6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R05-OAR-2018-0841; FRL-10489-01-R5]

Air Plan Approval; Illinois; Alton Township 2010 SO_2 Attainment Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve the State Implementation Plan (SIP) revision which Illinois submitted to EPA on December 31, 2018, for attaining the 2010 sulfur dioxide (SO_2) primary national ambient air quality standard (NAAQS) for the Alton Township nonattainment area in Madison County. This plan (herein called a "nonattainment plan") includes Illinois' attainment demonstration and other elements required under the Clean Air Act (CAA), including the requirement for meeting reasonable further progress (RFP) toward attainment of the NAAQS, reasonably available control measures and reasonably available control technology (RACM/RACT), base-year and projection-year emission inventories, enforceable emission limitations and control measures, nonattainment new source review (NNSR), and contingency measures. EPA is proposing to approve Illinois' submission as a SIP revision for attaining the 2010 primary SO_2 NAAQS in the Alton township nonattainment area, finding that Illinois has adequately demonstrated that the plan provisions

provide for attainment of NAAQS in the nonattainment area and that the plan meets the other applicable requirements under the CAA.

DATES: Comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R05-OAR-2018-0841 at *https://www.regulations.gov*, or via email to *arra.sarah@epa.gov*. For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. For either manner of submission, EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www2.epa.gov/dockets/commenting-epa-*

dockets.

FOR FURTHER INFORMATION CONTACT: Andrew Lee, Physical Scientist, Attainment Planning and Maintenance Section, Air Programs Branch (AR-18J), Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, (312) 353-7645, *lee.andrew.c@epa.gov*. The EPA Region 5 office is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays and facility closures due to COVID 19.

SUPPLEMENTARY INFORMATION: Throughout this document whenever "we," "us," or "our" is used, we mean EPA.

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I. Why Was Illinois Required to Submit an SO_2 Plan for the Alton Township Area?

On June 22, 2010, EPA published a new 1-hour primary SO_2 NAAQS of 75 parts per billion (ppb), which is met at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations does not exceed 75 ppb, as determined in accordance with appendix T of 40 CFR part 50. *See* 75 FR 35520, codified at 40 CFR 50.17(a)-(b). EPA has promulgated designations for this standard in four rounds. Alton Township, Illinois was designated nonattainment by EPA on June 30, 2016, as part of the Agency's Round 2 designations.

In the Round 2 designations, EPA designated areas including power plants exceeding certain emissions criteria, specifically including the Wood River power plant located in Wood River, Illinois. The modeling that Illinois submitted in support of its Round 2 designations recommendations included both the Wood River power plant and an additional source, the Alton Steel, Inc. steel mill in Alton, Illinois (Alton Steel). Alton Steel was included in the modeling analysis because its SO_2 emissions

showed the potential for creating significant SO_2 concentration gradients within the modeling domain. The modeling was done using the AERMOD air dispersion modeling software utilizing data based on actual emissions from the Wood River Power Station and Alton Steel.

The state found that the highest modeled NAAQS violations in the area were almost entirely due to Alton Steel emissions and especially occurred along or near Alton Steel's north fence line. The Alton Steel facility consists of a melt shop and a rolling mill in which steel scrap is melted (electric arc furnace), refined/alloyed (ladle metallurgical furnace), and then cast/formed into blooms and slabs. Illinois provided suitable evidence that Wood River should be judged not to contribute to the modeled violation as the facility was shut down in 2016. As such, Illinois recommended the designation of nonattainment for Alton Township to focus on the NAAQS violations caused by Alton Steel.

The state's modeling in support of its designation recommendation indicated that the predicted 99th percentile 1-hour average concentration within the chosen modeling domain was 456.40 micrograms per cubic meter ($\mu g/m^3$), or 174.2 ppb. This modeled concentration included the background concentration of SO_2 and was based on actual emissions from the facilities in the area. Illinois performed a culpability analysis which demonstrated that only a small group of receptors violated the 2010 SO_2 NAAQS, and these receptors were primarily affected by

emissions from Alton Steel, which were greatly influenced by downwash. High concentrations near Alton Steel were a consequence of building downwash combined with downward pointing vents, and primarily occurred when winds were blowing from the southwest, a direction that maximized the impact of the Alton Steel building in causing downwash and downwash-influenced concentrations in nearby ambient air locations.

On September 18, 2015, Illinois submitted its recommendations for EPA to designate certain areas of the state as part of the Round 2 designations. In its submission, Illinois recommended that a portion of Madison County be designated as nonattainment for the 2010 SO_2 NAAQS – specifically, a portion of southern Alton Township. EPA, agreeing with Illinois' analysis of the area, concurred with the state's proposed finding of nonattainment for Alton Township. EPA published a final action designating the area as nonattainment on July 12, 2016 (81 FR 45039), which became effective September 12, 2016. In response to EPA's designation of the Alton Township area, Illinois submitted an attainment plan on December 13, 2018, to EPA for approval. Under CAA section 192(a), these plans are required to demonstrate that their respective areas will attain the NAAQS as expeditiously as practicable, but no later than five years from the effective date of designation, which was September 12, 2021.

Unlike in the Round 2 designations modeling, the Alton Township attainment demonstration does not include the Wood

River Power Station among the sources modeled. Wood River was excluded from the nonattainment area because in November 2015, the facility owner (Dynegy, Inc.) publicly announced that the power plant would be closing, pending approval of the electrical transmission system operator (Midcontinent Independent System Operator). The facility was retired in June 2016 and ceased emitting SO_2 at that point, and was demolished in February 2021.

II. Requirements for SO_2 Nonattainment Area Plans

Nonattainment area SO_2 SIPs must meet the applicable requirements of the CAA, and specifically CAA sections 110, 172, 191 and 192. EPA's regulations governing nonattainment area SIPs are set forth at 40 CFR part 51, with specific procedural requirements and control strategy requirements residing at subparts F and G, respectively. Soon after Congress enacted the 1990 amendments to the CAA, EPA issued comprehensive guidance on SIPs in a document entitled the "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," published at 57 FR 13498 (April 16, 1992) (General Preamble). Among other things, the General Preamble addressed SO_2 SIPs and fundamental principles for SIP control strategies. *Id.* at 13545-49, 13567-68. On April 23, 2014, EPA issued guidance and recommendations for meeting the statutory requirements in SO_2 SIPs addressing the 2010 primary NAAQS, in a document entitled, "Guidance for 1-Hour SO_2 Nonattainment Area SIP Submissions" (April 2014 guidance), available at *https://www.epa.gov/sites/production/files/2016-*

06/documents/20140423guidance_nonattainment_sip.pdf. In the April 2014 guidance, EPA described the statutory requirements for a complete nonattainment area SIP, which includes an accurate emissions inventory of current emissions for all sources of SO_2 within the nonattainment area; an attainment demonstration; enforceable emissions limitations and control measures; demonstration of RFP; implementation of RACM (including RACT); NNSR; and adequate contingency measures for the affected area.

