**6560-50-P**

**ENVIRONMENTAL PROTECTION AGENCYMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA-R04-OAR-2017-0626; FRL-9980-18-Region 4]**

**Air Plan Approval;**

**Tennessee; Attainment Plan for Sullivan County $SO_2$ Nonattainment Area**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to approve a State Implementation Plan (SIP) revision submitted by the State of Tennessee, through the Tennessee Department of Environment and Conservation (TDEC), to EPA on May 12, 2017, for attaining the 2010 1-hour sulfur dioxide ($SO_2$) primary national ambient air quality standard (NAAQS) for the Sullivan County $SO_2$ nonattainment area (hereafter referred to as the "Sullivan County Area" or "Area"). The Sullivan County Area is comprised of a portion of Sullivan County in Tennessee surrounding the Eastman Chemical Company (hereafter referred to as "Eastman"). This plan (herein called a "nonattainment plan or SIP" or "attainment plan or SIP") includes Tennessee's attainment demonstration and other elements required under the Clean Air Act (CAA or Act). In addition to an attainment demonstration, the plan addresses 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 emissions inventories, enforceable emissions limitations and control measures, and contingency measures. EPA proposes to conclude that Tennessee has appropriately demonstrated that the plan's provisions provide for attainment of the 2010 1-hour

primary $SO_2$ NAAQS in the Sullivan County 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-R04-OAR-2017-0626 at http://www.regulations.gov. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. 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, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit http://www2.epa.gov/dockets/commenting-epa-dockets.

**FOR FURTHER INFORMATION CONTACT:** D. Brad Akers, Air Regulatory Management Section, Air Planning and Implementation Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Mr. Akers can be reached via telephone at (404) 562-9089 or via electronic mail at akers.brad@epa.gov.

**SUPPLEMENTARY INFORMATION:**

## I. Requirement for Tennessee to Submit an $SO_2$ Attainment Plan for the Sullivan County Area

On June 22, 2010, EPA promulgated 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 99$^{th}$ 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). On August 5, 2013, EPA designated a first set of 29 areas of the country as nonattainment for the 2010 $SO_2$ NAAQS. *See* 78 FR 47191, codified at 40 CFR part 81, subpart C. These designations included the Sullivan County Area, which encompasses the primary $SO_2$ emitting source Eastman and the nearby $SO_2$ monitor (Air Quality Site ID: 47-163-0007). These area designations were effective October 4, 2013. Section 191(a) of the CAA directs states to submit SIPs for areas designated as nonattainment for the $SO_2$ NAAQS to EPA within 18 months of the effective date of the designation, i.e., by no later than April 4, 2015 in this case. Under CAA section 192(a) these SIPs are required to demonstrate that their respective areas will attain the NAAQS as expeditiously as practicable, but no later than 5 years from the effective date of designation, which is October 4, 2018. In addition, sections 110(a) and 172(c), as well as EPA regulations at 40 CFR part 51, set forth substantive elements each SIP must contain to be approved by EPA.

For the Sullivan County Area (and many other areas), EPA published a notice on March 18, 2016, that Tennessee (and other pertinent states) had failed to submit the required $SO_2$ nonattainment plan by this submittal deadline. *See* 81 FR 14736. This finding initiated a deadline under CAA section 179(a) for the potential imposition of new source review and highway funding sanctions. However, pursuant to Tennessee's submittal of May 12, 2017, and

EPA's subsequent letter dated October 10, 2017, to Tennessee finding the submittal complete and noting the termination of these sanctions deadlines, these sanctions under section 179(a) will not be imposed as a result of Tennessee having missed the April 4, 2015 deadline. Under CAA section 110(c), the March 18, 2016 finding also triggered a requirement that EPA promulgate a federal implementation plan (FIP) within two years of the finding unless (a) the state has made the necessary complete submittal and (b) EPA has approved the submittal as meeting applicable requirements.

## II. Requirements for $SO_2$ Attainment Plans

To be approved by EPA, nonattainment areas must provide SIPs meeting the applicable requirements of the CAA, and specifically CAA sections 110(a), 172, 191 and 192 for $SO_2$. EPA's regulations governing nonattainment 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 recommended guidance for meeting the statutory requirements in $SO_2$ SIPs under the 2010 revised NAAQS, in a document entitled, "Guidance for 1-Hour $SO_2$ Nonattainment Area SIP Submissions," available at https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance_nonattainment_sip.pdf (hereafter referred to as EPA's April 2014 $SO_2$ guidance or guidance). In this guidance EPA described the statutory requirements for

$SO_2$ SIPs for nonattainment areas, which includes: an accurate emissions inventory of current emissions for all sources of $SO_2$ within the nonattainment area; an attainment demonstration; demonstration of RFP; implementation of RACM (including RACT); new source review (NSR); enforceable emissions limitations and control measures; and adequate contingency measures for the affected area.

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 insures equivalent or greater emission reductions of such air pollutant.

## III. Attainment Demonstration and Longer Term Averaging

CAA sections 172(c)(1) and (6) direct 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 four fundamental principles of quantification, enforceability, replicability, and accountability. 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 $SO_2$ 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 describes the option to utilize emission limits with longer averaging times of up to 30 days so long as the state meets various suggested criteria. *See* EPA's April 2014 $SO_2$ guidance, pp. 22 to 39. The guidance recommends that—should states and sources utilize longer averaging times—the longer term average limit should be set at an adjusted level that reflects a stringency comparable to the 1-hour average limit at the critical emission value (CEV) shown by modeling to provide for attainment that the plan otherwise would have set.

EPA's April 2014 $SO_2$ guidance provides an extensive discussion of EPA's rationale for concluding that appropriately set comparably stringent limitations 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 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. *Id*. at pp. 22 to 39. *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 hourly exceedance of the 75-ppb level does not create a violation of the standard. Instead, at issue is whether a source operating in compliance with a properly set longer term average could cause hourly exceedances of the NAAQS level, and if so the resulting frequency and magnitude of such 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 1-hour value will be at or below 75 ppb. A synopsis of how EPA judges whether such plans "provide for attainment," based on modeling of projected allowable emissions and in light of the NAAQS's form for determining attainment at monitoring sites, follows.

For $SO_2$ plans that are 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) is labeled the "critical emission value." The modeling process for identifying this critical emissions 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.

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 emission value. EPA also acknowledges the concern that longer term emission limits can allow short periods with emissions 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 exceedance occurring on a day when an exceedance would not have occurred if emissions were continuously controlled at the level corresponding to the critical emission 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 similar to 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

[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 99$^{th}$ percentile daily maximum hourly values (e.g., the fourth highest maximum daily hourly concentration in a year with 365 days with valid data), this discussion and an example below uses a single "average year" to simplify the illustration of relevant principles.

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 emission 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 emission level, and in the longer term average limit scenario the source is presumed to occasionally emit more than the critical emission value but on average, and presumably at most times, to emit well below the critical emission value. In an "average year," compliance with the 1-hour limit is expected to result in three exceedance days (*i.e.*, three days with hourly values 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 emission 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 emission 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 (lbs/hr). 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 lbs/hr. In this simplified example, assume 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 lbs/hr, 1100 lbs/hr, 500 lbs/hr, 900 lbs/hr, and 1200 lbs/hr, respectively. (This is a conservative example because the average of these emissions, 900 lbs/hr, 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 and fourth days would not have exceedances that otherwise would have occurred. In this example, the fourth highest maximum daily concentration under the 30-day average would be 67.5 ppb.

This simplified example illustrates 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 $SO_2$ 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 emission 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 exceedances and better air quality than an emission profile with maximum allowable emissions under a 1-hour emission limit at the critical emission value. 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 exceedances even though it may produce some unexpected exceedances above the critical emission value–meets the requirements in sections 110(a)(1) and (2), 172(c)(1) and (6) for SIPs to contain enforceable emissions limitations and other control measures 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 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 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 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 $SO_2$ 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 emission 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 degree of 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 emission limitation. 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.[2] 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 $SO_2$ NAAQS is provided in appendix A to the April 2014 $SO_2$ 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 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

[2] 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 lbs/hr.

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 NAAQS, 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, 2010a).

