 3 years.

The EPA expects that a number of emissions sources may be candidates for this optional approach. Many EGUs

were subject to compliance deadlines for the MATS in April 2015 (or in some cases are subject to April 2016 deadlines), and the EPA expects that many will become subject to title V permits that require compliance with MATS SO₂ emission limits as the means of demonstrating compliance with the MATS requirements related to acid gas emissions. These EGUs may be able to adopt control technologies and enforceable emission limits to reduce emissions of SO₂, as well as mercury. Similarly, industrial boiler operators will have the incentive to adopt SO₂ emission limits as part of their strategy for complying with the Industrial Boiler Maximum Achievable Control Technology Standard. 78 FR 7162, January 31, 2013.

Therefore, the EPA believes that as long as these emissions reductions are implemented and enforceable by to January 2017, it would be appropriate for the new lower allowable emissions to be used in a modeling analysis in place of the higher actual emissions. The air quality impacts from such a source would be characterized by the new enforceable allowable limit and could be used as a basis for future determinations regarding areas' attainment status.

d. Stack Height

i. Summary of Proposal

The EPA described its view in the proposed rule that actual stack height is appropriate to use in conjunction with actual emissions in a modeling approach to characterize current air quality. The EPA also described its view that, if an air agency chooses to use allowable emissions, then it should use good engineering practice (GEP) stack height when the actual stack height exceeds the GEP height because the GEP height is used when calculating the allowable emission rates. The EPA noted that additional recommendations on the use of actual stack height can be found in the Modeling TAD. *See* 79 FR 27464, May 13, 2014.

ii. Brief Summary of Comments

A number of state and industry commenters supported the EPA's views on the use of actual stack height in conjunction with actual emissions. However, several state and industry commenters did not agree that GEP stack height should be used if a state chooses to use allowable emissions. Commenters stated the EPA should allow sources to model using actual stack height regardless of whether they are modeling actual emissions or allowable emissions since the purpose

of the rule is to estimate, as accurately as possible, conditions that would be measured at a monitor. Commenters also stated that GEP stack height is not always a factor in establishing the emissions limit, where such limits are not established under an implementation plan subject to the restrictions of CAA section 123; for example, in the context of emission limits that are established based on emission standards under CAA section 112, such as the MATS rule. One commenter stated that the concern about giving inappropriate credit for dispersion techniques is irrelevant in the context of this designation modeling as CAA section 123 applies only to emission limitation controls.

iii. EPA Response

After consideration of comments, the EPA continues to recommend the use of actual stack heights when using actual emissions and the use of GEP height when modeling with allowable emissions where such emissions limits are or would be subject to CAA section 123 and to the EPA's corresponding regulations implementing GEP requirements. This would include limits established under any CAA provision that are intended to be credited in an implementation plan for attaining and maintaining the NAAQS. The use of GEP for allowable emissions modeling in such situations is based on the fact that the modeling conducted to determine the emissions limits was or would be based on GEP stack heights. Therefore, if actual stack heights (when above GEP) were used in such situations, the behavior of the modeled sources would not be consistent with the modeling results used to determine the emissions limits relied upon to demonstrate attainment of the NAAQS.

e. Meteorological Data

i. Summary of Proposal

For purposes of conducting modeling that simulates what might be expected to be measured by an ambient monitor, the EPA recommended the use of 3 years of meteorological data. The EPA stated that, ideally, air agencies would use the most recent 3 years of meteorological data and the same 3 years of actual emissions data when modeling for designations. The EPA noted that the Modeling TAD has additional suggestions on these meteorological inputs. *See* 79 FR 27465, May 13, 2014.

ii. Brief Summary of Comments

Some commenters recommended the use of 1 year of meteorological data rather than 3 years and provided several

reasons: Use of 1 year of on-site meteorological data would yield a very robust data set; 3 years does not provide a significant benefit over 1 year; 1 year of meteorological data is sufficient for PSD purposes; collection of 3 years of data would delay the running of AERMOD; and collection of 3 years of data would be unnecessarily expensive. Commenters stated that, while relatively few meteorological databases with 3 years of on-site meteorological data exist, many sources may have previously collected a full year of data and should be able to use that data without starting all over again on an expensive 3-year effort. One state commenter asked the EPA to clarify what is meant by "the most recent 3 years."

One state commenter recommended that up to 5 years of meteorological data be used and stated that, while a single 3-year period may not provide adequate confidence in the analysis, 5 years will provide more 3-year combinations that can be compared to the NAAQS, and more meteorological data improves confidence in the result. Some commenters requested that the EPA clarify:

- That air agencies need not use concurrent meteorological data, given that some sites simply do not have concurrent meteorological data.
- Given the lack of 3 years of on-site data in many areas, the EPA should approve the use of prognostic meteorological data.

iii. EPA Response

The EPA's recommendation is to use the most recent 3 years of representative site-specific data or when site-specific data are not readily available, or it is not feasible or cost-effective to collect site-specific data, the most recent 3 years of representative National Weather Service meteorological data or other representative data. When the most recent 3 years of representative meteorological data are not available, the use of older representative meteorological data can be used. For such cases, the Modeling TAD offers recommendations on synching the older meteorological data with the more recent emissions, especially for those sources utilizing hourly emissions. The Modeling TAD provides an explanation of the need for 3 years of meteorological data, even if only 1 year of on-site meteorological data are available. With regards to the type of meteorological data that are available, *i.e.* site-specific, NWS data, or prognostic data, the EPA's Modeling Guideline should be consulted on the latest acceptable forms

of meteorological data at the time of the modeling analyses.

f. Modeling Protocol, Including Multiple Sources

i. Summary of Proposal

This rulemaking proposed that each state list the sources that are to be addressed under this rule and the approach to be used to meet this rule's requirements (air quality characterization through monitoring, air quality characterization through modeling, or establishment of a requirement for a timely source shutdown) for each source. In preparation for conducting modeling, the EPA proposed that the state would need to develop a modeling protocol for all the sources the state plans to model. Specifically, in § 51.1203(d), the EPA proposed that the air agency consult with the appropriate EPA Regional Office in developing modeling protocols and submit the protocol to the Regional Administrator for review. In § 51.1203(d)(1), the EPA proposed that the modeling protocol shall include information about the modeling approach to be followed, including but not limited to the model to be used, modeling domain, receptor grid, emissions dataset, meteorological dataset and how the state will account for background SO₂ concentrations. The EPA stated that details on the suggested protocol elements and the recommended standard format of this protocol can be found in the Modeling TAD. *See* 79 FR 27465, May 13, 2014.

ii. Brief Summary of Comments

Some state and industry commenters requested that the EPA provide more specific guidance on conducting multi-source modeling analyses. Commenters stated that leaving these topics for negotiation with the EPA Regional Office will lead to inconsistent application of guidance among states. Commenters requested guidance on when a source should be modeled by itself, when a source should be modeled with other sources in the surrounding area, more detail on the size and location of sources that should be included in a multi-source analyses, and who would be responsible for conducting analyses when sources are located in multi-state areas. One state commenter requested that guidance on modeling facilities across state lines should be addressed.

iii. EPA Response

The determination of whether to include nearby sources in a modeling exercise around a source that exceeds the emissions threshold is case specific,

and a standardized methodology cannot be developed to fit all scenarios.

