MISSOURI
DEPARTMENT OF
NATURAL RESOURCES
Air Pollution Control Program

RECOMMENDATION FOR ADOPTION

MISSOURI STATE IMPLEMENTATION PLAN REVISION –

Interstate Transport Provisions for the 2015 Ozone Standard

On March 28, 2019, the Missouri Air Conservation Commission held a public hearing for the Missouri State Implementation Plan (SIP) revision titled – *Interstate Transport Provisions for the 2015 Ozone Standard*. A summary of comments received and the air program's corresponding responses is included on the following pages. Revisions were made to the proposed plan as a result of comments received.

The revised plan has not been reprinted in the briefing document due to its volume. However, the Executive Summary is included below for reference. The entire revised plan is available for review at the Missouri Department of Natural Resources' Air Pollution Control Program, 1659 East Elm Street, Jefferson City, Missouri, 65101, (573)751-4817. It is also available online at http://dnr.mo.gov/env/apcp/stateplanrevisions.htm.

The air program recommends the commission adopt the plan as revised. If the commission adopts this plan, the department intends to submit it to the U.S. Environmental Protection Agency for inclusion in the Missouri State Implementation Plan.

EXECUTIVE SUMMARY

The purpose of the State Implementation Plan (SIP) revision included in this document is to address Missouri's interstate air pollution transport obligations for the 2015 ozone National Ambient Air Quality Standard (NAAQS). Specifically, this SIP revision addresses Missouri's requirements under Clean Air Act (CAA) Section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS. This section of the CAA requires states to include adequate provisions in their SIPs to prohibit emissions that will contribute significantly to nonattainment, or interfere with maintenance, in any downwind state with respect to any NAAQS. These interstate air pollution transport obligations help ensure that emissions in one state are not causing or contributing to air pollution problems in another state, and are often referred to as good neighbor SIPs.

Missouri's good neighbor SIP under the 2015 ozone NAAQS follows the U.S. Environmental Protection Agency (EPA)'s four-step approach and corresponding memorandums for determining obligations for upwind states to limit transported air pollution to downwind states. The analysis and conclusions in this document stem largely from modeling performed by EPA to determine ozone concentrations across the country and the corresponding contributions from upwind states in the year 2023. This future year corresponds to the year before the attainment deadline for areas designated as moderate nonattainment areas under the 2015 ozone NAAQS. Based on this analysis, after implementation of all on-the-books control measures in Missouri and other upwind states, emissions from Missouri will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any downwind states.

Through the SIP revision and corresponding technical demonstration included in this document, the Missouri Department of Natural Resources' Air Pollution Control Program (air program) is requesting EPA to fully approve Missouri's SIP under CAA Section 110(a)(2)(D)(i)(I) with respect to the 2015 ozone NAAQS.

COMMENTS AND RESPONSES ON

MISSOURI STATE IMPLEMENTATION PLAN REVISION
INTERSTATE TRANSPORT PROVISIONS FOR THE 2015 OZONE STANDARD

The public comment period for the Missouri State Implementation Plan (SIP) revision titled *Interstate Transport Provisions for the 2015 Ozone Standard* opened on February 25, 2019 and closed on April 4, 2019. Revisions to the proposed plan were made as a result of comments.

The following is a summary of comments received and the Missouri Department of Natural Resources' Air Pollution Control Program's (air program's) corresponding responses. Any changes to the proposed plan are included in the response to comments.

SUMMARY OF COMMENTS: During the public comment period for the proposed plan, the air program received written comments from the U.S. Environmental Protection Agency (EPA), Associated Electric Cooperative Incorporated (AECI), Ameren Missouri (Ameren), and Dave Flannery of Steptoe Johnson on behalf of the Midwest Ozone Group (MOG).

COMMENT #1: AECI, Ameren, and MOG all submitted comments supporting Missouri's proposed good neighbor SIP for the 2015 ozone standard and the conclusion that that no additional emissions reductions beyond existing and planned on-the-books controls are necessary for Missouri to comply with CAA Section 110(a)(2)(D)(i)(I).

RESPONSE: The air program appreciates all the comments in support of Missouri's proposed good neighbor SIP for the 2015 ozone standard. No changes were made to the proposed plan as a result of these comments.