## IV. Review of Attainment Plan Requirements

### A. Emissions Inventory

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 expected improvement in air quality within the nonattainment area due to the adoption and implementation of 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).

The primary $SO_2$-emitting point source located within the Sullivan County Area is Eastman, which produces organic acids, aldehydes, esters, polymers, cellulose esters, specialty plastics, and acetate fibers. The facility also produces process steam and electricity for most of

the operations, including hazardous waste combustion, and wastewater treatment. Eastman consists of three main $SO_2$ emitting sources comprised of three powerhouses that include a total of 14 boilers and several smaller emitters:

- Powerhouse B-83 consists of Boilers 18 – 24, denoted B-18 – B-24, which fire coal to provide steam for facility operations. Each of the seven emissions units has the following capacities: Boilers B-18 – B-20 are rated at 246 million British thermal units per hour (MMBtu/hr); Boilers B-21 – B-22 have a rated capacity of 249 MMBtu/hr; and Boilers B-23 – B-24 have a rated capacity of 501 MMBtu/hr. All seven B-83 boilers have existing limits on $SO_2$ emissions of 2.4 lbs/MMBtu based on a 1-hour averaging period. Actual emissions from B-83 were 5,686 tons per year (tpy) in 2011.
- Powerhouse B-253 consists of units B-25 – B-29 which fire coal to provide steam for facility operations. Each emissions unit, B-25 – B-29 has a rated capacity of 655 MMBtu/hr and an existing limit on $SO_2$ emissions of 2.4 lbs/MMBtu based on a 24-hour averaging period. The B-253 powerhouse is currently undergoing a multi-year project to convert the power generation from the coal-fired boilers to natural gas-fired boilers to comply with regional haze best available retrofit technology (BART). *See* section IV.B.4.i for additional BART discussion. The result will be that the emissions units B-25 – B29 will fire only natural gas as repowered units start up and for all units no later than the attainment date for the 1-hour $SO_2$ NAAQS, October 4, 2018.[3] Actual emissions from B-253 were 14,897 tpy in 2011.

[3] As mentioned elsewhere in this proposed action, four boilers have converted to exclusive use of natural gas for fuel combustion already. These repowered units have different heat capacities, and the fuel content is such that the actual emissions of $SO_2$ will always be much less than the formerly permitted rate.

- Powerhouse B-325 consists of Boilers B-30 and B-31, which fire coal to provide steam for facility operations. Boiler B-30 has a rated capacity of 780 MMBtu/hr and an existing emission limit on $SO_2$ emissions of 317 lbs/hr based on a 30-day averaging period, equivalent to 0.406 lbs/MMBtu. Boiler B-31 is rated at 880 MMBtu/hr and has an existing limit on $SO_2$ emissions of 293 lbs/hr based on a 30-day averaging period, equivalent to 0.333 lbs/MMBtu. Actual emissions from B-325 were 1,276 tpy in 2011.
- The B-248 unit consists of three hazardous waste combustors, one liquid chemical waste incinerator and two rotary kilns that can burn solid or liquid chemical waste, B-248-2, Vent A, and B-248-1, Vents D and E, respectively. According to the attainment SIP submitted by TDEC in May 2017, each of these units is subject to an existing limit on $SO_2$ emissions for an exhaust concentration of 1,000 parts per million by volume $SO_2$, equivalent to 1,109 tpy for B-248-2, Vent A, and 1,552 tpy each for 248-1, Vents D and E. Actual emissions from B-248 were 7.3 tpy in 2011. On February 1, 2018, TDEC issued a revised title V permit (568496) that included additional $SO_2$ limits of 20 tpy for Vent A and 40 tpy for Vents D and E, combined.
- Eastman has 31 other smaller emission units that provide various services to other parts of the facility, and these units account for 194.56 tpy of the allowable emissions across the facility. Actual emissions from the remaining units were 40.9 tpy in 2011. For more information on these miscellaneous units, see the May 12, 2017, submittal.

The emissions at units for Eastman were recorded either by using data collected from CEMS or by material balances based on feed rates and other parameters and are quality-assured by TDEC.[4]

The next largest $SO_2$ source within the nonattainment area is the EnviraGlass, LLC glass manufacturing facility (EnviraGlass). $SO_2$ emissions from EnviraGlass were 49.3 tons in 2011, as determined from material balances. The EnviraGlass Kingsport facility consists of one main $SO_2$ emitter. The glass melting furnace #1 (GMF-1) fires natural gas and No. 2 fuel oil. The allowable permit limit for EnviraGlass of 39.6 lb/hr was included in the attainment modeling.

The next largest $SO_2$ source in Sullivan County is located just outside the Sullivan County Area boundary: Domtar Paper Company, LLC, Kingsport Paper Mill (Domtar). Domtar produces pulp and paper and is permitted to burn hog fuel, dry wood residue, engineered fuel, wastewater treatment plant sludge, fuel oil, and natural gas. $SO_2$ emissions from this facility were 70.8 tons in 2011, as determined from material balances. The permitted allowable $SO_2$ emissions limit for the main $SO_2$ emissions unit at Domtar, the HFB1-1 biomass boiler, was included in the attainment modeling (264 lb/hr = 33.26 g/s). TDEC determined that the other $SO_2$ emissions units at Domtar did not need to be explicitly modeled because of their smaller emissions levels. Therefore, these sources were accounted for using the background concentration discussed in section IV.B.5 of this notice.

TDEC utilized EPA's 2011 National Emissions Inventory (NEI), Version 2 as the starting point for compiling point source emissions for the base year emissions inventory. The hazardous waste incinerators at Eastman in B-248 were erroneously reported as 20 tpy each for B-248-1 and B-248-2. TDEC corrected this information from the 2011 NEI with information submitted

[4] As detailed in Section IV. of this proposed action, CEMS will be installed for Powerhouse B-83. Therefore, all subsequent emissions inventories and all compliance assessments will be based on CEMS measurements.

by Eastman.[5] EnviraGlass, formerly Heritage Glass, did not report emissions for the 2011 NEI, so TDEC used semiannual compliance reports pursuant to the title V operating permit for the facility to determine emissions.

TDEC also used the 2011 NEI, Version 2 to obtain estimates of the area and nonroad sources. For onroad mobile source emissions, TDEC utilized EPA's Motor Vehicle Emissions Simulator (MOVES2014). A more detailed discussion of the emissions inventory development for the Sullivan County Area can be found in Tennessee's May 12, 2017, submittal.

Table 1 below shows the level of emissions, expressed in tpy, in the Sullivan County Area for the 2011 base year by emissions source category. The point source category includes all sources within the nonattainment area.

**Table 1. 2011 Base Year Emissions Inventory**

**for the Sullivan County Area (tpy)**

| Year | Point | Onroad | Nonroad | Area | Total |
|---|---|---|---|---|---|
| 2011 | 21,956.5 | 1.62 | 0.16 | 10.6 | 21,968.88 |

Domtar is not included in the base year inventory for the Sullivan County Area because it is outside of the boundary of the nonattainment area. However, TDEC evaluated 2011 emissions from this facility to evaluate its impact on the area. Domtar's emissions were reported for the 2011 NEI, but TDEC determined that emissions from HFB1-1, the biomass boiler, were initially reported in error as 2.06 tons. Actual emissions were determined from fuel usage data supplied

[5] For more information on this correction to the 2011 NEI, Version 2 emissions, see Attachment A of Tennessee's May 12, 2017, submittal.

by Domtar, leading to 44.1 tpy $SO_2$ emitted in 2011 from HFB1-1 and total facility-wide emissions of 70.8 tpy.[6]

EPA has evaluated Tennessee's 2011 base year emissions inventory for the Sullivan County Area and has made the preliminary determination that this inventory was developed consistent with EPA's guidance. Therefore, pursuant to section 172(c)(3), EPA is proposing to approve Tennessee's 2011 base year emissions inventory for the Sullivan County Area.