Therefore, the final rule does not promulgate requirements addressing nearby sources. The EPA has offered technical recommendations in the Modeling TAD. The identification of nearby sources for modeling should rely on sound technical reasoning and best professional judgment. The EPA emphasizes that not all emissions sources near the source of interest need to be explicitly modeled, as in some cases the impacts of those sources can be sufficiently represented by a background monitor as discussed in the Modeling TAD and section 8.2 of the EPA's Modeling Guideline.

As stated previously, the TADs provide recommendations but are not binding or enforceable and create no obligations on any person. Although the draft TADs are referenced as recommended approaches in the preamble to the proposal and in this rulemaking, they are not required to be adhered to by any air agency who is required to characterize air quality around an SO₂ source identified in this rulemaking. The TADs have been provided in order to potentially aid air agencies seeking advice in the air quality characterization process required by this rulemaking. The Agency has indicated that the TADs are meant to be used as possible tools to aid air agencies. The EPA is not codifying changes to the TADs in this rulemaking in response to any comments received on the proposed rule. The TADs are living documents which the EPA may update as necessary.

g. Ongoing Air Agency Data Requirements for Areas That Were Initially Modeled

i. Summary of Proposal

The EPA proposed that, for areas with modeled air quality data based on actual emissions that did not exceed the standard, air agencies would be required to continue to submit information to the EPA in subsequent years that provide a reasonable assurance that the area continues to have air quality that does not exceed the standard. The EPA proposed three options for how air agencies that rely on modeling of actual emissions would need to conduct additional emissions and/or modeling analyses. In the proposed rule, the EPA believed that such additional analyses would only be needed for areas that had been designated as "unclassifiable/attainment" based on actual emissions-based modeling. The EPA further noted in the proposed rule that modeled source areas would not be subject to

these ongoing data requirements if (1) modeling for the source was conducted using allowable emissions, or (2) the modeling for the source was conducted using actual emissions and the relevant sources then adopted enforceable emission limits consistent with the actual emissions rates used in the modeling.

In Option 1, the EPA proposed that any air agency that will be subject to an ongoing data requirement for modeled areas would be required to assess the most recent SO₂ emissions data annually, beginning in the year after the area is designated as unclassifiable/attainment, and to conduct updated air quality modeling every 3 years, and in additional years when the air agency or the EPA determines that such modeling is warranted. Air agencies would be able to request that the EPA Regional Administrator approve a suspension of the triennial modeling requirement for an area if their most recent modeling DV was less than 50 percent of the NAAQS.

In Option 2, the EPA proposed to require the air agency to provide the EPA with an assessment of SO₂ emissions changes for each source annually, as in Option 1, but to not have a requirement to conduct updated air quality modeling every 3 years. For sources for which the air agency determines that emissions have increased, the air agency would be required to submit to the EPA an assessment of the cause of the increase, and provide the EPA with an initial determination of whether air quality modeling would be needed to verify that the area around the source continues to have air quality levels that do not exceed the standard. If the air agency or the EPA determines that additional air quality modeling is necessary, the air agency would be required to submit the results of that assessment in a timely fashion—within 12 months.

In Option 3, the EPA proposed to require the state to perform periodic screening modeling every 3 years for all source areas that had been previously modeled and determined to be attaining the standard, and submit such modeling for review to the EPA. Screening modeling is commonly performed using a set of default parameters rather than area-specific parameters, and it generally simulates air quality levels that are more "conservative" than levels that would be estimated using area-specific parameters. In the proposal, the EPA stated that a complete, full-scale modeling analysis with updated emissions and meteorological inputs would only be required if the state performs screening modeling that indicates a potential violation. Under all

three options, if the modeling performed indicates that air quality levels in an area exceed the SO₂ NAAQS, the EPA may take any appropriate action, including, but not limited to, requiring adoption of enforceable emission limits to ensure that future air quality levels in the area do not exceed the SO₂ NAAQS; redesignation of the area to nonattainment; or issuance of a SIP call requiring action by the state to bring the area into attainment.

The EPA requested comment on these three options for ongoing data requirements for air agencies with sources modeled based on actual emissions, and requested that each commenter provide a clear rationale for their position. The EPA also invited comments on any alternative ideas and asked that the commenter provide a detailed rationale and estimate of any associated costs for any such recommendations. *See* 79 FR 27465, May 13, 2014.

ii. Brief Summary of Comments

Several state, environmental, and tribal commenters supported Option 1. These commenters stated that an approach that simply assesses SO₂ emissions changes at large sources would not account for variations in meteorological conditions, increased SO₂ emissions from interactive sources, or improvements to the actual modeling computer program. One commenter stated that annual modeling makes far more sense from the perspective of protecting the public health, and suggested that modeling once every 3 years is an extremely periodic and slow way of assessing air quality, such that people living in the impacted area could be unaware for years, and thus unable to take action to protect themselves or place pressure on their government to correct the problem.

Several state and industry commenters opposed Option 1 and stated that modeling assessments should not be conducted on a 3-year or any other regular basis. Some believed the requirement to model every 3 years would be an inefficient use of resources and arbitrary since it would not take into account information which might show that undergoing a revised modeling analysis would be unnecessary. They claimed that as long as conditions have remained the same or possibly improved in the intervening timeframe, additional modeling will provide no additional useful information. Others opposed Option 1 on the grounds that no other ambient standard requires such a detailed ongoing analysis. Consistent with their concerns about resources, commenters

supported the aspect of Option 1 that would enable the air agency to terminate certain ongoing data requirements if air quality modeling indicated a DV equal to or less than 50 percent of the 1-hour SO₂ NAAQS.

A number of state and tribal commenters objected to Option 2. One tribal commenter stated that the proposed emissions assessments required in Option 2, which lack a regular air quality modeling requirement, are not stringent enough. Some state commenters expressed concern that this option could lead to an indeterminate number of future analyses required, and that such open-ended requirements have cost implications that could strain states' already-limited resources. On the other hand, more than 20 state and industry commenters supported Option 2 because it balances providing air quality protection with level of effort from state regulatory authorities. Several commenters noted that with SO₂ emissions declining on a national level, remodeling would not be expected to be required and a simple analysis of the change in emissions would be sufficient to determine the need for additional modeling. A state commenter suggested providing clearer guidance regarding what level of emissions increase would trigger further evaluation of sources, rather than having the air agency provide an assessment for each source with increased emissions. The commenter suggested (1) if the original modeling level was equal to or greater than 90 percent of the standard, then new modeling would be required for the area in the event there is any increase in emissions in the area; (2) if the original modeling level was between 50 percent and 75 percent of the standard, then new modeling would be required for the area if area emissions increased by 15 percent or more; and (3) if the original modeling level was less than 50 percent of the standard, then the ongoing modeling requirement should not apply (similar to the provision in Option 1).