In order for EPA to fully approve a SIP as meeting the requirements of CAA sections 110, 172 and 191-192 and EPA's regulations at 40 CFR part 51, the SIP for the affected area needs to demonstrate to EPA's satisfaction that each of the aforementioned requirements have been met. Under CAA sections 110(l) and 193, EPA may not approve a SIP that would interfere with any applicable requirement concerning NAAQS attainment and RFP, or any other applicable requirement, and no requirement in effect (or required to be adopted by an order, settlement, agreement, or plan in effect before November 15, 1990), in any area which is a nonattainment area for any air pollutant, may be modified in any manner unless it ensures equivalent or greater emission reductions of such air pollutant.

III. Attainment Demonstration and Longer-Term Averaging

CAA section 172(c)(1) directs states with areas designated as nonattainment to demonstrate that the submitted plan provides for attainment of the NAAQS. 40 CFR part 51, subpart G further

delineates the control strategy requirements that SIPs must meet, and EPA has long required that all SIPs and control strategies reflect the four fundamental principles of quantification, enforceability, replicability, and accountability. *See* General Preamble, at 13567-68. SO_2 attainment plans must consist of two components: (1) emission limits and other control measures that assure implementation of permanent, enforceable and necessary emission controls, and (2) a modeling analysis which meets the requirements of 40 CFR part 51, appendix W which demonstrates that these emission limits and control measures provide for timely attainment of the primary SO_2 NAAQS as expeditiously as practicable, but by no later than the attainment date for the affected area. In all cases, the emission limits and control measures must be accompanied by appropriate methods and conditions to determine compliance with the respective emission limits and control measures, and must be quantifiable (i.e., a specific amount of emission reduction can be ascribed to the measures), fully enforceable (specifying clear, unambiguous and measurable requirements for which compliance can be practicably determined), replicable (the procedures for determining compliance are sufficiently specific and non-subjective so that two independent entities applying the procedures would obtain the same result), and accountable (source specific limits must be permanent and must reflect the assumptions used in the SIP demonstrations).

EPA's April 2014 guidance recommends that the emission

limits be expressed as short-term average limits (e.g., addressing emissions averaged over one or three hours), but also allows for emission limits with longer averaging times of up to 30 days so long as the state meets various suggested criteria. *See* April 2014 guidance, pp. 22 to 39. The guidance recommends that, should states and sources utilize a longer-term average limit, the limit should be set at an adjusted level that reflects a stringency comparable to the 1-hour critical emission value shown to provide for attainment that the plan otherwise could have set as a 1-hour emission limit.

Illinois' plan applies 1-hour average emission limits to Alton Steel. However, Illinois' plan also considers the impact of an additional facility that is about 12 kilometers from Alton Steel, namely Ameren's Portage des Sioux Power Center ("Sioux" or "Ameren-Sioux") in St. Charles County, Missouri, a facility that is subject to a 24-hour block average limit. Therefore, EPA is providing the following discussion of its rationale for approving the use of longer-term average limits in plans designed to provide for attainment.

The April 2014 guidance provides an extensive discussion of EPA's view that appropriately set comparably stringent limits based on averaging times as long as 30 days can be found to provide for attainment of the 2010 SO_2 NAAQS. In evaluating this option, EPA considered the nature of the standard, conducted detailed analyses of the impact of the use of 30-day average limits on the prospects for attaining the standard, and

carefully reviewed how best to achieve an appropriate balance among the various factors that warrant consideration in judging whether a state's plan provides for attainment. *See id.*; *see also id.* at appendices B, C and D.

As specified in 40 CFR 50.17(b), the 1-hour primary SO_2 NAAQS is met at an ambient air quality monitoring site when the 3-year average of the annual 99^{th} percentile of daily maximum 1-hour average concentrations is less than or equal to 75 ppb. In a year with 365 days of valid monitoring data, the 99^{th} percentile would be the fourth highest daily maximum 1-hour value. The 2010 SO_2 NAAQS, including this form of determining compliance with the standard, was upheld by the U.S. Court of Appeals for the District of Columbia Circuit in *Nat'l Envt'l Dev. Ass'n's Clean Air Project v. EPA*, 686 F.3d 803 (D.C. Cir. 2012). Because the standard has this form, a single exceedance of the level of the NAAQS does not create a violation of the standard. Instead, at issue is whether a source operating in compliance with a properly set limit reflecting a longer-term average could cause hourly exceedances of the NAAQS level, and if so the resulting frequency and magnitude of such hourly exceedances, and in particular whether EPA can have reasonable confidence that a properly set longer-term average limit will provide that the 3-year average of the annual fourth highest daily maximum hourly value will be at or below 75 ppb. The following is a synopsis of EPA's review of how to judge whether such plans "provide for attainment," based on modeling of

projected allowable emissions and in light of the NAAQS' form for determining attainment at monitoring sites.

For plans for SO_2 based on 1-hour emission limits, the standard approach is to conduct modeling using fixed emission rates. The maximum emission rate that would be modeled to result in attainment (i.e., in an "average year"[1] shows three, not four days with maximum hourly levels exceeding 75 ppb, over three consecutive years) is labeled the "critical emission value." The modeling process for identifying this critical emission value inherently considers the numerous variables that affect ambient concentrations of SO_2, such as meteorological data, background concentrations, and topography. In the standard approach, the state would then provide for attainment by setting a continuously applicable 1-hour emission limit at this critical emission value. This is the approach Illinois took for setting limits at Alton Steel.

EPA recognizes that some sources have highly variable emissions, for example due to variations in fuel sulfur content and operating rate, that can make it extremely difficult, even with a well-designed control strategy, to ensure in practice that emissions for any given hour do not exceed the critical emissions value. EPA also acknowledges the concern that longer-term emission limits can allow short periods with emissions

[1] An "average year" is used to mean a year with average air quality. While 40 CFR 50 appendix T provides for averaging three years of 99th percentile daily maximum values (e.g., the fourth highest maximum daily concentration in a year with 365 days with valid data), this discussion and an example below uses a single "average year" in order to simplify the illustration of relevant principles.

above the critical emissions value, which, if coincident with meteorological conditions conducive to high SO_2 concentrations, could in turn create the possibility of a NAAQS level exceedance occurring on a day when an exceedance would not have occurred if emissions were continuously controlled at the level corresponding to the critical emissions value. However, for several reasons, EPA believes that the approach recommended in its guidance document suitably addresses this concern. First, from a practical perspective, EPA expects the actual emission profile of a source subject to an appropriately set longer-term average limit to be like the emission profile of a source subject to an analogous 1-hour average limit. EPA expects this similarity because it has recommended that the longer-term average limit be set at a level that is comparably stringent to the otherwise applicable 1-hour limit (reflecting a downward adjustment from the critical emissions value) and that takes the source's emissions profile into account. As a result, EPA expects either form of emissions limit to yield comparable air quality.