The attainment demonstration also provides for a projected attainment year inventory that includes estimated emissions for all emission sources of $SO_2$ which are determined to impact the nonattainment area for the year in which the area is expected to attain the standard. This inventory must address any future growth in the Area. Growth means any potential increases in emissions of the pollutant for which the Sullivan County Area is nonattainment ($SO_2$) due to the construction and operation of new major sources, major modifications to existing sources, or increased minor source activity. TDEC included a statement in its May 12, 2017 submittal declaring that the air agency assumes no growth of major sources in the Sullivan County Area, and that minor source growth should not significantly impact the Area. TDEC cites to its "Growth Policy" found at Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-09-.01(5), which includes the nonattainment new source review (NNSR) program and the requirement for minor sources and minor modifications proposing to construct in a nonattainment area to apply BACT, approved into the SIP and last updated on July 30, 2012 (*see* 77 FR 44481). The NNSR program includes lowest achievable emissions rate, offsets, and public hearing requirements for major stationary sources and major modifications.

[6] For more information on this correction to the 2011 NEI, Version 2 emissions, see Table 3-8 of the May 12, 2017, submittal.

TDEC provided a future year projected emissions inventory for all known sources included in the 2011 base year inventory, discussed above, that were determined to impact the Sullivan County Area. The projected emissions are set to be accurate beyond October 1, 2018, when the control strategy for the attainment demonstration will be fully implemented. Therefore, as an annual future year inventory, the point source portion is accurate beyond October 1, 2018, and would represent an annual inventory for 2019 or beyond. The projected emissions in Table 2 are estimated actual emissions, representing a 67.6 percent reduction from the base year $SO_2$ emissions. The point source emissions were estimated by taking credit for the control strategy to repower the boilers at B-253 and assuming actual emissions at other Eastman units would remain the same as in 2011. Additionally, EnviraGlass has not operated in recent years, and TDEC includes a statement in its May 12, 2017 submittal that as of February 2017, the source had not resumed its operations. Therefore, EnviraGlass emissions were projected as zero tpy. If this source began operation again, actual emissions would be much less than those from Eastman (~50 tpy), and would be reported in future inventories.

Per EPA's April 2014 $SO_2$ guidance, the existing allowable emissions limits and the new 30-day, combined emission limit (see section IV.B.4) that TDEC is requesting EPA approve into the SIP, were modeled to show attainment. These projected actual emissions included in the future year inventory are less than the allowable emission limits, and therefore offer a greater level of certainty that the NAAQS will be protected under all operating scenarios. Emissions estimates for onroad sources were re-estimated with MOVES2014. The nonroad emissions were projected using national growth factors, and area source emissions were scaled based on emission factors developed using the Annual Energy Outlook 2014 for consumption and

production forecasts. Both categories were then apportioned to the nonattainment area based on population in the nonattainment area relative to that of Sullivan County.[7]

**Table 2. Projected 2018 $SO_2$ Emissions Inventory for the Sullivan County Area (tpy)**

| Year | Point | Onroad | Nonroad | Area | Total |
|---|---|---|---|---|---|
| 2011 | 21,956.5 | 1.62 | 0.16 | 10.6 | 21,968.88 |
| 2019 | 7,104.5 | 0.64 | 0.006 | 10.521 | 7,115.67 |

## B. Attainment Modeling Demonstration

Eastman operates a large manufacturing facility in Kingsport that includes major $SO_2$ sources with the potential to emit greater than 100 tons per year (tpy) of $SO_2$. The $SO_2$ emissions come from three main boiler groups B-83, B-253 and B-325. Powerhouse B-253 serves five boilers (Boilers 25 – 29), each with an individual stack, that provide steam and electricity to the facility. Powerhouse B-325 serves two coal-fired boilers that vent to a single stack (Boiler 30 and Boiler 31). Boiler 30 is equipped with a spray dryer absorber and electrostatic precipitator to control particulate matter and acid gases. Boiler 31 is equipped with a spray dryer absorber and fabric filter to control particulate matter and acid gases. Powerhouse B-83 serves seven boilers; five coal-fired boilers (Boilers 18 – 22) venting to a single stack, and two coal-fired boilers (Boilers 23 and 24) that also burn wastewater treatment sludge, venting to a single stack.

These boilers, along with three other backup natural gas-fired boilers with minimal $SO_2$ emissions (B-423), provide process steam and most of the electrical power needed to supply

[7] For more information, see Attachments A – D of the May 12, 2017, submittal.

Eastman's operations. The combination of boilers and boiler operating loads at any given time depends on manufacturing demands along with availability of boilers, as each boiler has annual scheduled shutdowns. The following discussion evaluates various features of the modeling that Tennessee used in its attainment demonstration.

### *1. Model Selection*

Tennessee's attainment demonstration used AERMOD, the preferred model for this application, and the associated pre-processor modeling programs. The State used the 16216r version of AERMOD with regulatory default options and urban dispersion coefficients.[8] Receptor elevations and hill heights required by AERMOD were determined using the AERMAP terrain preprocessor version 11103. The meteorological data was processed using AERMET version 16216 with the regulatory adjusted U* option. The surface characteristics around the meteorological surface station were determined using AERSURFACE version 13016 and building downwash was assessed with the BPIP processor (version 04274). EPA proposes to find these model selections appropriate for the attainment demonstration.

### *2. Meteorological Data*

The Sullivan County nonattainment area is in a wide valley surrounded by complex terrain ridges. Eastman evaluated available surface meteorological data in the area and determined that none of nearby National Weather Surface (NWS) stations in area were representative of the site-specific winds that occur in the nonattainment area valley. Therefore,

[8] Tennessee and Eastman determined that urban dispersion coefficients are appropriate for the modeling analysis based upon an assessment of land use within a 3-kilometer radius of the Eastman boiler stacks using the Auer technique contained in Section 7.2.1.1.b.i of 40 CFR Part 51, Appendix W. The analysis resulted in 52.4 percent of the area being classified as urban land use categories, which is above the 50 percent criteria for using urban dispersion coefficients. Additionally, Tennessee and Eastman performed an analysis to estimate an effective population for the urban option to account for the large industrial heat release at the Eastman facility. The results of this analysis yield an effective population of 200,000, which is approximately four times the approximate 50,000 population of Kingsport, Tennessee. The complete details of Tennessee and Eastman's analysis are discussed in Section 4.1 of Attachment G1, "NAAQS Attainment Demonstration Modeling Analysis," in Tennessee's final SIP submittal. EPA preliminarily agrees that urban dispersion coefficients with an effective population of 200,000 is appropriate for the modeling, and believes the procedures to estimate the effective population are appropriate.

Eastman installed and operated a site-specific 100-meter meteorological data tower and Doppler SODAR system to collect profiles of meteorological data (wind speed, wind direction, temperature). One year of site-specific data was collected from April 1, 2012 through March 31, 2013.[9] EPA has reviewed the site-specific meteorological data and has preliminarily determined that the data meets the quality assurance criteria and the 1-year of data is appropriate for the modeling analysis. Site-specific turbulence parameters (sigma-theta and sigma-w) were also collected. However, as recommended in the December 2016 final revisions to the EPA's Guideline on Air Quality Models, contained in 40 CFR Part 51, Appendix W (Appendix W), since Eastman chose to use the adjusted U* (surface friction velocity) regulatory option in AERMET, the site-specific turbulence parameters were not used. The data from the 100-meter tower and Doppler SODAR were merged with concurrent additional NWS surface data parameters needed by AERMOD (*e.g.*, cloud cover data) from the Tri-City Regional Airport National Weather Station (13877) and upper air data from Nashville, TN (13897).

The surface roughness (zo), albedo (r), and Bowen ratio (Bo) required surface parameters were determined for the area around the site-specific meteorological surface station using AERSURFACE version 13016. Eastman processed the meteorological data and surface parameters into AERMOD-ready files using AERMET version 16216 with the regulatory adjusted U* option. Complete details of the meteorological data collection and processing are available in sections 3.1-3.8 of Attachment G1, "NAAQS Attainment Demonstration Modeling Analysis," in Tennessee's final SIP submittal. EPA preliminarily finds that the meteorological data collection and processing is appropriate for the modeled attainment demonstration.