Another state commenter stated that, ideally, under Option 2, agencies would have a 2.5-year timeframe to complete the entire ongoing data requirement process: The first year would consist of preparing and submitting data for the national emissions inventory for the previous year; 6 months thereafter agencies would submit a report to the EPA stating whether air quality modeling is needed; and 12 more months would then be permitted to perform any additional modeling deemed necessary.

Regarding Option 3, several state and industry commenters disagreed with

having any default modeling requirement, even for screening modeling, and opposed this option. Several commenters objected to the required use of a screening model for the following reasons: Most of the facilities will have multiple emission points and the screening tools were not designed to evaluate such complex situations; the mandatory use of screening models will result in an overly cautious, ineffective approach to verification; and screening modeling is almost as complex and time consuming as full-scale modeling and thus this option would not be a good use of state and the EPA resources.

Lastly, some commenters suggested that the air agency should be able to choose which ongoing data requirement approach it intends to follow for a particular area. Another commenter suggested an approach that would be a combination of all three options, where the air agency would evaluate emissions changes each year, and then conduct screening modeling or full-scale modeling if the magnitude of emission changes warrant.

iii. EPA Response

The EPA recognizes the concerns of commenters about the resource considerations associated with Options 1 and 3, which for areas with modeling based on actual emissions and designated as attaining would require full-scale modeling or screening modeling every 3 years, even if annual emissions in the area were not increasing. We disagree with those commenters who oppose any requirement for ongoing data assessment at all; and with those commenters who suggest a requirement for annual modeling for all areas. The EPA believes that a reasonable requirement for ongoing evaluation of priority areas identified by this rule is important to meeting the public health objectives of this NAAQS while balancing resource constraints of air agencies in a manageable way. The EPA agrees with commenters that suggest it would be reasonable to check emissions changes first, and based on that information, then make a determination about whether to conduct additional modeling. The EPA is also mindful of the fact that in this rule, modeling is effectively serving as a surrogate for monitoring, and so the EPA believes it is reasonable to have similar approaches for terminating the ongoing data requirements for both areas where air quality was initially characterized by monitoring, and areas where air quality was initially characterized by modeling.

After considering the comments received on the proposed rule, the EPA is finalizing a combination of elements from Option 1 and Option 2. As outlined in proposed Option 2, the final approach requires the air agency to conduct an assessment of emissions changes annually for all source areas for which the initial air quality modeling was based on actual emissions and the area was designated as attaining the standard. The air agency must provide this assessment to the EPA in the form of a report, to be submitted by July 1 of the following year. This assessment should reflect the most recent quality-assured emissions data available for the relevant sources in the area. The report must also describe the reason for emissions increases in the previous year at any listed sources, and must include a recommendation indicating for which sources and areas the emissions increase was substantial enough to warrant updated air quality modeling that would help determine air quality levels relative to the standard.

Adapting suggested criteria from a state commenter (with some modification), the EPA recommends as a general guideline that the air agency should conduct additional modeling (using the most recent actual emissions as inputs) for an area if (1) the original modeling level was equal to or greater than 90 percent of the standard, and there is any increase in emissions in the area; or (2) if the original modeling level was between 50 percent and 90 percent of the standard, and emissions in the area increased by 15 percent or more. However, the EPA is not promulgating specific criteria for when additional modeling is required because the EPA believes that the need for additional modeling is best judged on a case-by-case basis reflecting case-specific information on emissions changes and prior modeling results. For example, if the emissions increase was substantial and the previous modeling had indicated that air quality in the area was just under the standard, then air quality modeling would be warranted. In other cases where air quality has been modeled to be well below the standard and annual emissions increase only slightly in the following year, the air agency would be able to exercise judgment regarding whether additional modeling would be needed. The use of case-specific judgment will be especially important in cases involving multiple sources or multiple emission units that may have different emissions-air quality relationships.

The modeling analysis for the area would then be due within 12 months of the air agency recommendation that

such modeling is warranted (*i.e.* by July 1 of the following year). In this way, if new modeling is recommended, the whole process ideally would take 18 months from the end of the “ongoing data requirement” year to when new modeling would be due (not 30 months as suggested by a state commenter).

The EPA finds that the relatively straightforward approach described in proposed Option 2 requiring the examination of emissions data annually (rather than conducting updated air quality modeling every 3 years for every area) is consistent with the frequency with which ambient monitoring data is evaluated. This approach also provides some flexibility to the air agency in recommending whether the magnitude of emissions changes in an area would be large enough to warrant new modeling. As compared to Options 1 and 3, this approach also would be expected to involve less overall workload for air agencies over time.

In addition, as provided in Option 1, the final rule also includes a provision in § 51.1205(b) enabling the air agency to terminate the ongoing data requirement for a modeled area if it meets certain criteria. The provision is analogous to § 51.1205(a), which allows for the air agency to obtain EPA approval to cease operation of a new ambient monitor if the most recent DV is low enough to meet certain criteria (*e.g.* less than or equal to 50 percent of the level of the NAAQS, or meeting the criteria of 40 CFR 58.14). Thus, for areas that were originally modeled based on actual emissions, § 51.1205(b) of the rule allows termination of the air agency’s annual emission reporting requirement if the air agency submits an air quality modeling analysis, using updated actual emissions data from the most recent 3 years, that demonstrates that air quality DVs at all receptors in the analysis are less than or equal to 50 percent of the 1-hour SO₂ NAAQS, and such demonstration is approved by the EPA Regional Administrator. Likewise, if the initial modeling of a source area demonstrates that air quality DVs at all receptors in the analysis are less than or equal to 50 percent of the 1-hour SO₂ NAAQS, and such demonstration is approved by the EPA Regional Administrator, the area would not be subject to ongoing data requirements as well. The EPA believes that including this type of provision in the final rule structures the rule in a balanced way for both modeled and monitored areas in order to meet the objectives of ensuring that such areas continue to meet the standard and continue to protect public health, while recognizing the resource constraints of air agencies.

h. Procedural Approach for Post-Attainment Annual Reporting

i. Summary of Proposal

The EPA proposed two options regarding the procedures by which air agencies would submit ongoing data reports to the EPA for source areas characterized through modeling, and by which the EPA would review and act on them. Under Option 1, the EPA proposed that the air agency would submit a report to the EPA annually as an appendix to its annual monitoring plan. The annual monitoring plan is required to be submitted to the EPA Regional Administrator by July 1 each year. The inclusion of this report as an appendix to the annual monitoring plan would ensure that the report would be subject to the same opportunities for public review and comment that are to be provided for the monitoring plan pursuant to regulations at 40 CFR 58.10. Those regulations specify that if the air agency modifies the monitoring plan from the previous year, then prior to taking final action to approve or disapprove the plan, the EPA would be required to provide an opportunity for public review and comment on the modified plan. The regulations also indicate that if the air agency has already provided a public comment opportunity in developing its revised monitoring plan and has made no further changes to the plan after reviewing the public comments that were received, then it could submit the public comments along with the revised plan to the EPA, and the EPA Regional Administrator would not need to provide a separate opportunity for comment before approving or disapproving the plan.