Second, from a more theoretical perspective, EPA has compared the likely air quality with a source having maximum allowable emissions under an appropriately set longer-term limit, as compared to the likely air quality with the source having maximum allowable emissions under the comparable 1-hour limit. In this comparison, in the 1-hour average limit scenario, the source is presumed at all times to emit at the

critical emissions level, and in the longer-term average limit scenario, the source is presumed occasionally to emit more than the critical emissions value but on average, and presumably at most times, to emit well below the critical emissions value. In an "average year," compliance with the 1-hour limit is expected to result in three exceedance days (i.e., three days with an hourly value above 75 ppb) and a fourth day with a maximum hourly value at 75 ppb. By comparison, with the source complying with a longer-term limit, it is possible that additional exceedances would occur that would not occur in the 1-hour limit scenario (if emissions exceed the critical emissions value at times when meteorology is conducive to poor air quality). However, this comparison must also factor in the likelihood that exceedances that would be expected in the 1-hour limit scenario would not occur in the longer-term limit scenario. This result arises because the longer-term limit requires lower emissions most of the time (because the limit is set well below the critical emissions value), so a source complying with an appropriately set longer term limit is likely to have lower emissions at critical times than would be the case if the source were emitting as allowed with a 1-hour limit.

As a hypothetical example to illustrate these points, suppose a source that always emits 1000 pounds of SO_2 per hour, which results in air quality at the level of the NAAQS (i.e., results in a design value of 75 ppb). Suppose further that in an "average year," these emissions cause the 5 highest maximum

daily average 1-hour concentrations to be 100 ppb, 90 ppb, 80 ppb, 75 ppb, and 70 ppb. Then suppose that the source becomes subject to a 30-day average emission limit of 700 pounds per hour. It is theoretically possible for a source meeting this limit to have emissions that occasionally exceed 1000 pounds per hour, but with a typical emissions profile, emissions would much more commonly be between 600 and 800 pounds per hour. This simplified example assumes a zero-background concentration, which allows one to assume a linear relationship between emissions and air quality. (A nonzero background concentration would make the mathematics more difficult but would give similar results.) Air quality will depend on what emissions happen on what critical hours, but suppose that emissions at the relevant times on these 5 days are 800 pounds per hour, 1100 pounds per hour, 500 pounds per hour, 900 pounds per hour, and 1200 pounds per hour, respectively. (This is a conservative example because the average of these emissions, 900 pounds per hour, is well over the 30-day average emission limit.) These emissions would result in daily maximum 1-hour concentrations of 80 ppb, 99 ppb, 40 ppb, 67.5 ppb, and 84 ppb. In this example, the fifth day would have an exceedance that would not otherwise have occurred, but the third day would not have an exceedance that otherwise would have occurred, and the fourth day would have been below, rather than at, 75 ppb. In this example, the fourth highest maximum daily concentration under the 30-day average would be 67.5 ppb.

This simplified example encapsulates the findings of a more complicated statistical analysis that EPA conducted using a range of scenarios using actual plant data. As described in appendix B of EPA's April 2014 guidance, EPA found that the requirement for lower average emissions is highly likely to yield better air quality than is required with a comparably stringent 1-hour limit. Based on analyses described in appendix B of its 2014 guidance, EPA expects that an emissions profile with maximum allowable emissions under an appropriately set, comparably stringent 30-day average limit is likely to have the net effect of having a *lower* number of hourly exceedances of the NAAQS level and better air quality than an emission profile with maximum allowable emissions under a 1-hour emission limit at the critical emissions value.[2] This result provides a compelling policy rationale for allowing the use of a longer averaging period, in appropriate circumstances where the facts indicate this result can be expected to occur.

The question then becomes whether this approach—which is likely to produce a lower number of overall hourly NAAQS level exceedances even though it may produce some unexpected

[2] See also further analyses described in rulemaking on the SO_2 nonattainment plan for Southwest Indiana. In response to comments expressing concern that the emissions profiles analyzed for appendix B represented actual rather than allowable emissions, EPA conducted additional work formulating sample allowable emission profiles and analyzing the resulting air quality impact. These analyses provided further support for the conclusion that an appropriately set longer term average emission limit in appropriate circumstances can suitably provide for attainment. The rulemaking describing these further analyses was published on August 17, 2020, at 85 FR 49967, available at https://www.govinfo.gov/content/pkg/FR-2020-08-17/pdf/2020-16044.pdf. A more detailed description of these analyses is available in the docket for that action, specifically at *https://www.regulations.gov/document?D=EPA-R05-OAR-2015-0700-0023*.

exceedances above the critical emission value—meets the requirement in section 110(a)(1) and 172(c)(1) for state implementation plans to "provide for attainment" of the NAAQS. For SO_2, as for other pollutants, it is generally impossible to design a nonattainment plan in the present that will guarantee that attainment will occur in the future. A variety of factors can cause a well-designed attainment plan to fail and unexpectedly not result in attainment, for example if meteorology occurs that is more conducive to poor air quality than was anticipated in the plan. Therefore, in determining whether a plan meets the requirement to provide for attainment, EPA's task is commonly to judge not whether the plan provides absolute certainty that attainment will in fact occur, but rather whether the plan provides an adequate level of confidence of prospective NAAQS attainment. From this perspective, in evaluating use of a 30-day average limit, EPA must weigh the likely net effect on air quality. Such an evaluation must consider the risk that occasions with meteorology conducive to high concentrations will have elevated emissions leading to NAAQS level exceedances that would not otherwise have occurred and must also weigh the likelihood that the requirement for lower emissions on average will result in days not having hourly exceedances that would have been expected with emissions at the critical emissions value. Additional policy considerations, such as in this case the desirability of accommodating real world emissions variability without significant risk of NAAQS

violations, are also appropriate factors for EPA to weigh in judging whether a plan provides a reasonable degree of confidence that the plan will lead to attainment. Based on these considerations, especially given the high likelihood that a continuously enforceable limit averaged over as long as 30 days, determined in accordance with EPA's guidance, will result in attainment, EPA believes as a general matter that such limits, if appropriately determined, can reasonably be considered to provide for attainment of the 2010 SO_2 NAAQS.

The April 2014 guidance offers specific recommendations for determining an appropriate longer-term average limit. The recommended method starts with determination of the 1-hour emission limit that would provide for attainment (i.e., the critical emissions value), and applies an adjustment factor to determine the (lower) level of the longer-term average emission limit that would be estimated to have a stringency comparable to the otherwise necessary 1-hour emission limit. This method uses a database of continuous emission data reflecting the type of control that the source will be using to comply with the SIP emission limits, which (if compliance requires new controls) may require use of an emission database from another source. The recommended method involves using these data to compute a complete set of emission averages, computed according to the averaging time and averaging procedures of the prospective emissions limit. In this recommended method, the ratio of the 99^{th} percentile among these long-term averages to the 99^{th}

percentile of the 1-hour values represents an adjustment factor that may be multiplied by the candidate 1-hour emission limit to determine a longer-term average emission limit that may be considered comparably stringent.[3] The guidance also addresses a variety of related topics, such as the potential utility of setting supplemental emission limits, such as mass-based limits, to reduce the likelihood and/or magnitude of elevated emission levels that might occur under the longer-term emission rate limit.