[9] Pursuant to Section 8.4.2.e of 40 CFR Part 51, Appendix W, if site-specific meteorology is used for the modeling analysis, at least 1-year of site-specific data should be collected. The data should meet the quality assurance criteria in EPA's 2000 "Meteorological Monitoring Guidance for Regulatory Modeling Applications." Publication No. EPA–454/ R–99–005. Office of Air Quality Planning and Standards, Research Triangle Park, NC. (NTIS No. PB 2001–103606).

### *3. Emissions Data*

The emission inputs to Tennessee's attainment demonstration modeling reflect 1-hour emissions that correspond to allowable emissions from sulfur dioxide emission units at the Eastman facility and other nearby emissions sources located within and outside the Sullivan County nonattainment area. Eastman's modeled emissions sources include nine coal-fired boilers, five natural gas boilers that were converted from coal-fired to natural gas-fired units, and a tail-gas incineration unit. Although the limit on emissions from Eastman governs the 30-day average sum of emissions from all nine coal-fired boilers, Tennessee conducted modeling using a constant hourly rate (the 1,905 lb/hr 1-hour CEV), as recommended by EPA's April 2014 $SO_2$ guidance. As discussed in more detail in section IV.B.6 below, Tennessee has conducted 34 modeling runs using a full range of emission distributions, to show that the limit ensures attainment, regardless of how emissions are distributed among the various boilers within this limit. In addition, Tennessee used the statistical procedures recommended in Appendix C of EPA's guidance to establish an adjustment factor that it applied to determine the limit it would otherwise have set.

Two additional $SO_2$ emissions sources, EnviraGlass, located within the nonattainment area, and Domtar Paper, located just outside the nonattainment area, were also included in Tennessee's attainment demonstration modeling, modeled at their hourly emission limits. Additional details regarding the emissions units are included in the Emissions Inventory, section IV.A., of this proposed rule and section 2 of Attachment G1, "NAAQS Attainment Demonstration Modeling Analysis," in Tennessee's final SIP submittal. EPA proposes to find that the emissions sources included in the modeling are appropriate for the attainment

demonstration. All other sources not explicitly included in the modeling were addressed using the background concentration discussed in section IV.B.5 of this notice.

### *4. Emission Limits*

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. Some of the limits that Tennessee's plan relies on are expressed as 30-day average limits. Therefore, part of the review of Tennessee's attainment plan must address the use of these limits, both with respect to the general suitability of using such limits for this purpose and with respect to whether the limits included in the plan have been suitably demonstrated to provide for attainment. The first subsection that follows addresses the enforceability of the limits in the plan, and the second subsection that follows addresses the combined, 30-day emission limit for Boilers 18-24, 30 and 31. Sections IV.B.6 and 7 discuss the modeling conducted to demonstrate that the limit of combined emissions of these boilers suitably provides for attainment.

#### i. **Enforceability**

Section 172(c)(6) provides that emission limits and other control measures in the attainment SIP shall be enforceable. Tennessee's attainment SIP for the Sullivan County nonattainment area relies on control measures and enforceable emission limits for Powerhouses B-253, B-83 and B-325 (for more discussion on these boilers, please refer to section IV.A above). These emission reduction measures were accounted for in the attainment modeling for the Eastman facility which demonstrates attainment for the 2010 NAAQS.

Tennessee's control strategy for B-253 relies on compliance with the State's Regional Haze SIP to install BART for $SO_2$ and other pollutants that impair visibility at Class I areas. TDEC's original April 4, 2008, regional haze SIP identified B-253 (Boilers 25-29) at Eastman Chemical as BART-eligible units.[10] Tennessee subsequently amended its regional haze SIP (May 14, 2012 and May 25, 2012) to establish BART requirements for Eastman including an alternative BART option to repower (convert coal-fired boilers to natural gas) Boilers 25-29 at B-253 by December 31, 2018.[11] The alternative BART measure became federally-enforceable through the issuance of BART permit 066116H on May 9, 2012, and an amendment on May 22, 2012, which changed the conversion completion date to align with the 1-hour $SO_2$ NAAQS compliance deadline of October 4, 2018 (Condition 4(f)).[12] Tennessee issued construction permit 966859F on June 15, 2013, authorizing construction of the B-253 boilers conversion to natural gas. Condition 6 of Permit 966859F establishes a natural gas fuel restriction after conversion is complete for each boiler.

In conjunction with the natural gas conversion control strategy at B-253, Tennessee also established a 30-day combined $SO_2$ emission limit for nine coal-fired boilers at B-83 (seven

[10] A BART-eligible source is an emission source that has the potential to emit 250 tons or more of a visibility-impairing pollutant, was constructed between August 7, 1962 and August 7, 1977, and whose operations fall within one or more of 26 listed source categories. The Clean Air Act requires BART for any BART-eligible source that a State determines ''emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area." EPA finalized a limited approval/limited disapproval of portions of Tennessee's April 4, 2008, regional haze SIP on April 24, 2012 (77 FR 24392). The April 4, 2008, SIP established the State's plan to comply with federal requirements to ensure natural visibility conditions at Class I areas by requiring affected sources to install BART for $SO_2$ and other visibility-impairing pollutants.

[11] Tennessee's initial Eastman BART determination required Eastman to reduce $SO_2$ emissions at Boilers 25-29 either by 92 percent or comply with a limit of 0.20 lbs/MMBtu established through the BART permit (066116H). EPA approved Eastman's BART determination, the alternative BART option and permit 066116H on November 27, 2012 (77 FR 70689).

[12] Condition 4(f) also prohibits operation of any B-253 boiler not converted after the October 2018 $SO_2$ NAAQS compliance date until repowered to natural gas.

boilers) and B-325 (two boilers) pursuant to EPA's April 2014 $SO_2$ guidance on longer term average limits (see section IV.B.4.ii below). Tennessee established a single, combined 30-day rolling average of 1,753 lbs/hr $SO_2$ emission limit through Permit 070072F on May 10, 2017, for Boilers 18-24 at B-83 and Boilers 30-31 at B-325. Boilers 30 and 31 at B-325 also have existing individual $SO_2$ emission limits of 317 lbs/hr and 293 lbs/hr, respectively, based on a 30-calendar day rolling average.[13] Eastman must comply with the combined 30-day limit for the 30-day period ending on October 31, 2018[14] and each 30-day period thereafter. Therefore, Eastman must begin to comply with the new limit no later than October 2, 2018. Compliance will be determined based on continuous emission monitoring system (CEMS) data for all nine boilers. EPA provides additional details, section IV.B.4.ii below, regarding how the combined 30-day $SO_2$ emission limit was derived. The enforceable emission limit and compliance parameter ensure control measures will achieve the necessary incremental $SO_2$ emissions reductions necessary to attain the NAAQS as expeditiously as practicable. Based on the attainment modeling of B-253 repowering combined with the 30-day $SO_2$ emission limits for B-83 and B-325, the area is projected to begin showing attaining monitoring design values.

Tennessee's May 11, 2017, attainment SIP requests EPA approve into the SIP the authorization for alternative BART repowering of Boilers 25-29 at B-253 at Condition 4(f) of

[13] Established in construction Permit 955272F, Boiler 30 has a 317 lbs/hr 30-day $SO_2$ limit and Boiler 31 has a 293 lbs/hr 30-day $SO_2$ limit, giving B-325 an allowable limit of 610 lbs/hr on a 30-day average.

[14] EPA's April 2014 $SO_2$ guidance recommends that attainment plans provide for compliance at least one calendar year prior to the attainment deadline, to facilitate collection of air quality monitoring data reflecting attainment plan implementation. This air quality data would indicate whether the attainment plan is in fact successfully providing for attainment. Nevertheless, the guidance also notes that EPA has the discretion to approve plans that are judged to provide for attainment by the statutory attainment deadline, even if the monitoring data collected prior to the attainment deadline are judged to indicate that that plan has not yielded timely attainment. EPA believes that Tennessee's attainment plan provides for attainment, notwithstanding the possibility that subsequent review of available monitoring data may support a conclusion that the plan did not in fact provide for timely attainment.