Under Option 2, the ongoing report would not be submitted to the EPA as an appendix to the annual monitoring network plan, but it would take the form of a separate, independent submittal from the state to the EPA Regional Administrator. The EPA proposed that this report would be due by the same July 1st date each year and that this independent submittal would follow the general guidelines set forth in 40 CFR 58.10 regarding opportunities for public review as described in Option 1, but the report would only include the annual assessments associated with sources in areas that were designated unclassifiable/attainment based on modeling of actual emissions.

In the proposed rule, the EPA requested comment on the two procedural options as well as any alternative ideas suggested by commenters. For any such recommendations, the EPA requested

that the commenter provide a detailed rationale and estimate of any associated costs. See 79 FR 27467, May 13, 2014.

ii. Brief Summary of Comments

Some state, tribal and industry commenters recommended that this information be included as an appendix to the annual monitoring plan, rather than as a stand-alone document. One commenter stated that, since both options have a deadline of July 1st each year, a separate document would only add more time and resource use. Several state commenters recommended that the assessment be submitted separately from the annual monitoring plan. These commenters provided the following rationale: Since these documents are not related, they should be kept separate; since the annual report refers to modeling, it will cause less confusion for the general public if it is a separate document from the annual monitoring plan; and because the annual monitoring plan and the emissions inventory submittals are performed by separate work units on different timelines, it would be better to deliver the products separately rather than delay one or the other to deliver them together.

iii. EPA Response

After considering the comments received related to both of the proposed options, the EPA believes that the best approach for the final rule is to allow the affected air agencies the discretion to either include the required annual data requirements report for modeled areas either as an appendix to the state's monitoring plan, or as a stand-alone document. The air agency will have the flexibility under the final rule to select the approach that best meets the Agency's workload, schedule, and particular needs. The EPA believes that either of the procedural approaches will be sufficient to implement the ongoing data requirements. Regardless of which approach is chosen by the air agency, the report must be submitted to the respective EPA Regional Office by July 1st annually and made available for public review and comment. The first report is due on July 1st of the year after the effective date of the area's initial designation and additional reports are due July 1st of each subsequent year.

E. Other Key Issues and Comments

Comments on the proposed rule also raised several other issues not already addressed in this document. This section identifies and addresses the key issues raised by those comments.

1. March 2015 Consent Decree

The proposed rule did not contain any regulatory deadlines for the EPA to complete area designations under the 2010 SO₂ NAAQS. However, at the same time that the EPA was developing the proposed rule and the final rule, the agency was also engaged in district court litigation from public interest groups and some states and state agencies seeking to have the EPA placed on a binding schedule to complete the designations. The parties in these cases filed complete briefs in one of these cases, resulting first in the court finding that the EPA was liable for having failed to meet the statutory deadline to complete all area designations. Subsequently, the EPA and the other parties conducted extensive settlement discussions over the remedy, *i.e.*, the schedule by which the EPA would complete its duties. This resulted in a settlement between the EPA and the public interest group plaintiffs, which the plaintiff-intervenors did not join.

On June 2, 2014, the EPA published notice of a proposed consent decree reflecting this settlement (*Sierra Club et al v. McCarthy*, Civil Action No. 3:13-cv-3953-SI (N.D. Cal.)). 79 FR 31325. This proposed consent decree included deadlines for the EPA to complete designations in three phases, the latter two of which were due on the same dates that the EPA discussed as its intended designations dates in the preamble to the proposed DRR. The EPA received several comments on the notice informing the public of the proposed consent decree itself, and in response to this proposed rule.

The EPA is not promulgating deadlines for its completion of area designations in this final rule. Therefore, any comments directed to the merits of the consent decree itself are outside the scope of this rulemaking, and we will not respond to them here. Instead, as discussed earlier in this document, on March 2, 2015, the court issued an order entering the consent decree and establishing its deadlines as binding on the EPA. As also explained earlier, the 2017 and 2020 deadlines for the latter two stages of designations established by the consent decree will allow the EPA and states to use the new data and information that is timely generated by the implementation of this rule to inform the designations required to be completed by those dates, but it is not likely that full implementation of the rule can occur quickly enough to support the next round of designations required by the court's order to be completed by July 2, 2016.

2. Recommendations for the EPA To Designate Areas as Unclassifiable

Several commenters recommended that the EPA take prompt action to designate areas with inadequate data for air quality characterization as unclassifiable. A number of commenters asserted that the EPA cannot use the rule to supersede the statutory schedule under which the EPA is required to make area designations, including statutorily-appropriate "unclassifiable" designations. One industry group commented that the CAA does not authorize the EPA to conduct designations according to the schedule anticipated by the proposed rule preamble, commenting that the EPA must instead complete designations in accordance with the schedule under CAA section 107(d)(1) (designating areas unclassifiable where appropriate), and then redesignating unclassifiable areas as either attainment or nonattainment later. Similarly, a state commenter expressed the view that further data are not necessary to meet the CAA. Several commenters also stated that the proposed rule effectively nullifies the "unclassifiable" designation, use of which would have allowed the EPA to meet its statutory deadline. One commenter also stated that the EPA should continue to use the "unclassifiable" designation where appropriate, and should not seek to designate all areas as attainment or nonattainment.

Several commenters also addressed the interrelationship between the proposed rule and the proposed consent decree for settling the lawsuit regarding the EPA's failure to promulgate designations for areas without monitored violations. One state commenter urged that the EPA codify the proposed consent decree into the rule. Another state commenter objected to this suggestion, stating that the proposed consent decree specifies a designations schedule that conflicts with the proposed schedule and compromises a commenter's ability to comment on the impact of that consent decree on the rule. An industrial commenter found the consent decree to undermine the proposed rule. These commenters urged that the EPA re-propose the relationship between the consent decree and the rule. An industry group stated that the issuance of the proposed consent decree undermines the rule because it would require an early round of designations that would be based on modeling, in contravention of the process under the proposed rule that offers the option of basing designations on monitoring data.

As stated previously, the EPA is not establishing or modifying any area designation requirements provided for in section 107 of the CAA through this rulemaking. The purpose of this rulemaking is to require states to characterize air quality in priority areas throughout the country where existing ambient monitors may not be adequately characterizing peak 1-hour SO₂ concentrations. The air quality data obtained as a result of this rulemaking then may be used in future designations or redesignations, as appropriate. While the notice of proposed rulemaking described the EPA's anticipated designations schedule, for purposes of explaining the timeline by which the EPA anticipates that the data the EPA was proposing to require will be used, the timeline for possible future use of these data does not dictate the schedule or the substantive features of the requirements for obtaining data for air quality characterization purposes, and the Agency believes it will be highly valuable to obtain these data even if that occurs after initial designations occur.