Preferred air quality models for use in regulatory applications are described in appendix A of EPA's *Guideline on Air Quality Models* (40 CFR part 51, appendix W). In 2005, EPA promulgated AERMOD as the Agency's preferred near-field dispersion modeling for a wide range of regulatory applications addressing stationary sources (for example in estimating SO_2 concentrations) in all types of terrain based on extensive developmental and performance evaluation. Supplemental guidance on modeling for purposes of demonstrating attainment of the SO_2 standard is provided in appendix A to the April 2014 guidance document referenced above. Appendix A provides extensive guidance on the modeling domain, the source inputs, assorted types of meteorological data, and background concentrations. Consistency with the recommendations in this guidance is generally necessary for the attainment demonstration to offer

[3] For example, if the critical emission value is 1000 pounds of SO_2 per hour, and a suitable adjustment factor is determined to be 70 percent, the recommended longer term average limit would be 700 pounds per hour.

adequately reliable assurance that the plan provides for attainment.

As stated previously, attainment demonstrations for the 2010 1-hour primary SO_2 NAAQS must demonstrate future attainment and maintenance of the NAAQS in the entire area designated as nonattainment (*i.e.,* not just at the violating monitor) by using air quality dispersion modeling (*see* appendix W to 40 CFR part 51) to show that the mix of sources and enforceable control measures and emission rates in an identified area will not lead to a violation of the SO_2 NAAQS. For a short-term (*i.e.,* 1-hour) standard, EPA believes that dispersion modeling, using allowable emissions and addressing stationary sources in the affected area (and in some cases those sources located outside the nonattainment area which may affect attainment in the area) is technically appropriate, efficient, and effective in demonstrating attainment in nonattainment areas because it takes into consideration combinations of meteorological and emission source operating conditions that may contribute to peak ground-level concentrations of SO_2.

The meteorological data used in the analysis should generally be processed with the most recent version of AERMET. Estimated concentrations should include ambient background concentrations, should follow the form of the standard, and should be calculated as described in section 2.6.1.2 of the August 23, 2010, clarification memo on "Applicability of Appendix W Modeling Guidance for the 1-hr SO_2 National Ambient

Air Quality Standard" (U.S. EPA, 2010).

IV. Review of Modeled Attainment Plan

This section generally discusses EPA's evaluation of the modeled attainment demonstration for Illinois' plan. A more detailed discussion is also presented in a technical support document (TSD) contained in the public docket for this proposed approval of Illinois' SIP.

A. Model Selection and General Model Inputs

As part of its SIP development process, Illinois used EPA's regulatory dispersion model, AERMOD, to help determine the SO_2 emission limit revisions that would be needed to bring the Alton Township nonattainment area into attainment of the 2010 SO_2 NAAQS. For its 2018 Alton Township attainment plan, Illinois has relied upon AERMOD Version 18081 and the companion AERMOD User Guide documentation in developing this attainment demonstration. Regulatory default options were specified in developing the attainment demonstration that are consistent with established practices for use of AERMOD in determining NAAQS compliance for SIP revisions. Included among those default options are stack tip downwash, buoyancy induced dispersion, default wind profile coefficients, default vertical potential temperature gradients, and final plume rise. EPA finds these selections appropriate.

This attainment demonstration uses a modeling domain that reflects the geographic extent of emission sources included in the Round 2 modeling for the Wood River Power Plant. The most

significant sources addressed in the modeling for the area are the Alton Steel facility and the Ameren-Sioux power center in Missouri about 13 kilometers west-northwest of the nonattainment area. These two facilities are the principal causes of the modeled violations in the area. Illinois modeled several other, relatively minor sources within the area that did not contribute significantly to the violation. Illinois performed a culpability analysis to quantify the impacts of these various minor sources to determine their contribution to the modeled violations. At the highest concentrations the model estimated in the area, all other sources combined, aside from Ameren-Sioux and Alton Steel, contributed less than 2 $\mu g/m^3$ in total to the modeled violations. The way these sources are modeled are discussed in detail below.

The receptor network encompasses the nonattainment area and consists of discrete fence line receptors spaced at approximately 50-meter intervals and a gridded receptor array with 100-meter interval spacings. The receptor density is consistent with standard modeling guidance for adequately capturing and resolving SO_2 concentration maxima. See TSD pg. 3.

Selection of terrain data corresponds to the geographic area represented by the Alton Township nonattainment area, as well as the locations of facilities nearby that influence concentrations in the area. U.S. Geological Survey (USGS) National Elevation Dataset (NED) data were obtained in an appropriate format for use in AERMAP and used for generating the

necessary terrain inputs. Elevations from the NED data were determined for all sources and structures, and both elevations and representative hill heights were determined for receptors.

A detailed site characterization of the Alton Steel facility, Ameren-Sioux power center, and pertinent other sources provided dimensional and locational data for structures and stacks necessary for addressing building-induced plume downwash. Stacks constructed to less than good engineering practice (GEP) height and within the "zone of influence" of a nearby structure have plumes that are potentially subject to excessive downwash. Illinois used EPA's Building Profile Input Program with PRIME algorithm (BPIPPRM, version 04274) to generate direction-specific building parameters for modeling building wake effects. The location and height of each stack and flare to be evaluated, and the locations and heights of nearby structures, were processed in BPIPPRM to produce the building parameters required by AERMOD.

Most of the stacks modeled by Illinois are modeled at heights that BPIPPRM considers to be at or below GEP height. However, two sources in this analysis were modeled by Illinois with stacks above GEP height. The stack at the Ameren-Sioux facility is constructed above GEP height and was modeled by Illinois at actual height. Additionally, at WRB Refining, several stacks have been constructed with heights above GEP height and were modeled at the actual stack height and at full potential to emit. WRB Refining, despite being modeled above

GEP height, is not considered a significant contributor to the violations in the area. Illinois performed a culpability analysis and concluded that WRB has a very low contribution, less than 1 µg/m^3 in all modeled scenarios, to the modeled violations. As such, Illinois modeling that facility at GEP height would change little about the principal sources of SO_2 pollution in the area. Ameren-Sioux was modeled at above GEP height and was determined to be a significant contributor to the violations in the area. EPA has conducted supplemental modeling to correct any deficiencies in Illinois's modeling related to the characterization of emissions in the area. EPA used Illinois' receptor grid, meteorological surface and upper air stations, model settings, and some source parameters to develop the modeling demonstration. EPA is relying on our supplemental modeling to support the attainment plan and establish that the area is now modeling attainment. See TSD pg. 6. More discussion on this topic is included in the sections below.