Regional Haze permit 066116H[15] (approved into Tennessee's regional haze SIP on November 12, 2012), natural gas fuel restriction for Boilers 25-29 (after each natural gas conversion) at Condition 6 of PSD construction permit 966859F, and the 30-day rolling single, combined $SO_2$ emission limit of 1,753 lbs/hr for boilers at B-83 and B-325 at Conditions 1 through 4[16] of permit 070072F, which also include compliance parameters (monitoring, recordkeeping and reporting). The accountability of the $SO_2$ emission limit is established through TDEC's inclusion in the nonattainment SIP and in the attainment modeling demonstration to ensure permanent and enforceable emission limitations as necessary to provide for attainment of the 2010 $SO_2$ NAAQS.

**ii. Longer Term Average Limits**

Tennessee has developed a single, combined emission limit of 1,753 lbs/hr of $SO_2$ emissions on a 30-day average basis. This emission limit applies to nine coal-fired boilers, which emit $SO_2$ from three separate stacks from powerhouses B-83 and B-325. These nine coal-fired boilers help provide both steam and electricity for the Eastman facility and Boilers 23 and 24 (at B-83) also burn wastewater treatment sludge. Based on the unique, interconnected operations and the steam demand for the Eastman facility, Tennessee elected to establish a single, combined emission limit governing the sum of emissions from these nine boilers. Tennessee concluded that the NAAQS will be attained so long as total hourly emissions from these nine boilers are at or below 1,905 lbs/hr. Tennessee based this conclusion on a set of 34 modeling runs, which encompassed several "worst-case" emissions scenarios. These scenarios and the modeling results are described in detail in section IV.B.6 of this notice. EPA ordinarily

[15] EPA notes condition 4(f) was approved into Tennessee's SIP on November 12, 2012 as part of the State's Regional Haze SIP. *See*77 FR 70689.

[16] In Tennessee's $SO_2$ attainment SIP (page 33) the state requested EPA approve Conditions 1-5 from Permit 070072F however, EPA notes only four conditions were included in the final issued permit.

uses the term critical emissions value (CEV) to mean the 1-hour emission rate for an individual stack that, in combination with the other CEVs for other relevant stacks, the state shows through proper modeling to yield attainment. However, in this case, EPA is using the term CEV to mean the total emissions from all nine Eastman coal-fired boilers emitting from three stacks that Tennessee has shown to yield attainment, reflecting Tennessee's approach of evaluating an appropriate limit on the sum of these emissions.

After establishment of this combined-source CEV, Tennessee used the procedures recommended in Appendix C of EPA's April 2014 $SO_2$ guidance to determine an adjustment factor with which to establish a single, combined emission limit with a longer term averaging time (30-day). Tennessee analyzed three years of historical hourly emissions data (2013-2015) from the nine boilers in question. Tennessee used the sum of emissions from the nine boilers in this analysis, determining a $99^{th}$ percentile of the 1-hour total emissions values and a $99^{th}$ percentile of the 30-day average total emission values. The ratio of these $99^{th}$ percentile values yielded an adjustment factor of 0.92. Multiplication of this adjustment factor times the collective CEV yielded a 30-day average limit of 1,753 lbs/hr. EPA believes that Tennessee, by following the approach recommended in Appendix C of the April 2014 $SO_2$ guidance, has justified a conclusion that this 1,753 lbs/hour limit (governing the sum of emissions from the nine boilers) may be considered comparably stringent to a 1-hour limit of 1,905 lbs/hr (again governing the sum of emissions from the nine boilers). Since the emission limit being established for these nine boilers is a single, combined limit, EPA believes it is appropriate for the adjustment factor also to be computed based on the total combined emissions from the nine boilers. Therefore, EPA proposes to agree that the adjustment factor of 0.92 is appropriate in this case.

EPA's April 2014 $SO_2$ guidance further states, "The second important factor in assessing whether a longer term average limit provides appropriate protection against NAAQS violations is whether the source can be expected to comply with a longer term average limit in a manner that minimizes the frequency of occasions with elevated emissions and magnitude of emissions on those occasions." The guidance advises that the establishment of supplemental limits to provide direct constraints on the frequency and/or magnitude of emissions exceeding the CEV can be valuable, but the guidance also acknowledges the possibility that occasions of emissions exceeding the CEV may be rare and modest in magnitude even without supplemental enforceable limitations. Tennessee concluded that occasions of emissions exceeding the critical emissions would be infrequent and modest in magnitude even without adoption of supplemental limits. EPA conducted its own evaluation of whether this element of the guidance is satisfied, such that compliance with Tennessee's 30-day average emission limit would provide adequate confidence that the area will attain the standard.

The historical emissions data do not provide a direct measure of the frequency and magnitude of elevated emissions to expect once Eastman complies with the 30-day limit. The historical Eastman emissions data that Tennessee used is from a period in which emissions frequently were higher than the new limit. During the 2013 to 2015 period, Eastman's total emissions exceeded the subsequently adopted limit (1,753 lbs/hr) in approximately 32.4 percent of 30-day averages, and exceeded the 1-hour CEV (1,905 lbs/hr) in approximately 21.5 percent of hours. Thus, Eastman will be required to make emission reductions sufficient to comply with the new 30-day limit (1,753 lb/hr), which would both eliminate the occasions of 30-day average emissions above 1,753 lbs/hr and reduce the number and possibly eliminate the occasions when 1-hour emission levels exceed 1,905 lbs/hr. The question then is how frequently and with what

associated emission levels can 1-hour emissions levels be expected to exceed the CEV once Eastman complies with the 30-day average limit.

Since Tennessee has permitted a combined, multi-stack emission limit (1,753 lb/hr) for the nine coal-fired boilers, there are multiple compliance scenarios possible. Consequently, there is also a range of frequencies that the hourly emissions can exceed the CEV while still meeting the 30-day permit limit. To forecast the frequency and magnitude of emissions of occasions with emissions above the CEV, EPA asked Tennessee for information regarding how Eastman expects to comply with the new limit. Tennessee responded[17] that Eastman's compliance strategy will likely be to modify the order of dispatch of the nine boilers in question, dispatching Boilers 18 through 22 from Powerhouse B-83 less often in the future, in particular by reducing the dispatching of the smaller coal-fired boilers (Boilers 18, 19, and 20) in favor of greater operation of the larger boilers that are being converted to burn natural gas.[18] These smaller boilers are the oldest and least efficient boilers of the nine and provide only low pressure steam to the facility. EPA used this information provided by Tennessee and the less efficient nature of these boilers and further analyzed the historical (2013 to 2015) emissions. Given the order of preference in boiler dispatch provided by Tennessee and efficiency considerations, EPA expects that three boilers (B-18 to B-20) may be operated at approximately 20 percent of their historical rates. This level of operation for these boilers would yield compliance with the new limit and allow Eastman to meet its steam generation needs. With that level of operation of those boilers, the number of occasions of total plant emissions exceeding the CEV was found to be 1.1 percent

[17] See emails from TDEC to EPA Region 4 dated January 26 and February 8, 2018.

[18] Tennessee's analysis in the February 8 email confirmed that, under the new combined limit, there should be adequate capacity available at natural gas boilers at B-253 and B-423, without the need to revise existing permit limits for these individual units.

of the hours, with these hours on average being 4.4 percent above the CEV.[19] During EPA's analyses, we found that the frequency of emissions over the CEV could range from 1 to 10 percent of the time, depending on the operational scenario used to comply with the 30-day limit. While EPA acknowledges the uncertainty in forecasting the frequency of elevated emissions and the magnitude of emissions on those occasions, based on the information received from Tennessee and our own analysis, EPA believes that emissions at Eastman are unlikely to exceed the CEV more than a few percent of the hours, at levels generally only a modest percent over the CEV. Compliance with the 30-day limit will be ensured using a CEMS and appropriate monitoring, recordkeeping and reporting requirements. Consequently, EPA proposes to conclude that the second criterion for use of longer term average limits is satisfied, even without supplemental limits to constrain the frequency and emissions level of occasions when emissions exceed the CEV.