COMMENT #2: EPA commented that one of the statements in the background section of the proposed SIP revision regarding the NO_x SIP call and NO_x Budget Program was not entirely accurate. EPA stated that the NO_x SIP call was originally promulgated to address both the 1979 and the 1997 ozone standards; however, EPA stayed the implementation of the NO_x SIP Call for the purposes of addressing the 1997 standard. Therefore, when the NO_x Budget Program went into effect, it only addressed good neighbor obligations under the 1979 ozone standard.

RESPONSE AND EXPLANATION OF CHANGE: In response to this comment, the air program has revised the statements in the background section of the proposed SIP revision to more accurately describe which ozone standards the NO_x SIP Call and the NO_x Budget Program addressed.

COMMENT #3: EPA commented that one of the statements in the background section of the proposed SIP revision regarding the description of step 3 in EPA's 4-step process was slightly different than the language in EPA's guidance documents on the 4-step process. EPA provided the language from their guidance documents and recommended that the air program adjust the language in the proposed SIP revision regarding the description of step 3 so that it matches the language in EPA's guidance documents.

RESPONSE AND EXPLANATION OF CHANGE: In response to this comment, the air program has revised the language in the background section of the proposed SIP revision regarding the description of step 3 of the good neighbor SIP process in order to match the description of step 3 as provided in EPA's guidance documents.

COMMENT #4: EPA commented that one of the statements in the background section of the proposed SIP revision regarding the description of EPA's October 2018 memo was slightly different than the language provided in the memo. EPA recommended the air program revise the language in the proposed SIP revision to more clearly explain the flexibilities provided in the memo regarding the alternative methods for identifying maintenance receptors.

RESPONSE AND EXPLANATION OF CHANGE: In response to this comment, the air program has revised the language in the background section of the proposed SIP revision regarding the description of EPA's October 2018 memo to ensure the language in the SIP is not altering the meaning of the language provided by the EPA October memo.

Due to the similar nature of the following two comments, one response is provided for both comments.

COMMENT #5: EPA commented that although the summers of 2010 and 2011 were conducive to ozone formation in Michigan, the summer of 2009 was the fifth coldest summer on record in Michigan. EPA recommended that the air program provide additional support for the statement that the meteorology from the alternative base period of 2009-2011 as whole was conducive to ozone formation for the Allegan County, Michigan monitor.

COMMENT #6: MOG commented that although EPA offers the caution in their EPA October 2018 memo that the summer of 2009 was generally not conducive for ozone formation, the demonstration for this monitor does not rely on 2009 exclusively. MOG states that the alternative base period selected for the monitor also includes the average of the years 2010 and 2011, which are clearly are ozone conducive years.

RESPONSE AND EXPLANATION OF CHANGE: In response to these comments, the air program has revised section 3.5 of the proposed SIP revision to provide additional support in the demonstration showing that the alternative base period of 2009-2011 was conducive to ozone formation in Allegan County, Michigan. Daily temperatures, precipitation, and wind speed can all affect ozone levels. In general, warm dry weather is more conducive to ozone formation than cool wet weather. Wind speed can affect both the location and concentration of ozone pollution. Higher wind speeds in an area are less conducive to high ozone concentrations than low speeds because higher wind speeds tend to disperse ozone concentrations before they build up to higher levels that cause exceedances. A review of 2009 National Weather Service data from May through September (the high ozone season) from the West Michigan Regional Airport (KBIV) provides the following observations:

- There were 45 days where the high temperature reached 80 degrees Fahrenheit or greater;
- There were 97 days with no precipitation;
- There were 65 days where the average wind speed was 5 miles per hour or less; and

- There were 25 days during these months where all three of the above listed criteria for temperature, wind speed, and precipitation were met.

These observations show that although the summer of 2009 in Michigan was the fifth coolest summer on average for the entire summer, there was still a large number of days during the high ozone season where the meteorology was conducive to ozone formation. This supports the conclusion that the alternative base period, including a large number of days in 2009, was conducive to ozone formation. In order to address EPA's concerns about the proposed SIP revision's use of the words "as a whole" when referring to the meteorology from 2009-2011, the air program revised the language in the proposed SIP to state that two of the three years in the alternative base period (2010 and 2011) were highly conducive to ozone formation and that ozone conducive meteorology was also present during a large number of days from May through September of 2009.