While the notice of proposed rulemaking described the EPA's expectations that designations for areas not already completed in August 2013 would be completed either in 2017 or in 2020, the timetables for obtaining additional data are as prompt as the EPA considers reasonable whether or not such data can be used to inform the remaining designations, and thus alternate approaches and timetables for designations would not result in a different timetable for implementation of the rule's requirements. In particular, whether designations proceed according to the approach described in the EPA's notice of proposed rulemaking, or whether areas are first designated unclassifiable and subsequently redesignated to attainment or nonattainment, the same timetable, and substance of requirements for data to support more properly informed future judgments regarding areas' attainment status is warranted. Because this rulemaking is not intended to define the designations process and did not propose regulatory deadlines for issuing designations, it would be inappropriate in this final rulemaking to codify any particular schedule for designations action.

The proposed consent decree referenced by the comments concerns separate legal proceedings that are addressing the EPA's obligations to designate areas under CAA section 107. The commenters have not identified why any potential outcome of those proceedings warrants any particular revision to the rule, nor have they

explained why the validity of the DRR is contingent on use of any particular designations approach. While the court's decision establishing timing requirements for the EPA's designations obligations will of course affect the EPA's approach to designations, including affecting the extent to which the EPA will be able to use the data required under the rule at various times in the designations or redesignations processes, these effects do not determine the validity of the data collection requirements of the rule. For these reasons, the EPA believes that the ability of commenters to address issues relevant to the rule was not compromised by the proposed consent decree and other actions or statements in the proceedings regarding the EPA's timetable for designations, and the EPA finds that re-proposal of the rule is not justified.

3. The Cost of Monitoring or Modeling Under this Rule

Several state and industry commenters stated that, because of funding limitations at the state level, any monitoring or modeling done to meet the requirements of the rule would likely need to be done by the affected sources. Commenters also stated that the rule will present yet another burden on the regulated community when facilities are already spending resources on emissions reductions projects that are required as the result of other EPA air quality rules.

Commenters also stated that even if sources voluntarily set up and operate their own monitors, state and local agencies will nevertheless still need to dedicate resources to administer the program, provide technical assistance, conduct performance audits, ensure data quality and submit the data to the EPA's AQS database each year. Commenters also stated that the initial state funding should be provided by the EPA through CAA section 103 or 105 grant funds in order to establish the monitoring sites required to meet the requirements of the rule.

The EPA recognizes that there will be costs and resources required to satisfy the requirements of this rulemaking. As suggested by both state and industry stakeholders who attended the EPA's May–June 2012 stakeholder meetings, in the absence of increased grant funding it may be necessary for air agencies to rebalance their existing grant funds for this purpose, or to consider alternative funding approaches such as working closely with affected sources to assist in funding either the modeling or monitoring required to meet the requirements of the rule. Early planning

may be helpful to address these funding needs.

Because the CAA assigns to states much of the responsibility for developing air quality characterization data, the EPA describes the requirements of this rule in a consistent manner: Air agencies are the entities with principal responsibility to establish and operate monitors, and conduct modeling, and to provide air quality data to the EPA. However, the EPA recognizes that other parties (such as facility owners) also may perform significant portions of the work that this rule requires. The EPA would consider monitoring or modeling conducted by a third party to be an appropriate means for air agencies to obtain the data necessary to meet the requirements of this rule, provided that the state provides oversight to assure that (1) any monitoring is conducted in a manner that is equivalent to SLAMs and quality-assured in accordance with applicable requirements, and (2) any modeling analysis that the state submits, even if it was initially provided to the state by a third party, is done in a reasonable manner and follows the recommendations in the Modeling TAD or as otherwise agree upon with the EPA Regional Office on a case-by-case basis.

4. How the DRR Addresses SO₂ Sources in Areas That Are Already Designated

The intent of this DRR is to direct state and tribal air agencies to characterize air quality in areas around the largest sources of SO₂ emissions, through the use of either air quality modeling or ambient monitoring, and to provide such data to the EPA. The additional information required by this rule will be able to inform future action by the EPA or the state (e.g., future designation decisions).

The proposed rule did not specifically address whether the requirement to characterize a sources' SO₂ emission impacts would apply differently based on whether areas containing sources were still undesignated, or whether they had already been designated as nonattainment, attainment, or unclassifiable. However, much of the discussion in the proposed rule preamble concerned how implementation of the rule might inform future area designations, thus implying that the air quality characterization requirement might apply only to areas that remained undesignated at the time of the rule's implementation. The EPA believes it is necessary to clarify how the rule applies to areas that have already been designated in some manner, either during the initial round of designations in August 2013 or in

subsequent rounds of designations pursuant to the March 2015 consent decree.

The first question is whether air agencies are required under this rule to characterize air quality near sources in areas that were designated as nonattainment in August 2013. *See* 78 FR 47191, August 5, 2013. In general, we expect nonattainment plans to provide adequate characterization of the impacts of sources within those nonattainment areas. Therefore, we have concluded that an air agency will not be required under this rule to characterize air quality around SO₂ sources located in a designated nonattainment area. Specifically, we have clarified the definition of “applicable source” in § 51.1200 of the final rule to be “a stationary source that is (1) not located in a designated nonattainment area, and (2) has annual actual SO₂ emissions of 2,000 tons or more, or has been identified by an air agency or by the EPA Regional Administrator as requiring further air quality characterization.” Thus, as a general matter, this rule does not require the state’s January 2016 list of sources triggering the requirements of this rule to include sources located within areas already designated as nonattainment.

However, it may be possible that in some cases an SO₂ source or group of sources within the boundary of an existing nonattainment area can have significant impacts outside the nonattainment area, potentially raising concerns that these impacts might not be adequately evaluated in a nonattainment plan. The EPA notes that for such cases, the air agency and the EPA Regional Administrator retain the authority under this rule to require additional characterization of air quality around specific sources located in an existing nonattainment area, in the same manner that they retain the authority, as warranted, to require characterization of air quality around sources that are below the emissions threshold identified in this rule.

Related questions also arise for sources in areas that will be subject to evaluation and designation by July 2016 under the March 2015 consent decree regarding SO₂ designations. Because all sources that meet the March 2015 consent decree criteria for designation by July 2016 will also exceed the 2,000 ton threshold under this DRR, these sources will need to be included on the January 2016 list of sources subject to requirements for air quality characterization under this rule. Subsequent designations do not alter this list. The list is a permanent list of prioritized sources that excludes

sources in areas designated as nonattainment before January 2016 and is not altered by designations promulgated after January 2016. In particular, the list of sources would not be altered by promulgation of nonattainment designations in July 2016. Nevertheless, the EPA expects that if the area around a “consent decree” source is designated as nonattainment by July 2016, pursuant to the consent decree, then the information that was adequate to inform this designation would also satisfy the air agency’s obligation under this rule to submit modeling information in January 2017 characterizing air quality around that source.

The next question is how this rule applies to sources in areas that have been designated as “unclassifiable” or as “unclassifiable/attainment.”¹² The EPA did not apply these designations to any areas in August 2013, but the EPA may apply these designations to some areas in the designations required to be completed by July 2016. This rule requires air quality characterization for areas previously designated as unclassifiable, just as it requires air quality characterization for undesignated areas. If the EPA has previously determined through a designation action that sufficient information has not yet been identified to support an attainment or nonattainment designation (*i.e.*, the area was initially designated as unclassifiable), then the additional information required by this rule will be used to inform possible future actions by the EPA or the state (*e.g.*, to determine whether the area is attaining or not attaining the standard, and change designation status).