Based on a review of the State's submittal, EPA believes that the single, combined 30-day average limit for the nine boilers in Powerhouses B-83 and B-325, in conjunction with the existing individual 30-day average limits for Boilers B-30 and B-31, provides a suitable alternative to establishing a 1-hour average emission limit for each unit or for the collected units at this source. Further discussion of Tennessee's modeling analysis of its set of limits, along with discussion of pertinent considerations in applying the procedures of Appendix C of EPA's guidance in determining appropriate longer term limits, is provided in section IV.B.6 below. In summary, EPA believes that the State has used a suitable data base in an appropriate manner and has thereby applied an appropriate adjustment, yielding an emission limit that has comparable

[19] The email correspondence with TDEC and supporting documentation (including Tennessee's spreadsheet data and EPA's spreadsheet used for these calculations) are in the docket (ID: EPA-R04-OAR-2017-0626) for this proposed rule.

stringency to the 1-hour average limit that the State determined would otherwise have been necessary to provide for attainment. While the 30-day average limit allows for occasions in which emissions may be higher than the level that would be allowed with the combined-unit 1-hour limit, the State's limit compensates by requiring average emissions to be lower than the level that would otherwise have been required by a 1-hour average limit. As described above in this section, in section III and explained in more detail in EPA's April 2014 $SO_2$ guidance for nonattainment plans, EPA believes that appropriately set longer term average limits provide a reasonable basis by which nonattainment plans may provide for attainment. Based on the general information provided in this guidance document as well as the information in Tennessee's attainment SIP, EPA proposes to find that the 30-day average limit for Eastman's nine boilers in combination with other limitations in the State's plan will provide for attainment of the NAAQS.

***5. Background Concentration***

In accordance with section 8.3 of 40 CFR Part 51, Appendix W, Tennessee's attainment demonstration addresses the impacts from all $SO_2$ emissions sources not explicitly included in the AERMOD modeling analysis by adding representative background concentrations to the impacts from the modeled sources. The State and Eastman chose to use 2013-2015 ambient monitoring data from a sulfur dioxide monitor located at Mammoth Cave National Park in Kentucky (AQS ID 21-061-0501) to develop "seasonal by hour of the day" background concentrations. The hourly concentrations range from 2.79 to 18.51 micrograms per cubic meter ($\mu g/m^3$). The complete details of the background concentrations are described in section 3.9 of Attachment G1 of the Tennessee's Attainment Demonstration submittal. EPA preliminarily

finds use of the Mammoth Cave background data is appropriate for the attainment modeling analysis.

### *6. Analysis of Multi-Stack Limit*

The use of a limit governing the sum of emissions from multiple stacks, in lieu of individual limits for each stack, calls for a demonstration that the worst-case distribution of these emissions provides for attainment. To provide this demonstration, Tennessee conducted thirty-four (34) AERMOD modeling runs using varying combinations of boiler load and emissions scenarios for the nine coal-fired boilers to verify that the modeling includes the worst-case operational scenarios allowed under the single, thirty-day rolling average, emissions limit of 1,753 lbs/hr for the nine coal-fired boilers. The 34 modeling scenarios were performed to derive the single, combined 1,905 lbs/hr CEV for the nine coal-fired boilers (two stacks at the B-83 Powerhouse and one stack at the B-325 Powerhouse) that results in modeled attainment of the NAAQS. As defined in EPA's April 2014 $SO_2$ guidance, the CEV is the level of emissions that results in modeled concentrations that are just below the level of the NAAQS; as noted above, this term is being applied to the combination of emissions from the nine coal-fired boilers referenced earlier in the notice.

With these 34 AERMOD modeling runs, Tennessee and Eastman evaluated a wide range of future potential operational scenarios, considering boiler steam load demands for Eastman's production processes and boiler load-shifting that is projected to occur once the conversion of the five coal-fired boilers at B-253 (Boilers 25-29) from burning coal to natural gas is completed by October 2018. Based upon this evaluation, 34 operational scenarios were selected by Tennessee and Eastman for the CEV modeling analysis. Four of these 34 operation scenarios reflected all of the $SO_2$ being emitted from a single stack, including two scenarios where all of the 1,905

lbs/hr is released from one or the other of the two B-83 stacks individually, one scenario where the B-325 stack emitted 726 lbs/hr[20] (which is the one hour equivalent to the current permitted, federally enforceable allowable emissions limit for B-325), and one scenario where the B-325 stack emitted 1,800 lbs/hr to simulate a B-325 worst-case emissions scenario. The modeled predicted concentrations from the three single-stack scenarios with permissible emission levels ranged from 89.08 µg/$m^3$ to 182.7 µg/$m^3$; the scenario with B-325 emitting 1,800 lbs/hr, well above its permissible level, yielded an estimated highest concentration of 190.8 µg/$m^3$. Nine modeling scenarios were performed to evaluate emissions from various combinations when two of the three stacks are in operation. For these scenarios, the 1,905 lbs/hr CEV rate was divided between the two stacks in multiple combinations to represent reasonable potential worst-case future operations. The modeled predicted concentrations from the nine two-stack scenarios range from 171.6 µg/$m^3$ to 190.5 µg/$m^3$, with the highest value of 190.5 µg/$m^3$ resulting from a scenario when the Boilers 18-22 B-83 stack was emitting at the highest level near its maximum capacity (1,039 lbs/hr), the Boilers 23-24 B-83 stack was emitting near its average rate (866 lbs/hr), and Boilers 30-31 were not operating (0 lb/hr). Twenty-one modeling scenarios were performed to evaluate simultaneous operation of all three stacks. As with the two-stack scenarios, the 1,905 lbs/hr critical value emissions rate was divided among the three stacks in multiple combinations to represent reasonable potential worst-case future operations. The modeled predicted concentrations from the twenty-one three-stack scenarios range from 186.0 µg/$m^3$to 195.37 µg/$m^3$. The maximum model predicted concentration from the three-stack

[20] Established in PSD Permit 955272F, Boiler 30 has a 317 lbs/hr 30-day $SO_2$ limit and Boiler 31 has a 293 lbs/hr 30-day $SO_2$ limit, giving B-325 an allowable limit of 610 lbs/hr on a 30-day average. For the purposes of modeling, Eastman calculated an adjustment factor specific to the B-325 stack in accordance with the methods of Appendix C of EPA's guidance. Eastman calculated an adjustment factor of 0.84, which yielded a corresponding one-hour emission rate of 726 lbs/hr.

scenarios, which is also the maximum for all 34 scenarios, 195.37 µg/$m^3$, occurred in the three-stack operational scenario that assumes the majority of the emissions came from the Boilers 18-22 B-83 stack emitting near its maximum capacity (1,133 lbs/hr), emissions were slightly below normal from the Boilers 23-24 B-83 stack (719 lbs/hr), and emissions were low from the B-325 stack (53 lbs/hr, as Boiler 30 was assumed to not be operating and Boiler 31 operating under minimal load). Tables which summarize the emissions and modeling input parameters for each of the 34 scenarios and additional details about the full range of scenarios are contained in the State's modeling analysis in sections 7.11 and 7.12 of the State's Attainment Demonstration Submittal and section 5 of Attachment G1, "NAAQS Attainment Demonstration Modeling Analysis," in Tennessee's final SIP submittal.

As noted earlier, in calculating the adjustment factor to multiply times the collective CEV (the 1-hour sum of emissions providing for attainment in the full range of distribution of the emissions) to determine a comparably stringent collective 30-day emission limit, Tennessee used statistics for the sum of emissions from all the stacks governed by this limit. EPA's guidance does not expressly recommend how to address comparable stringency for limits that address the sum of emissions across multiple stacks. However, EPA's guidance at page 32 states:

> The selection of data handling procedures influences the longer term averages that are computed and thus influences the relationship between a 1-hour limit and a comparably stringent longer term average limit. Therefore, . . . all analyses for determining comparably stringent longer term average limits should then apply those data handling procedures.

This suggests that the computation of adjustment factors for a limit governing the sum of emissions from multiple stacks should be based on statistical analysis of the variability of the

sum of emissions from the multiple stacks, irrespective of the variability of emissions from the individual stacks. In the case of Eastman, while the facility shifts load among its various boilers, resulting in relatively variable emissions at any boiler, the total load is relatively steady, resulting in only modest variability of total emissions. As a result, use of a 30-day limit makes less difference in the control measure needed to meet the limit, and so less adjustment is needed to establish a 30-day limit that is comparably stringent to the corresponding 1-hour limit. Given the demonstration that the full range of potential distributions of 1,905 lb/hr provides for attainment, EPA also believes that a 30-day average limit of 1,753 lb/hr provides suitable assurance that attainment would result under the full range of distribution of these allowable emissions.