B. Meteorological Data

Procedures for selecting and developing meteorological data have been provided in the draft document "Regional Meteorological Data Processing Protocol, EPA Region 5 and States."[4] This document describes selection criteria for surface meteorological data that address the representativeness of the meteorological data collection site to the emission source/receptor impact area. There are two specific criteria to

[4] Draft – *Regional Meteorological Data Processing Protocol. EPA Region 5 and States* (August 2014), available in the docket for this action.

be considered: 1) the suitability of meteorological data for the study area, and 2) the similarity of surface conditions and surroundings at the emission source/receptor impact area compared to characteristics at the location of the meteorological instrumentation tower.

In its 2018 submission, Illinois used the then-most recent five years (2012-2016) of surface meteorological data from St. Louis, Missouri (WBAN No. 13994, 28 kilometers to the southwest) and coincident upper air data from Lincoln, Illinois (WBAN No. 4833, 157 km to the northeast). These data were determined to be representative of the NAA's airshed. These data, in combination with surface characteristics data, were processed using AERSURFACE (version 13016) to prepare the meteorological data for simulating the area's planetary boundary layer turbulence structure. Illinois utilized AERMET (version 16216) to process the raw meteorological data. Illinois obtained Automated Surface Observing Systems (ASOS) one-minute wind speed and wind direction data for NWS surface stations and processed it using AERMINUTE (version 15272). EPA utilized the meteorological data processed by Illinois in its supplemental modeling. See TSD pg. 13.

The frequency and magnitude of wind speed and direction are defined in terms of where the wind is blowing from, parsed out in sixteen 22.5-degree wind sectors. The predominant wind direction during the five-year period is from the south, occurring approximately 9.8% of the time. The highest

percentage wind speed range, occurring 34.5% of the time, was in the 3.6 – 5.7 meters per second range.

C. Modeled Emissions Data

In its 2018 submittal, Illinois provided an analysis modeling other SO_2 sources in the area, including GBC Metals, Olin Corporation, National Maintenance & Repair, Alton Water Treatment Facility, Conoco-Phillips Hartford Plant, Alton Memorial Hospital, St. Anthony's Hospital, St. Claire's Hospital, the Charles E. Mahoney Plant, WRB Refinery, and most notably including the Alton Steel facility and the Ameren-Sioux facility. Data for detailed site characterization (stack locations, fence line locations, building dimensions, etc.) of these sources were gathered and/or generated to support development of specific AERMOD inputs. Illinois used EPA's Building Profile Input Program with PRIME algorithm (BPIPPRM, version 04274) to generate direction-specific building inputs for modeling building wake effects within AERMOD. Building-induced plume downwash was addressed for all stacks and flares. The flares, all of which are located at WRB Refining, were modeled with adjusted release parameters including fixed values for temperature, exit velocity, and modified values for release height and diameter. Illinois relied upon the AERSCREEN User's Guide[5] to calculate the effective height and diameter for modeling the flares. Following the submittal from Illinois, EPA performed a supplemental modeling run to evaluate changes in

[5] *AERSCREEN User's Guide*. EPA-454/B-16-004. December 2016. U.S. Environmental Protection Agency, Research Triangle Park, NC.

allowable emissions that occurred after Illinois submitted the attainment plan and to correct any deficiencies in the emissions data or source characterization that could potentially cause reduced concentrations. See TSD p. 2.

The most significant sources affecting the nonattainment area were Alton Steel and the Ameren-Sioux facility in Missouri. While the Ameren-Sioux facility is not in the nonattainment area, Illinois modeled this facility due to its proximity to the nonattainment area and its high SO_2 emissions, yielding an impact of up to 283.4 µg/m^3on the air quality in the area. Illinois modeled numerous minor point sources in the nonattainment area as well. Illinois did not explicitly model emissions from non-point sources, for example mobile emissions, incineration, agricultural field burning, etc., in AERMOD but instead represented the impact of these sources via monitored background data.

Illinois' SIP submittal describes an exploratory run that Illinois conducted in order to define the air quality problem in the area and to determine the most appropriate remedy. Notably, the baghouse at Alton Steel was originally configured to emit out of downward pointing vents, which Illinois modeled using the POINTHOR option in AERMOD to consider the horizontally pointing vents. Based on the results of these runs in which Alton Steel was the principal contributor to the highest modeled violations, Illinois chose to mandate construction of a single vertical unobstructed stack for this emission unit. Thus, Illinois'

attainment demonstration modeling represented this emission point (and all other emission points) as a vertical unobstructed stack release. Flares were modeled with adjusted release parameters, consistent with EPA's guidance for modeling flares presented in the AERSCREEN User's Guide[6]. The adjusted parameters include fixed values for temperature (1273 degrees Kelvin) and exit velocity (20 meters/second) and modified values for release height and diameter.

Ameren-Sioux operates two coal-fired boilers. Illinois modeled this source using information provided by the Missouri Department of Natural Resources. Illinois' modeling indicated that the limit on Ameren-Sioux in Missouri's SIP of 4.8 lbs/MMBtu did not ensure attainment inside the Alton nonattainment area. Illinois' modeling run evaluating the impact of maximum allowable emissions from Ameren-Sioux also reflecting the reconfigured ladle metallurgy facility (LMF) stack for Alton Steel yielded a maximum predicted 99th percentile 1-hour average concentration of 298.5 $\mu g/m^3$, and Illinois concluded that scaling this result down to reflect a temporally representative operating rate (either a 60^{th} or a 70^{th} percentile rate) for Ameren-Sioux would also show violations.

EPA conducted a supplemental modeling run to correct deficiencies in the characterization of emissions in Illinois's modeling. EPA evaluated the estimated concentrations based on application of a new limit of 7,342 lbs/hour averaged over a 24-

[6] See supra n.5

hour block period on the Ameren-Sioux facility published on November 16, 2022 (87 FR 68634). The adopted new limit is substantially lower than the previous SIP limit of 4.8 lbs/MMBtu. Each of the facility's two boilers are rated to have a maximum heat input capacity of 4,920 MMBtu/hr and when applied to the former rate limit, add up to an effective rate of 47,232 lbs/hour on a facility-wide basis. The newly adopted limit marks a significantly reduced emission rate for the facility. EPA's supplemental modeling was based on the modeling runs submitted by Illinois, which modeled maximum uncontrolled emissions limits for all sources at the time but did not consider the revised limit at Ameren-Sioux. EPA's supplemental model run revised the modeled emissions for Ameren-Sioux to reflect the new 24-hour block limit and modeled the facility at GEP height.