With regard to “unclassifiable/attainment” areas, no areas were given this designation in the August 2013 designations. However, it is possible that some areas may be given this designation in the July 2016 designations based on relevant air quality characterization information (such as air quality modeling) that has been provided by the air agency or other

parties in the designations process. The applicable sources in any such areas designated pursuant to the March 2015 consent decree would have also been included in the list of sources that air agencies would be required to submit to the EPA in January 2016 according to this rule. If an area has already been designated by the EPA as “unclassifiable/attainment” by July 2016 pursuant to the consent decree, then the EPA expects that, as was the case for areas as designated nonattainment, the information that was adequate to inform an unclassifiable/attainment designation would also satisfy the air agency’s obligation under this rule to submit modeling information in January 2017 characterizing air quality around that source. As a result, under this rule, the air agency would not be required to provide additional air quality characterization information to the EPA by January 2017.

However, these already-designated “unclassifiable/attainment” areas would nevertheless be subject to the ongoing data requirements included in § 51.1205 of this rule. While modeling for purposes of informing designations promulgated by July 2016 would also be considered modeling to address the requirements of this rule, the EPA is promulgating revised rule language that clarifies that the ongoing data requirements apply to areas modeled based on actual emissions whether that modeling was conducted for purposes of informing designations by July 2016 or conducted only for satisfying the requirements of this rule. Accordingly, § 51.1205(b) has been modified to apply to any attainment area designated based on modeling of actual emissions to characterize air quality.

5. How Air Agencies Should Address Modeling and Monitoring in Multi-State Areas To Meet the Requirements of the Rule

As with the previous issue, a review of the comments and questions received from states has made the EPA aware of the need to clarify how the rule applies to situations where an applicable source that is located in one state or tribal jurisdiction has an impact on SO₂ concentrations in one or more other jurisdictions. While the final rule preserves the option of the air agency of the jurisdiction in which the source is located to choose how to satisfy the air quality characterization requirements of the rule (*i.e.*, through either monitoring or modeling), the EPA urges all air agencies involved to consult and coordinate in order to make appropriate decisions concerning whether modeling

¹² While states have and may continue to submit designations recommendations identifying areas as “attainment,” the EPA expects to continue its traditional approach, where appropriate, of using a designation category of “unclassifiable/attainment” for areas that the EPA determines meet the NAAQS. The EPA expects to reserve the category “unclassifiable” for areas where the EPA cannot determine based on available information whether the area is meeting or not meeting the NAAQS or where the EPA cannot determine whether the area contributes to a violation in a nearby area. *See* SO₂ designations guidance issued by Stephen D. Page on March 20, 2015, available at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/20150320SO2designations.pdf>.

or monitoring would be the most effective method to characterize the peak 1-hour SO₂ concentrations in the ambient air affected by such sources.

If the jurisdiction in which the source is located prefers to employ ambient monitoring to characterize air quality, the EPA believes it would be appropriate to use ambient monitoring only if: (1) The air agency coordinates with the other jurisdiction in identifying appropriate ambient monitoring sites; and (2) there is an agreement established with the other jurisdiction (in which peak 1-hour SO₂ impacts are being experienced), and possibly with the facility owner, regarding logistical, financial and operational responsibilities associated with the purchase, installation and operation of the monitor or monitors that is acceptable to all parties. However, if one or both jurisdictions do not wish to employ ambient monitoring, and a monitoring agreement cannot be reached, the EPA believes that the obligation to characterize air quality rests with the jurisdiction in which the source is located. Without an adequate multi-jurisdiction monitoring plan, the air agency would need to use modeling analyses to characterize air quality in the multi-jurisdiction area. Consultation among all involved jurisdictions will be important for planning and conducting technically appropriate modeling. The EPA expects that early and active coordination among all involved parties can lead to beneficial agreements for characterizing air quality in multi-jurisdiction areas, and the EPA will work with air agencies to help facilitate such agreements.

V. Environmental Justice Considerations

The EPA believes the human health or environmental risk addressed by this action will not have disproportionately high and adverse human health or environmental effects on minority, low-income, or indigenous populations because it does not affect the level of protection provided to human health or the environment under the SO₂ NAAQS. When promulgated, these regulations will require that air agencies characterize air quality around certain large emissions sources, or secure emission limits on sources to reduce annual emissions below 2,000 tpy. It is intended that the actions resulting from this rule would lead to greater protection for U.S. citizens, including minority, low-income, or indigenous populations, by reducing exposure to high ambient concentrations of SO₂. In addition, this rule will help communities by informing residents

about ambient air quality around the largest sources of SO₂.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not an economically significant action, but raises novel policy issues and was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2495.01. A copy of the ICR is available in the docket for this rule, and is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

The EPA is requiring air agencies to more extensively characterize ambient SO₂ air quality concentrations, pursuant to sections 110(a)(2)(B), 110(a)(2)(K), 301(a) and 114 of the CAA. For purposes of analysis of the estimated paperwork burden, the EPA assumed that 43 states and tribes would take actions to characterize air quality through either air quality modeling or ambient monitoring in 412 areas around SO₂ sources emitting 2,000 tpy or more across the country, and such states would submit the results of these analyses to the EPA. Under this rule, the air agency will have the ability to choose, on an area-by-area basis, the analytical approach to follow for characterizing air quality around each qualifying source. For this reason, there is no way of determining exactly how many areas may be characterized through ambient monitoring versus air quality modeling approaches. Therefore, this section presents two sets of estimated costs, one that assumes all source areas would be characterized through ambient monitoring, and the other that assumes that all source areas would be characterized through air quality modeling.

Potential ambient air monitoring costs are estimated based on the assumption that air quality for each of the 412 SO₂ sources exceeding the 2,000 tpy threshold would be characterized through a single newly deployed air monitor. (Note, however, that the

Monitoring TAD discusses situations where more than one monitor may be appropriate or necessary to properly characterize peak 1-hour SO₂ concentrations in certain areas, which would increase costs proportionally.) Estimates are provided for a 3-year period and include a calculation for equipment amortization over 7 years (as is typically done in monitoring-related ICRs). For the period of 2016, 2017, and 2018 (monitoring related expenditures would begin in 2016), the total approximate average annual monitoring cost, including a calculation for equipment amortization, is \$8,662,110 (total capital, and labor and non-labor operation and maintenance) with a total burden of 102,869 hours. The annual labor costs associated with these hours is \$7,080,572. Included in the \$8,662,110 total are other annual costs of non-labor operations and maintenance of \$706,827 and equipment and contract costs of \$874,711. For reference purposes, an estimate for initial establishment of a new SO₂ monitoring station is \$92,614 (does not include equipment amortization). In addition to the costs that would be incurred by the state and local air agencies, there would be an estimated burden to the EPA related to salary cost and equipment cost, etc., of a total of 52,717 hours and \$776,005.