***7. Summary of Modeling Results***

The AERMOD modeling analysis contained in Tennessee's Attainment Demonstration submittal resulted in a maximum modeled design value of 195.37 $\mu g/m^3$, including the background concentration, which is less than the 196.4 $\mu g/m^3$ (75 ppb) 1-hour sulfur dioxide NAAQS.

EPA has evaluated the modeling procedures, inputs and results and proposes to find that the results of the State's modeling analysis demonstrate that there are no modeled violations of the NAAQS within the nonattainment area when the combined emissions from the nine coal-fired boilers are no greater that the 1,905 lbs/hr CEV. Additionally, EPA proposes to find that the 34 modeling scenarios are adequate to address the range of possible future operating scenarios of the boilers at the Eastman facility and, therefore, support that the 1,905 lbs/hr combined CEV is appropriate. Section IV.B.4.ii. of this notice explains how Tennessee and Eastman developed the 1,753 lbs/hr 30-day rolling average permit limit following the procedures in EPA's April 2014 $SO_2$ guidance.

## C. RACM/RACT

CAA section 172(c)(1) requires that each attainment plan provide for the implementation of all RACM as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of RACT) and shall provide for attainment of the NAAQS. EPA interprets RACM, including RACT, under section 172, as measures that a state determines to be reasonably available and which contribute to attainment as expeditiously as practicable for existing sources in the area.

Tennessee's plan for attaining the 1-hour $SO_2$ NAAQS in the Sullivan County $SO_2$ nonattainment area is based on several measures, including repowering the B-253 boilers from coal to natural gas operation. Tennessee's plan requires compliance with these measures by October 1, 2018. This date is consistent with Tennessee's Regional Haze SIP, which was amended on May 9, 2012. The amended SIP allowed Eastman to implement BART no later than April 30, 2017, or an alternative BART option (repowering of the boilers from coal to natural gas) by December 31, 2018. The alternative BART option became federally enforceable with the issuance of BART permit 066116H on May 9, 2012. A prevention of significant deterioration (PSD) construction permit (966859F), which authorizes construction for the boiler repowering, was issued June 5, 2013. Condition 4(f) of permit 066116H requires the repowering of B-253 to be completed no later than the compliance deadline for the one-hour $SO_2$ NAAQS. Also, Tennessee evaluated B-325 Boiler 31, and determined that the spray dryer absorber/fabric filter baghouse combination already in place constitutes RACT, and that therefore no further analysis is required.

Tennessee considered various other measures for the remaining B-83 and B-325 boilers. The State evaluated a range of measures to reduce $SO_2$ emissions, including switching to low-

sulfur coal, upgraded or additional control equipment, conversion of existing coal-fired boilers to natural gas, and replacing existing coal-fired boilers with natural gas boilers. Tennessee determined that these other measures are not reasonable for a variety reasons, including infeasibility and cost, and that they were not needed to attain the NAAQS and would not advance the attainment date. See Table 5-2 in the submittal for additional details on the measures analyzed. In addition, Tennessee evaluated other operations at Eastman as well as additional sources within and adjacent to the nonattainment area and determined that no additional controls were required as RACT.

Tennessee has determined that repowering B-253 to natural gas constitutes RACT and EPA proposes to concur with the state's RACT analysis. Based on the attainment modeling, described herein, for the B-253 control measures combined with the 30-day $SO_2$ emission limit for B-83 and B-325, the area is projected to show attainment of the 1-hour $SO_2$ standard. EPA believes the attainment plan provides for attainment through the adoption and implementation of Tennessee's RACT/RACM emission control strategy. Therefore, EPA proposes to conclude that the state has satisfied the requirement in section 172(c)(1) to adopt and submit all RACM as needed to attain the standards as expeditiously as practicable.

**D. New Source Review (NSR)**

Tennessee's SIP-approved NSR rules for nonattainment areas (NNSR) are at TAPCR 1200-03-09-.01(5), last approved by EPA on July 30, 2012. *See* 77 FR 44481. These rules provide for appropriate NSR for $SO_2$ sources undergoing construction or major modification in the Sullivan County Area without need for modification of the approved rules. Therefore, EPA proposes to conclude that this requirement is met for this Area through Tennessee's existing NSR rules.

## E. Reasonable Further Progress (RFP)

The CAA section 172(c)(2) requires the SIP provide reasonable further progress towards attainment of the applicable NAAQS. Regarding part D nonattainment plans, section 171(1) of the CAA defines RFP as the annual incremental reduction in emissions of the relevant pollutant as are required for the purpose of ensuring attainment of the applicable NAAQS by the applicable date. As discussed above, Tennessee's 2008 regional haze SIP required Eastman implement BART at B-253 (Boilers 25-29). The State revised its SIP to establish an alternative BART option to repower/convert all five coal-fired boilers at B-253 to natural gas units and changed the compliance deadline to the 1-hour $SO_2$ NAAQS attainment date or October 4, 2018.[21] TDEC and Eastman indicated that the size and complexity of the repowering required additional time to ensure the conversion was technically feasible. Tennessee's control strategy to reduce $SO_2$ emission and attain the 2010 standard as expeditiously as practicable include the repowering of the five coal-fired boilers at B-253 and imposing an $SO_2$ emission limit for the nine coal-fired boilers for B-83 and B-325. Eastman established a repowering timeline for B-253 listed in Table 3 below and in Tennessee' $SO_2$ attainment SIP.

**Table 3**: **Estimated Compliance Schedule for B-253 Repowering**

| Boiler | Date[22] | Activity |
|---|---|---|
| 25 | 1st Quarter(Q1), 2014 | Complete; startup date was April 23, 2014. |

[21] Tennessee's attainment SIP mistakenly states that the 1-hour $SO_2$ attainment date is October 5, 2018 instead of October 4, 2018.

[22] According to TDEC, Eastman did not schedule the conversion of any boilers in 2015 or 2017 due to legally required annual boiler safety inspections and maintenance to ensure facility steam and electricity reliability. The necessary engineering work for the conversion of Boilers 27 and 28 in 2016 was performed in 2015 and 2017 for Boilers 26 and 29. For additional information, please refer to Tennessee's Attainment SIP Narrative located in the docket (ID: EPA-R04-OAR-2017-0626).

| | | |
|---|---|---|
| 27 | 1st and 2nd Quarter in 2016 | Equipment mobilization, six-week conversion and demobilization; pre-outage construction conducted 4th quarter of 2017 thru the 1st quarter in 2018.<br><br>Conversion Complete - start-up date was April 23, 2016 |
| 28 | 2nd and 3rd Quarter in 2016 | Equipment mobilization, six-week conversion and demobilization; pre-outage construction conducted 4th quarter of 2017 thru the 1st quarter in 2018.<br><br>Conversion Complete - start-up date was October 2, 2016 |
| 29 | 1st and 2nd Quarter in 2018 | Equipment mobilization, six-week conversion and demobilization; pre-outage construction conducted 4th quarter of 2017 thru the 1st quarter in 2018.<br><br>Conversion Complete-start-up date was March 30, 2018 |
| 26 | 3rd Quarter in 2018 | Equipment mobilization, six-week conversion and demobilization; pre-outage construction conducted 4th quarter of 2017 thru the 1st quarter in 2018. |

Based on this projected timeline, Eastman intends to complete conversion of B-253 by the 3rd quarter of 2018 just before the October 4, 2018 attainment date. At the time of this proposed rulemaking, four of the five coal-fired boilers at B-253 (B-25, 27, 28, and 29) have been converted, are fully operational and currently subject to the natural gas fuel restriction established in Permit 966859F. According to Eastman, this compliance schedule was the most practicable to meet the BART requirements and attain the $SO_2$ NAAQS to maintain the necessary steam and electricity for manufacturing operations. This is also due, in part, to the state required (Tennessee Code Section 68-122-110) annual boiler safety inspection and maintenance of all 17 boilers at Eastman (including B-253) while ensuring necessary boiler capacity to sustain facility operations.[23] According to Eastman, to complete the conversion of a

[23] The Tennessee Boiler and Unfired Pressure Vessel inspection law (Tennessee Code Section 68-122-110) requires annual inspection and maintenance of Eastman's 17 power boilers. According to Eastman, only one boiler at a time is taken off-line to ensure the necessary steam and electricity reliability for manufacturing operations. The duration of each inspection depends on the size and maintenance cycle of the boiler components. Eastman has stated it takes

boiler to natural gas the normal safety inspection is extended to 6 weeks. Because of extended inspections and boiler shutdowns in 2017, Eastman did not convert any boilers at B-253 in 2017. As indicated in Table 3, the final boiler (B-26) is scheduled for conversion in the 3rd quarter of 2018.