The revised limit on Ameren-Sioux is on a 24-hour block average basis. Much of EPA's 2014 guidance addresses the situation in which modeling is used to determine the 1-hour critical emissions value used to calculate a limit necessary to provide for attainment, in which an adjustment factor is determined and applied to identify a reduced longer-term average limit to correspond to the modeled 1-hour value. The comparable stringency methodology provided in the guidance could also be utilized to estimate a 1-hour emission rate that may be used in a dispersion modeling run. Specifically, a preexisting longer-term average limit can be divided by the appropriate adjustment

factor to determine an hourly modeled emission rate that is commensurate with the longer-term limit. Application of an adjustment factor means modeling this source using an hourly emission rate to which the 24-hour block limit established in Missouri's SIP is comparably stringent.

In EPA's supplemental modeling run, the emissions from Boilers 1 and 2 were treated as merged for a combined emissions rate from Ameren-Sioux. EPA's stack height regulations restrict the circumstances under which plume merging is creditable. Under 40 CFR 51.100(hh), plume merging is defined to be a prohibited dispersion technique except, in the case of merging occurring after July 8, 1985, for cases in which such merging is part of a change in operation at the facility that includes the installation of pollution controls and is accompanied by a net reduction in the allowable emissions of a pollutant. (See 40 CFR 51.100(hh)(2)(B)). The stack height regulations also note that this exclusion from the definition of dispersion techniques shall apply only to the emission limitation for the pollutant affected by such change in operation. To reduce its SO_2 emissions, Ameren-Sioux began operation of flue gas desulfurization of the emissions from Boilers 1 and 2 on November 15, 2010, and October 26, 2010, respectively. The construction of the new stack to vent the emissions from these units was part of the same project as installation of flue gas desulfurization equipment. Although Missouri did not adjust its SIP emission limit to reflect the reduction of allowable

emissions until several years after the installation of the pollution controls, the merging accompanied the installation of controls and may also be considered to accompany a net reduction in allowable emissions because the initial request for credit for merging was accompanied by a limit that required the net emission reduction that the Ameren-Sioux control project achieved. *See* TSD at 5.

The final SO_2 emission rate modeled for the merged Boilers 1 and 2 stack at Ameren-Sioux was 10,301.669 lbs/hr (1,297.988 g/s). Based on guidance from the 2014 U.S. EPA's SO_2 NAAQS Designations Modeling Technical Assistance Document, a ratio of 1-hour to 24-hour block average 99th percentile SO_2 emission rates in lbs/hr were calculated using data collected from 2016 – 2020. This resulted in an adjustment factor of 2,007 lbs/hr / 2,816 lbs/hr = 0.7127. When the adjustment factor of 0.7127 is applied to the 24-hour block limit of 7,342 lbs/hr, a 1-hour emission rate to which the longer-term limit would be comparably stringent to would be 10,301.669 lbs/hr. The merged stack was modeled using the GEP stack height of 145.41 meters.

The other model inputs of EPA's supplemental run, i.e., receptor grid, background concentrations, meteorological data, and list of modeled sources, were consistent with the Illinois submitted modeling. Stack heights for the merged two vents at Ameren-Sioux and two stacks at WRB Refining were modified in the supplemental run to be consistent with GEP stack heights. The supplemental run used version 21112 of AERMOD. Results of these

runs are described below.

D. Emission Limits

A key element of Illinois' attainment plan is a change in Alton Steel's LMF exhaust configuration from the four downward-angled vents to a single 70-foot high, three-foot diameter stack with an unobstructed (no rain cap), vertically directed exhaust stream, which is represented in their final modeling. This change was mandated in Illinois' Construction Permit #18020009. As required by the construction permit, the SO_2 emissions of this furnace shall not exceed 0.10 pound/ton of steel produced, 11.20 pounds per hour and 37.50 tons per year. The first two of these limits apply on an hourly basis, such that Illinois' plan is designed to provide for attainment based on emission limits for the primary source in the area that apply every hour. Illinois is not relying on the limit on annual emissions to provide for attainment.

An important prerequisite for approval of an attainment plan is that the emission limits that provide for attainment be quantifiable, fully enforceable, replicable, and accountable. *See* General Preamble at 13567-68. The revised SO_2 emission SIP limit at Ameren-Sioux is expressed as a 24-hour block average limit. Therefore, part of the review of Illinois' attainment plan must address the use of these limits, both with respect to the general suitability of using this limit for this purpose and with respect to whether the particular limits included in and/or credited by the plan have been suitably demonstrated to provide

for attainment. The first subsection that follows addresses the enforceability of the limits in and/or credited by the plan, and the second subsection that follows addresses the credited 24-hour block limit.

1. Enforceability

The change to Alton Steel's LMF exhaust configuration from the four downward-angled vents to a single 70-foot high, three-foot diameter stack with an unobstructed (no rain cap), vertically directed exhaust was mandated in Illinois Construction Permit #18020009, which is being incorporated into Illinois' SIP in the present action. This permitting action provides the federal enforceability supporting this portion of the attainment demonstration element of the revised SIP. As required by the construction permit, the SO_2 emissions of this furnace shall not exceed 0.10 pound per ton of steel produced, 11.20 pounds per hour and 37.50 tons per year. EPA considers these emission limits and source configuration requirements, specified in Construction Permit Number #18020009, to be suitably enforceable. The facility must submit annual compliance certifications to ensure that the facility is meetings its SIP limits. Additionally, the facility must submit a semi-annual Monitoring Report to the Illinois EPA, Air Compliance Section, summarizing required monitoring and identifying all instances of deviation from the permit. Stack testing must be done to verify the margin of compliance with the SO_2 limit.

For Ameren-Sioux, EPA has approved a more stringent 24-hour block limit submitted by Missouri that is aimed at reducing the facility's allowable emissions to levels that will allow the Alton nonattainment area to be modeled in attainment[7]. Ameren-Sioux will be subject to the more restrictive limit of 7,342 lbs/hour of SO_2 averaged over a 24-hour block period. Being a large coal fired EGU, the Ameren-Sioux facility is required to monitor its release of SO_2 via CEMS for other reasons such as the acid rain program and the Cross-State Air Pollution Rule (CSAPR). This requirement also provides for a means to measure compliance at the source to ensure that the facility does not exceed its permanent and enforceable limit. To demonstrate compliance, Ameren must calculate the calendar day 24-hour block average emission for each unit subject to the facility wide emission limit. Unit level emission rates will then be summed together to determine a facility wide emission rate. Only valid operating hours will be included in the calculations for the daily emission rates. Valid operating hours include only hours that meet the primary equipment hourly operating requirements of 40 CFR 75.10(d). For example, if the source only meets 40 CFR 75.10(d) operational requirements for one hour in a particular 24-hour block period, the compliance with the emissions limit would be calculated by the total emissions divided by the one hour of operation that meets 40 CFR 75.10(d). Therefore, any day with at least one hour that meets operational requirements

[7] See 87 FR 68634

will have a calculated block average that will be used to demonstrate compliance with the emissions limit. Hours when the units are experiencing startup, shutdown, or malfunction conditions will be used for the calculation if they meet the primary equipment hourly operating requirements of 40 CFR 75.10(d).