Potential air quality modeling costs are estimated based on the assumption that air quality for each of the 412 SO₂ sources exceeding the 2,000 tpy threshold would be characterized through air quality modeling analyses. Based on market research, stakeholder feedback and assumptions about the procedures to follow when conducting modeling for designations purposes,¹³ an estimate of modeling costs for a single modeling run centered on an identified source would be approximately \$30,000. If air agencies choose to characterize air quality through modeling analyses around all 412 sources expected to be identified as exceeding the source threshold, then total national costs for modeling analyses would be estimated at \$12,360,000. If these costs were incurred over the course of 3 years, then the approximate annual cost for each year over that period would be \$4,120,000.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB

¹³ The Draft SO₂ NAAQS Designations Modeling Technical Assistance Document can be found at: <http://www.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf>.

control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the agency will announce that approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if a rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This final rule will not impose any requirements directly on small entities. Entities potentially affected directly by this final rule include state, local and tribal governments and none of these governments are small entities. Other types of small entities are also not directly subject to the requirements of this rule.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531, and does not significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. The requirement to characterize air quality to inform the area designation process for the revised NAAQS is imposed by the CAA. This rule is intended to interpret those requirements as they apply to the 2010 1 hour SO₂ NAAQS.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175. It would not have a substantial direct effect on one or more Indian tribes. Furthermore, this regulation does not affect the

relationship or distribution of power and responsibilities between the federal government and Indian tribes. The CAA and the Tribal Air Rule establish the relationship of the federal government and tribes in characterizing air quality and developing plans to attain the NAAQS, and this regulation does nothing to modify that relationship. Thus, Executive Order 13175 does not apply to this action.

Consistent with the EPA Policy on Consultation and Coordination with Indian tribes, the EPA held several meetings with tribal environmental professionals to discuss issues associated with this rule, including discussions at the National Tribal Forum on May 1, 2013, and on National Tribal Air Association policy calls. These meetings discussed the SO₂ implementation White Paper. The EPA provided an opportunity for tribes and stakeholders to provide written comments on the concepts discussed in the White Paper. Summaries of these meetings are included in the docket for this rule. The EPA also provided information on the proposed rule and conducted consultation with the National Tribal Air Association in the form of a briefing on April 24, 2014, and a webinar on May 21, 2014.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not directly involve an environmental health risk or safety risk.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. The EPA is finalizing this SO₂ DRR to require air agencies to more extensively characterize ambient SO₂ air quality concentrations, pursuant to sections 110(a)(2)(B), 110(a)(2)(K), 301(a) and 114 of the CAA. The rule does not prescribe specific control strategies by which the SO₂ NAAQS will be met. Such strategies will be developed by states on a case-by-case basis only if the information generated by this rule

results in an area being designated nonattainment, thereby triggering the need for the state to develop an attainment plan for the area. The EPA cannot predict whether the attainment plan prepared by the state will include regulations on energy suppliers, distributors, or users. Thus, the EPA concludes that this rule is not likely to have any adverse energy effects.

I. National Technology Transfer and Advancement Act

This action does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on any population, including any minority, low-income or indigenous populations, because it does not affect the level of protection provided to human health or the environment. That level of protection is established by the NAAQS itself. The results of the evaluation of environmental justice considerations is contained in section V of this preamble titled, "Environmental Justice Considerations."

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

L. Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this final action must be filed in the United States Court of Appeals for the District of Columbia Circuit by October 20, 2015. Filing a petition for reconsideration by the Administrator of this final action does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review must be filed, and shall not postpone the effectiveness of this action.

Statutory Authority

The statutory authority for this action is provided by 42 U.S.C. 7401 *et seq.*, and particularly sections 7403, 7407, 7410, 7414 and 7601.

List of Subjects in 40 CFR Part 51

Environmental protection, Air pollution control, Intergovernmental relations, Sulfur oxides.

Dated: August 10, 2015.

Gina McCarthy,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 51 of the Code of Federal Regulations is amended as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

- 1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401–7671q.

- 2. Subpart BB is added to read as follows:

Subpart BB—Data Requirements for Characterizing Air Quality for the Primary SO₂ NAAQS

Sec.

- 51.1200 Definitions.
51.1201 Purpose.
51.1202 Applicability.
51.1203 Air agency requirements.
51.1204 Enforceable emission limits providing for attainment.
51.1205 Ongoing data requirements.

Subpart BB—Data Requirements for Characterizing Air Quality for the Primary SO₂ NAAQS

§ 51.1200 Definitions.

The following definitions apply for the purposes of this subpart. All terms not defined herein will have the meaning given them in § 51.100 or in the Clean Air Act (CAA). *Air agency* means the agency or organization responsible for air quality management within a state, local governmental jurisdiction, territory or area subject to tribal government. *Annual SO₂ emissions data* means the quality-assured annual SO₂ emissions data for a stationary source. Such data may have been required to be reported to the EPA in accordance with an existing regulatory requirement (such as the Air Emissions Reporting Rule or the Acid Rain Program); however, annual SO₂ emissions data may be obtained or determined through other reliable means as well.

Applicable source means a stationary source that is:

- (1) Not located in a designated nonattainment area, and
- (2) Has actual annual SO₂ emissions data of 2,000 tons or more, or has been identified by an air agency or by the

EPA Regional Administrator as requiring further air quality characterization. *2010 SO₂ NAAQS* means the primary National Ambient Air Quality Standard for sulfur oxides (sulfur dioxide) as codified at 40 CFR 50.17, as effective August 23, 2010.

§ 51.1201 Purpose.

The purpose of this subpart is to require air agencies to develop and submit air quality data characterizing maximum 1-hour ambient concentrations of SO₂ across the United States through either ambient air quality monitoring or air quality modeling analysis at the air agency's election. These monitoring and modeling data may be used in future determinations by the EPA regarding areas' SO₂ NAAQS attainment status, or for other actions designed to ensure attainment of the 2010 SO₂ NAAQS and provide protection to the public from the short-term health effects associated with exposure to SO₂ concentrations that exceed the NAAQS.

§ 51.1202 Applicability.

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; or in whose jurisdiction is located one or more sources of SO₂ emissions that have been identified by the air agency or by the EPA Regional Administrator as requiring further air quality characterization. For the purposes of this subpart, the subject air agency shall identify applicable sources of SO₂ based on the most recently available annual SO₂ emissions data for such sources.

§ 51.1203 Air agency requirements.

(a) The air agency shall submit a list of applicable SO₂ sources identified pursuant to § 51.1202 located in its jurisdiction to the EPA by January 15, 2016. This list may be revised by the Regional Administrator after review based on available SO₂ emissions data.