Tennessee's May 2017 attainment SIP also provides estimated incremental emission reductions during the conversion of all five boilers at B-253. Table 6-2 in TDEC's submittal[24] provides for projected change in actual emissions at Eastman over the duration of the repowering at B-253 and post-control after the attainment date. TDEC compared the pre-control emission rates for all boilers at B-83, B-325 and B-253 for the period of April 1, 2012 through March 31, 2013 over the course of the conversion (interim years 2015 and 2017) to post-control emissions (after October 4, 2018). Projected emission reductions after the completion of B-253 conversion and compliance with the $SO_2$ emission limit for B-83 and B-325, are expected to be 66 percent compared to pre-control levels (with estimated incremental emission reductions of 11 percent and 39 percent in 2015 and 2017 respectively (after complete conversion of B-25 in 2014 and B-27 and 28 in 2016). The average pre-control emissions from each B-253 boiler was 677 pounds per hour (or 2,965 tpy). TDEC estimates that each boiler conversion will reduce emissions by 2,960 tpy.

The control measures for attainment of the 2010 $SO_2$ NAAQS included in the State's submittal have been modeled to achieve attainment of the 1-hour SO2 NAAQS. The adoption of new emissions limits, and compliance parameters and a natural gas restriction (for repowered B-

46-48 of the 52 weeks to complete the scheduled inspections and boiler maintenance. Eastman also indicated that it is not practicable for the facility to schedule more than two extended inspections per calendar year without potential risk meeting production demands.

[24] EPA notes the second note to Table 6-2 list 1,794 lbs/hr as the combined 30-day average allowable emission rate for B-83 and B-325 boilers, however, the correct emission rate is 1,753 lbs/hr.

253 boilers) require these control measures to achieve emissions reductions. Tennessee finds that the attainment plan requires the affected sources to implement control measures as expeditiously as practicable to ensure attainment of the 1-hour standard and therefore concludes that the attainment plan provides for RFP in accordance with the approach to RFP described in EPA's guidance. EPA believes Tennessee's SIP provides for incremental reduction in emissions to ensure reasonable further progress towards attainment of the standard and therefore concurs and proposes to preliminary conclude that the plan provides for RFP and therefore satisfies the requirements of CAA section 172(c)(2).

## F. Contingency Measures

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 $SO_2$, such that in particular 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 to undertake an aggressive follow-up for compliance and enforcement. Tennessee's plan provides for satisfying the contingency measure requirement in this manner.

Specifically, upon notification by Tennessee that a reference monitor for the Area has registered four validated ambient $SO_2$ concentrations in excess of the NAAQS during calendar years 2019 or 2020, or that a monitored $SO_2$ NAAQS violation based on the design value occurred during calendar years 2021 and beyond, Eastman will, without any further action by Tennessee or EPA, undertake a full system audit of all emission units subject to emission limits under this plan and submit a written system audit report to Tennessee within 30 days of the

notification. Upon receipt of the system audit report, Tennessee will immediately begin a 30-day evaluation period to diagnose the cause of the monitored exceedance. This evaluation will be followed by a 30-day consultation period with Eastman to develop and implement operational changes necessary to prevent future monitored violations of the NAAQS. These changes may include fuel switching to reduce or eliminate the use of sulfur-containing fuels, physical or operational reduction of production capacity, or other changes as appropriate. If a permit modification is deemed necessary, Tennessee would issue a final permit within the statutory timeframes required in Tennessee Comprehensive Rules and Regulations 1200-03-09, and any new emissions limits required by such a permit would be submitted to EPA as a SIP revision. EPA concurs and proposes to approve Tennessee's plan for meeting the contingency measure requirement in this manner.

## V. Additional Elements of Tennessee's Submittal

To verify that the 30-day limit is resulting in continued attainment of the 1-hour $SO_2$ standard in the Sullivan County area, Tennessee is establishing an additional safeguard within the nonattainment area by upgrading its existing $SO_2$ ambient air monitoring network in the Sullivan County area. TDEC has committed to deploy additional ambient air monitors within the nonattainment area[25] to characterize expected areas of maximum 1-hour $SO_2$ concentrations near the Eastman Chemical Plant. The State intends to designate the monitors as State/Local air monitoring stations in accordance with 40 CFR part 58 and locate the monitors as close as possible to the areas of expected maximum concentration. These monitors will be submitted for approval by EPA as part of the state's annual ambient air monitoring network plan.

## VI. Incorporation by Reference

[25] See email from TDEC to EPA Region 4, Air, Pesticides and Toxic Management Division, Air Director Beverly Banister on June 6, 2018 included in the docket for this proposal (ID: EPA-R04-OAR-2017-0626)

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 into Tennessee's SIP a natural gas fuel restriction, a new $SO_2$ emission limit and specified compliance conditions established in permits 966859F and 070072F for monitoring, recordkeeping and reporting parameters for emissions units at Eastman Chemical Company. Specifically, EPA is proposing to incorporate into the Tennessee SIP, a new 1,753 lbs/hr 30-day $SO_2$ emission limit and operating, monitoring, recordkeeping and reporting parameters all established at Conditions 1 thru 4 in Permit 070072F for Boilers 18-24 at B-83 and Boilers 30-31 at B-325 and, a natural gas fuel restriction for Boilers 25-29 at B-253 (after each natural gas conversion) established at Condition 6 in Permit 966859F. The $SO_2$ emission standards specified in each permit are the basis for the $SO_2$ attainment demonstration in the SIP. EPA has made, and will continue to make, these materials generally available through www.regulations.gov and at EPA Region 4 office (please contact the person identified in the "For Further Information Contact" section of this preamble for more information).

## VII. EPA's Proposed Action

EPA is proposing to approve Tennessee's $SO_2$ nonattainment SIP submission, which the State submitted to EPA on May 11, 2017, for attaining the 2010 1-hour $SO_2$ NAAQS for the Sullivan County Area and for meeting other nonattainment area planning requirements. EPA has preliminarily determined that Tennessee's nonattainment SIP meets the applicable requirements of sections 110(a), 172, 191 and 192 of the CAA and regulatory requirements at 40 CFR part 51. This $SO_2$ nonattainment SIP includes Tennessee's attainment demonstration for the Sullivan County Area and other nonattainment requirements for a RFP, RACT/RACM, NNSR, base-year and projection-year emission inventories, enforceable emission limits and compliance parameters

and contingency measures. Specifically, EPA is proposing to approve into the Tennessee SIP, Eastman Chemical's enforceable $SO_2$ emission limit and compliance parameters (monitoring, recordkeeping and reporting) from PSD construction permit 966859F (condition 6) and Permit No. 070072F (conditions 1-4) (see section IV.B.4.1).

## 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 Act and applicable Federal regulations. *See* 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. This action merely proposes to approve state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed 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);
- Is not an Executive Order 13771 (82 FR 9339, February 2, 2017) regulatory action because SIP approvals are exempted under Executive Order 12866;
- 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).

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 as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law.

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by Reference, Intergovernmental relations, Reporting and recordkeeping requirements, Sulfur oxides.

Authority: 42 U.S.C. 7401 *et seq*.

Dated: June 19, 2018.

Onis "Trey" Glenn, III

Regional Administrator,

Region 4.

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