2. Longer-term average limits

As noted above, while Illinois considered only the 1-hour average limits it adopted for Alton Steel, EPA also considered the updated 24-hour block limit approved into the Missouri SIP for the Ameren-Sioux facility. Therefore, the hypothetical critical emissions value to which Ameren-Sioux's 24-hour block average limit would be comparably stringent, and that is used in the attainment modeling for the area, would reflect an upward adjustment from the 7,342 lbs/hour averaged over a 24-hour block period. EPA conducted a site-specific analysis of variability at Ameren-Sioux using 2016-2020 CEMS data from EPA's Clean Air Markets Division's MySQL database, which was the most up to date information available at the time of analysis. EPA employed the method detailed in our 2014 guidance and used the historic 1-hour 99^{th} percentile of SO_2 emissions against the 99^{th} percentile 24-hour block average to derive an appropriate adjustment factor. EPA determined that the adjustment factor for the Ameren-Sioux facility is 0.7127 and that it would be appropriate to apply this adjustment factor to Ameren-Sioux's long term averaging limit in order to estimate a 1-hour emission rate for

modeling purposes. After applying the adjustment factor, EPA determined that a 1-hour emission rate used for modeling purposes would be 10,301.669 lbs/hour. EPA has determined through our supplemental modeling that an hourly emissions rate of 10,301.669 lbs/hour is protective of the standard. As such, EPA determines that Ameren-Sioux's updated limit of 7,342 lbs/hour will provide for attainment in the nonattainment area.

E. Background Concentrations

The Illinois demonstration of modeled attainment of the 2010 SO_2 NAAQS is based upon the combined impacts of facility-specific emission rates together with monitored background concentrations integrated into the simulations. Regional sources not explicitly modeled in AERMOD, but which are contributors to ambient SO_2 loadings within the nonattainment area, are represented via background monitoring data. In accordance with a "Tier 2" approach in EPA's guidance on background concentrations, Illinois identified separate background values for each hour of the day for each of the four seasons, for a total of 96 background values. Each of these values represents a three-year average (2014-2016) of the second highest hourly concentration for the applicable hour of the day for the applicable season. The seasonal, hourly-averaged 2014-2016 SO_2 background values for the attainment demonstration were developed from data collected at the East St. Louis monitor. *See* TSD at 13. These values range from 6.81 to 27.4 ppb, with an average value of 14.94 ppb.

F. Summary of Results

Illinois evaluated many factors in their modeling runs to evaluate measures needed to ensure attainment in the area. In their modeling runs, Illinois indicated that the prior limit in Ameren-Sioux's Missouri's SIP did not ensure attainment. Illinois determined that the impact of maximum allowable emissions from Ameren-Sioux also reflecting the reconfigured LMF stack for Alton Steel yielded a maximum predicted 99th percentile 1-hour average concentration of 298.5 $\mu g/m^3$, and Illinois concluded that scaling this result down to reflect a temporally representative operating rate (either a 60^{th} or a 70^{th} percentile rate) would also show violations.

EPA concludes that Illinois' modeling is a suitable demonstration that its requirements in the new permit for Alton Steel and all other Illinois sources in the nonattainment area were properly addressed in the attainment plan. EPA's supplemental modeling has demonstrated that the updated 24-hour block limit for Ameren-Sioux of 7,342 lbs SO_2/hr and the revised limits at Alton Steel provide for attainment. For reasons described above, EPA considers the limits relied upon in this plan to be permanent and enforceable. EPA's modeling suitably demonstrates that the Ameren-Sioux limit (in combination with requirements for Alton Steel) provides for attainment.

As noted above, EPA conducted a supplementary modeling run to evaluate the Ameren-Sioux facility subject to the updated 7,342 lbs SO_2/hr 24-hour block limit that is found in the

Missouri SIP. Since this limit is evaluated on a 24-hour block basis, EPA applied a 71.27 percent adjustment factor, modeling a 1-hour emissions rate of 10,300.666 lbs SO_2 per hour to which the 24-hour block limit is comparably stringent. The modeled design value from EPA's supplemental run was 196.2 µg/m^3, or 74.9 ppb. This run used GEP stack heights, which for two facilities were slightly lower than the heights Illinois modeled; a separate supplementary run without these corrections yielded essentially identical results. These results confirm Illinois' demonstration that with the applicability and creditability of revised limits for Alton Steel and Ameren-Sioux, Illinois' plan provides for attainment. EPA believes that this 24-hour block average emission limit, in combination with the requirements for Alton Steel, are suitable elements of a plan that appropriately provides for attainment.

V. Review of Other Plan Requirements

A. Emissions Inventory

The Round 2 Wood River Study Area emission inventory was used as the starting point for creating the Alton Township NAA modeling inventory. A re-evaluation of sources was instituted, which reflected a shift in modeling focus from Dynegy's Wood River Power Station to the Alton Steel "mini-mill." This re-evaluation was also driven by the need to address allowable emissions (for the SIP revision) rather than actual emissions (for an area designation recommendation).

The emissions inventory and source emission rate data for

an area serve as the foundation for air quality modeling and other analyses that enable states to: 1) estimate the degree to which different sources within a nonattainment area contribute to violations within the affected area; and 2) assess the prospects for attaining the standard based on alternative control measures. As noted above, the state must develop and submit to EPA a comprehensive, accurate, and current inventory of actual emissions from all sources of SO_2 emissions in each nonattainment area, as well as any sources located outside the nonattainment area which may affect attainment in the area. *See* CAA section 172(c)(3).

Illinois provided a comprehensive, accurate, and current inventory of emissions of SO_2 in and within 10 kilometers of the Alton township area. Illinois additionally examined whether any large sources beyond 10 kilometers of the nonattainment area might also have significant air quality impacts in the area, resulting in the addition of Ameren-Sioux to the inventory. By this means, Illinois has developed a thorough list of the sources with any potential to cause impacts that warrant including in the area's attainment modeling.

Illinois included the sources of WRB Refining Inc. (formerly named ConocoPhillips), National Maintenance and Repair Inc., GBC Metals LLC (d/b/a Olin Brass), Olin Corporation, Alton Water Treatment Facility, ConocoPhillips Hartford Lubricant Plant, Alton Memorial Hospital, St. Anthony's Hospital, St. Clare's Hospital, and Charles E. Mahoney Company along with

Alton Steel. The emission sources at Alton Steel, as well as those for many of the modeled nearby Illinois facilities, do not operate with variable loads but rather as "on-off" process operations, with the notable exception of Ameren-Sioux. The emissions inventory that Illinois submitted reflects actual emissions of these sources.