(b) For each source area subject to requirements for air quality characterization, the air agency shall notify the EPA by July 1, 2016, whether it has chosen to characterize peak 1-hour SO₂ concentrations in such area through ambient air quality monitoring; characterize peak 1-hour SO₂ concentrations in such area through air quality modeling techniques; or provide federally enforceable emission limitations by January 13, 2017 that limit emissions of applicable sources to less than 2,000 tpy, in accordance with paragraph (e) of this section, or provide documentation that the applicable

source has permanently shut down. Emission limits in accordance with paragraph (e) of this section may be established in lieu of conducting monitoring or modeling unless, in the judgment of the air agency or the EPA Regional Administrator, the area warrants further air quality characterization even with the establishment of any new emission limit(s). If the air agency has chosen to establish requirements to limit emissions for applicable sources in an area, the notification from the air agency shall describe the requirements and emission limits the air agency intends to apply. For any area with multiple applicable sources, the air agency (or air agencies if a multi-state area) shall use the same technique (monitoring, modeling, or emissions limitation) for all applicable sources in the area. If multiple air agencies have applicable sources in an area, the air agencies must consult with each other to employ a common technique for the area.

(c) *Monitoring.* For each area identified in the notification submitted pursuant to paragraph (b) of this section as an area for which SO₂ concentrations will be characterized through ambient monitoring, the required monitors shall be sited and operated either as SLAMS or in a manner equivalent to SLAMS. In either case, monitors shall meet applicable criteria in 40 CFR part 58, appendices A, C, and E and their data shall be subject to data certification and reporting requirements as prescribed in 40 CFR 58.15 and 58.16. These requirements include quarterly reporting of monitoring data to the Air Quality System, and the annual certification of data by May 1 of the following year.

(1) The air agency shall include relevant information about monitors used to meet the requirements of this paragraph (c) in the air agency's Annual Monitoring Network Plan required by 40 CFR 58.10 due July 1, 2016. The air agency shall consult with the appropriate EPA Regional Office in the development of plans to install, supplement, or maintain an appropriate ambient SO₂ monitoring network pursuant to the requirements of 40 CFR part 58 and of this subpart.

(2) All existing, *new*, or relocated ambient monitors intended to meet the requirements of this paragraph (c) must be operational by January 1, 2017 and must be operated continually until approved for shut down by EPA.

(3) Any SO₂ monitor identified by an air agency in its approved Annual Monitoring Network Plan as having the purpose of meeting the requirements of this paragraph (c) that: Is not located in

an area designated as nonattainment as the 2010 SO₂ NAAQS is not also being used to satisfy other ambient SO₂ minimum monitoring requirements listed in 40 CFR part 58, appendix D, section 4.4; and is not otherwise required as part of a SIP, permit, attainment plan or maintenance plan, may be eligible for shut down upon EPA approval if it produces a design value no greater than 50 percent of the 2010 SO₂ NAAQS from data collected in either its first or second 3-year period of operation. The air agency must receive EPA Regional Administrator approval of a request to cease operation of the monitor as part of the EPA's action on the Annual Monitoring Network Plan under 40 CFR 58.10 prior to shutting down any qualifying monitor under this paragraph (c).

(d) *Modeling.* For each area identified in the notification submitted pursuant to paragraph (b) of this section as an area for which SO₂ concentrations will be characterized through air quality modeling, the air agency shall submit by July 1, 2016, a technical protocol for conducting such modeling to the Regional Administrator for review. The air agency shall consult with the appropriate EPA Regional Office in developing these modeling protocols.

(1) The modeling protocol shall include information about the modeling approach to be followed, including but not limited to the model to be used, modeling domain, receptor grid, emissions dataset, meteorological dataset and how the air agency will account for background SO₂ concentrations.

(2) Modeling analyses shall characterize air quality based on either actual SO₂ emissions from the most recent 3 years, or on any federally enforceable allowable emission limit or limits established by the air agency or the EPA and that are effective and require compliance by January 13, 2017.

(3) Except as provided by § 51.1204, the air agency shall conduct the modeling analysis for any applicable source identified by the air agency pursuant to paragraph (a) of this section, and for its associated area and any nearby area, as applicable, and submit the modeling analysis to the EPA Regional Office by January 13, 2017.

(e) *Federally enforceable requirement to limit SO₂ emissions to under 2,000 tons per year.* For each area identified

in the notification submitted pursuant to paragraph (b) of this section as an area for which the air agency will adopt federally enforceable requirements in lieu of characterizing air quality through monitoring or modeling, the air agency shall submit documentation to the EPA by January 13, 2017, showing that such requirements have been adopted, are in effect, and been made federally enforceable by January 13, 2017, through an appropriate legal mechanism, and the provisions either:

(1) Require the applicable sources in the area to emit less than 2,000 tons of SO₂ per year for calendar year 2017 and thereafter; or

(2) Document that the applicable sources in the area have permanently shut down by January 13, 2017.

§ 51.1204 Enforceable emission limits providing for attainment.

At any time prior to January 13, 2017, the air agency may submit to the EPA federally enforceable SO₂ emissions limits (effective no later than January 13, 2017) for one or more applicable sources that provide for attainment of the 2010 SO₂ NAAQS in the area affected by such emissions. The submittal shall include associated air quality modeling and other analyses that demonstrate that all modeling receptors in the area will not violate the 2010 SO₂ NAAQS, taking into account the updated allowable emission limits on applicable sources as well as emissions limits that may apply to any other sources in the area. The air agency shall not be subject to the ongoing data requirements of § 51.1205 for such area if the air quality modeling and other analyses demonstrate that the area will not violate the 2010 SO₂ NAAQS.

§ 51.1205 Ongoing data requirements.

(a) *Monitored areas.* For any area where SO₂ monitoring was conducted to characterize air quality pursuant to § 51.1203, the air agency shall continue to operate the monitor(s) used to meet those requirements and shall continue to report ambient data pursuant to existing ambient monitoring regulations, unless the monitor(s) have been approved for shut down by the EPA Regional Administrator pursuant to § 51.1203(c)(3) or pursuant to 40 CFR 58.14.

(b) *Modeled areas.* For any area where modeling of actual SO₂ emissions serve as the basis for designating such area as

attainment for the 2010 SO₂ NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR 58.10), that documents the annual SO₂ emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year. The first report for each such area is due by July 1 of the calendar year after the effective date of the area's initial designation.

(1) The air agency shall include in such report a recommendation regarding whether additional modeling is needed to characterize air quality in any area to determine whether the area meets or does not meet the 2010 SO₂ NAAQS. The EPA Regional Administrator will consider the emissions report and air agency recommendation, and may require that the air agency conduct updated air quality modeling for the area and submit it to the EPA within 12 months.

(2) An air agency will no longer be subject to the requirements of this paragraph (b) for a particular area if it provides air quality modeling demonstrating that air quality values at all receptors in the analysis are no greater than 50 percent of the 1-hour SO₂ NAAQS, and such demonstration is approved by the EPA Regional Administrator.

(c) Any air agency that demonstrates that an area would meet the 2010 SO₂ NAAQS with allowable emissions is not required pursuant to paragraph (b) of this section to submit future annual reports for the area.

(d) If modeling or monitoring information required to be submitted by the air agency to the EPA pursuant to this subpart indicates that an area is not attaining the 2010 SO₂ NAAQS, the EPA may take appropriate action, including but not limited to requiring adoption of enforceable emission limits to ensure continued attainment of the 2010 SO₂ NAAQS, designation or redesignation of the area to nonattainment, or issuance of a SIP Call.

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