In addition to including the supplemental analysis regarding the summer of 2009 in Michigan, the air program also added language to this section of the proposed SIP revision to include two additional observations to further support the conclusion that the alternative base period was conducive to ozone formation in the area surrounding the Allegan monitor. The first additional observation is an analysis showing that even if the 4th highest 8-hour ozone concentration from 2009 was ignored when computing the base year design value and the analysis only used the average of the 4th highest values from 2010 and 2011 to compute the base year design value (both of which had meteorology that was highly conducive ozone formation), the receptor would still demonstrate attainment in 2023. The second observation is that if the analysis used a 4-year average from 2009 to 2012 to compute the base year design value, the receptor would demonstrate attainment by 2023 under this scenario as well. This second observation explains that the summer of 2012 was an extreme outlier in the direction of highly ozone conducive summers. This was the year of the historic drought that plagued almost the entire Midwestern portion of the country. During that summer, monitors all across the Midwest including Missouri and Michigan recorded ozone concentrations among the highest in the past decade and the number of ozone exceedances was far higher than any recent year. The Allegan monitor recorded 36 exceedances of the 2015 ozone standard that summer compared to an average of six or seven exceedances in all other years from 2010 – 2017. Therefore, by using a 4-year average which includes the extreme outlier in the summer of 2012, it balances out any favorable meteorology from 2009. Then after adding in the summers of 2010 and 2011, which are both clearly ozone conducive summers, it clearly tips the balance towards highly ozone conducive meteorology for the alternative base period, and the use of this 4-year average to compute the alternative base period design value would still demonstrate attainment at the Allegan, Michigan receptor by 2023.

Due to the similar nature of the following two comments, one response is provided for both comments.

COMMENT #7: EPA commented that in Section 3.5 of the proposed SIP revision the air program should provide a stronger basis (such as public announcements or filings) for asserting that a number of power plants in the state are planned for retirement prior to 2023, but those retirements were not reflected in EPA's 2023 modeling. EPA stated that if such information is

not available, the air program should remove the table from the SIP. EPA also stated that if the air program keeps the table in the SIP, it would strengthen the demonstration if the air program provided a discussion regarding the anticipated generation shifting that will result to make up the lost generation from these plants retiring prior to 2023.

COMMENT #8: MOG commented that Missouri's plan was overly conservative because the plan relied on EPA modeling data that over-estimated NO_x emissions from electric generating units because the modeling did not consider the impact of the announced retirements of several coal-fired boilers that will occur in the next several years.

RESPONSE AND EXPLANATION OF CHANGE: In response to these comments, the air program reviewed the available data on the announced power plant retirements that were listed in the proposed SIP revision. Upon review, the air program notes that the owner of at least one of the units listed in the table of the proposed SIP revision had announced a planned retirement for the unit, but was recently denied regulatory approval to retire the unit, which means the retirement date for that unit is now uncertain. Additionally, the air program's intention with this section of the proposed SIP was to provide additional information regarding expected emission reductions that were above and beyond those reflected in EPA's modeling the air program largely relied upon in the analysis. However, this section of the SIP is not critical to the demonstrations and overall conclusions of the SIP, and is unnecessary to include after making the demonstration for the Allegan monitor based on the flexibility described in EPA's October memo. Therefore, the air program removed this section from the proposed SIP in order to eliminate the overly conservative nature of the demonstration and to address EPA's concerns.

COMMENT #9: EPA commented that the air program could strengthen the SIP by providing a demonstration showing that the emission rates used in EPA's 2023 modeling for power plants controlled with selective catalytic reduction (SCR) are reasonable future estimates, particularly for SCR-controlled units that have shown wide degrees of variability in NO_x emission rates in the past. EPA's comment specifically mentions two such sources with observed high year-to-year variability in ozone season NO_x emission rates, the Thomas Hill Energy Center and the New Madrid Power Plant.

RESPONSE: In response to this comment, the air program reviewed the reported ozone season NO_x emission rates from these two facilities since 2015, the initial implementation year for the Cross-State Air Pollution Rule (CSAPR). According to data from EPA's Clean Air Markets Division (CAMD), the units at these two facilities appear to have operated their SCR control technology during the regulatory ozone seasons (May-September) in 2015, 2017, and 2018. However, based on the reported emission rates in CAMD's system, the facilities do not appear to have operated their SCR controls during the regulatory ozone season in 2016.