Table 1: Alton Township NAA Modeling Inventory – Actual Alton Area 2017 SO_2 Point Source Emissions

Source Description	Emission Rate (tons per year)
Alton Steel	45.39
National Maintenance & Repair	3.93
GBC Metals	0.64
Olin Corporation	0.12
Alton Water Treatment Facility	2.40
Conoco Philips Hartford Lubricant Plant	0.00
Ameren-Sioux Power Center	2722.267
Alton Memorial Hospital	0.15
St. Anthony's Hospital	1.67
St. Clare's Hospital	0.02
Charles E. Mahoney	4.70
WRB	1494.59
Ardent Mills LLC	0.006
Bluff City Minerals ACQ LLC	0.04
Precor Refining Group Inc	0.001
Linde LLC	0.005
Apex Oil Co Inc	0.014
Shell Oil Products US	0.0012
Koch Fertilizer LLC	0.0042

Table 2: Total SO_2 Emissions

Category	Emissions (tons per year)
Non-EGU Point	1559.34
EGU Point	2722.267
Area	81.5196
On-Road Mobile	11.2065
Off-Road Mobile	41.8851
Total	4415.9512

B. RACM/RACT and Emissions Limitations and Control Measures

Section 172(c)(1) of the CAA requires states to adopt and submit all RACM, including RACT, as needed to attain the standards as expeditiously as practicable. Section 172(c)(6)

requires the SIP to contain enforceable emission limits and control measures necessary to provide for timely attainment of the standard. Illinois has required the principal contributor to the NAAQS violations, Alton Steel, to build a stack aimed at reducing the facility's contribution to the nonattainment area. Alton Steel built a stack to disperse emissions more appropriately from their facility; this change, along with establishment of suitable emission limits in their construction permit, along with the proposed limit on Ameren-Sioux to be found in the Missouri SIP, ensures that the area will attain the SO_2 air quality standard. Consequently, consistent with EPA policy that reasonable measures do not extend beyond a set of measures that provide for attainment, Illinois asserts, and EPA concurs, that the state's plan satisfies requirements for RACM/RACT.

C. New Source Review (NSR)

EPA approved Illinois' nonattainment new source review rules on December 17, 1992 (57 FR 59928); September 27, 1995 (60 FR 49780); and May 13, 2003 (68 FR 25504). These rules provide for appropriate new source review for SO_2 sources undergoing construction or major modification in the Alton Township area without need for modification of the approved rules. Although these rules predated promulgation of the 2010 SO_2 standards, these rules are written in a manner such that new sources within areas that become designated nonattainment for this new standard, such as the Alton Township area, become subject to

these nonattainment new source review requirements. Therefore, this requirement has been met for this area.

D. RFP

Section 172 of the CAA requires Illinois' Alton Township Attainment Plan SIP to provide for reasonable further progress toward attainment. For SO_2 SIPs, which address a small number of affected sources, requiring expeditious compliance with attainment emission limits can address the RFP requirement. Alton Steel was required to complete its stack construction and meet its emission limits by December 31, 2018. For Ameren-Sioux, a new limit was approved into the Missouri SIP establishing a more stringent limit by establishing a limit of 7,342 lbs/hour averaged over a 24-hour block period. EPA approved Ameren-Sioux's new limit on November 16, 2022 (87 FR 68634) and is permanent and enforceable. EPA concludes that the timely requirements in the state's plan, including revised limits and construction of a 70-foot-tall stack for the Alton Steel facility and the SIP approved limit of Ameren-Sioux, represent implementation of control measures as expeditiously as practicable. This plan shows that Illinois can provide for attaining the standard. Accordingly, EPA proposes to find that Illinois' plan provides for RFP.

E. Contingency Measures

Section 172 of the CAA requires that nonattainment plans include additional measures which will take effect if an area fails to meet RFP or fails to attain the standard by the

attainment date. As noted above, EPA guidance describes special features of SO_2 planning that influence the suitability of alternative means of addressing the requirement in section 172(c)(9) for contingency measures for SO_2. An appropriate means of satisfying this requirement is for the state to have a comprehensive enforcement program that identifies sources of violations of the SO_2 NAAQS and for the state to undertake aggressive follow-up for compliance and enforcement. Illinois' plan provides for satisfying the contingency measure requirement in this manner for sources in the state. EPA concurs and proposes to approve Illinois' plan for meeting the contingency measure requirement in this manner.

VI. EPA's Proposed Action

EPA is proposing to approve Illinois' submission as a SIP revision, which the state submitted to EPA on December 31, 2018, for attaining the 2010 SO_2 NAAQS for the Alton Township nonattainment area. As part of this action, EPA is proposing to incorporate Illinois' Permit to Construct Number #18020009, applicable to Alton Steel, by reference into the SIP. The permit requires that Alton Steel operates a new LMF stack to replace the four downward facing vents on the individual compartments on the LMF stack. The SO_2 emissions from the LMF stack must not exceed 0.10 pound per ton of steel produced, 11.20 pounds per hour, and 37.50 tons per year.

This SO_2 nonattainment plan includes Illinois' attainment demonstration for the Alton township SO_2 nonattainment area.

Although Illinois did not explicitly model air quality based on Ameren-Sioux's updated limit, Illinois provided sufficient information and modeling to enable EPA to conduct additionally necessary supplemental modeling to demonstrate that the revised limit at the Alton Steel facility, that will drastically reduce any contributions from Illinois to the violations modeled in the NAA, and a lower limit imposed on Ameren-Sioux by Missouri would allow the area to meet the standard. Therefore, EPA concludes that the modeling in Illinois' plan, as supplemented by EPA, adequately demonstrates that the control requirements that apply to relevant sources in and near the area, including the revised 24-hour block SO_2 limit for Ameren-Sioux, provide for attainment in the area. As previously explained, EPA conducted a confirmatory model run explicitly applying the more stringent limit at Ameren-Sioux, and factoring a historically representative adjustment factor, showing more directly that the measures in Illinois' plan as supplemented by this limit provide for attainment. This nonattainment plan also addresses requirements for emission inventories, RACT/RACM, RFP, and contingency measures. Illinois has previously addressed requirements regarding nonattainment area NSR. EPA has determined that Illinois' SO_2 nonattainment plan meets the applicable requirements of CAA sections 172, 191, and 192. EPA is taking public comments for thirty days following the publication of this proposed action in the Federal Register. EPA will take these comments into consideration in our final

action.

VII. Incorporation by Reference.

In this rule, EPA is proposing to include in a final EPA rule regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is proposing to incorporate by reference the Illinois construction permit for Alton Steel, Inc., issued March 5, 2018, as described in section VI. of this preamble. EPA has made, and will continue to make, these documents generally available through *www.regulations.gov* and at the EPA Region 5 Office (please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

VIII. Statutory and Executive Order Reviews.

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);

- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian

reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Sulfur oxides.

Dated: December 21, 2022.

Debra Shore,
Regional Administrator, Region 5.

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