CSAPR implementation originally began in 2015 after lengthy litigation where the Supreme Court ultimately upheld EPA's general CSAPR framework. During the first two years of CSAPR implementation (2015 and 2016), CSAPR's variability and assurance provisions did not apply. This means there was no surrender penalty if a state were to exceed it assurance level during these two years. Since 2015 was the first year of CSAPR implementation, there were no banked allowances at the beginning of the 2015 ozone season. This helped to ensure that NO_x ozone

season allowance prices in 2015 were sufficiently high enough to encourage SCR-controlled units to run their control technology to reduce their NO_x emissions during the 2015 regulatory ozone season. However, on December 3, 2015, EPA's proposed rulemaking for the CSAPR Update Rule was published in the federal register.[1] In this action, EPA proposed new NO_x ozone season budgets that would take effect in 2017 in order to help address good neighbor obligations under the 2008 ozone NAAQS. In the proposed rule, EPA solicited comment on a number of approaches for addressing the treatment of banked NO_x ozone season allowances that were expected to accrue during the ozone seasons in 2015 and 2016 for the purposes of compliance in 2017 and beyond, when the proposed Update Rule would take effect. EPA's proposed approach was to develop an exchange ratio at either two-to-one or four-to-one for allowances banked during the 2015 or 2016 ozone seasons. However, EPA also specifically solicited comment on an approach that would completely disallow the use of 2015 and 2016 banked allowances for the purposes of compliance starting in 2017, which was the same approach EPA took during the transition from the Clean Air Interstate Rule to CSAPR between 2014 and 2015. If EPA had finalized that approach, any banked allowances from 2015 or 2016 would have lost all value starting in 2017. This proposed rulemaking combined with a projection that over 200,000 NO_x ozone season allowances would be banked after the 2016 control period caused NO_x ozone season allowance prices to drop significantly before the start of the 2016 ozone season. These low allowance prices, combined with the fact that CSAPR's variability and assurance provisions were not in effect during 2016, created a compliance mechanism for SCR-controlled units to simply purchase allowances at low cost to cover emissions and comply with the rule as opposed to running their control technology, which would have been a far more expensive compliance strategy.

EPA's final CSAPR Update rule was published in the federal register on October 26, 2016 [2], which was after the end of CSAPR's 2016 regulatory ozone season. The requirements of the Update Rule went into effect in 2017 and included new, lower NO_x ozone season budgets for 22 states in the eastern half of the country. In addition to the lower budgets, the Update Rule also provided for the CSAPR variability and assurance provisions to take effect in 2017 and significantly reduced the number of banked 2015 and 2016 vintage year allowances that could be used for compliance in 2017 and beyond for these 22 states subject to the Update Rule. Since the implementation of the CSAPR Update Rule, the two units identified in EPA's comment have operated their SCR control technology during the regulatory ozone seasons. EPA's future year emission projections for EGUs in their 2023 modeling are based on an engineering growth analysis that EPA performed after evaluating on-the-books control requirements including the CSAPR Update Rule. Therefore, Missouri believes the future year emission projections that EPA developed for their 2023 modeling are reasonable.

The CSAPR's variability and assurance provisions provide a strong deterrent for sources that may wish to purchase allowances as their sole method to comply with the regulation. If a state exceeds it assurance level during a control period, then all units under a common designated representative that exceed their combined assurance level must not only surrender allowances to cover their emissions, but also surrender penalty allowances up to a ratio of 2-to-1. This means that units that exceed their individual assurance level may have to surrender up to three

1 80 FR 75706, December 3, 2015
2 81 FR 74504, October 26, 2016

allowances for every ton of emissions above the level. This provision in the rule makes this type of compliance strategy potentially very costly and likely unsustainable. This is further demonstrated by the fact that the units EPA identified have ran their control technology as opposed to purchasing allowances each year since the variability and assurance provisions of the CSAPR Update rule took effect.

Finally, the CSAPR Update Rule established the CSAPR NO_x Ozone Season Group 2 Trading Program. This is a cap and trade program specifically aimed at addressing region-wide good neighbor obligations for all states that are subject to the rule, albeit for a previous ozone NAAQS. In 2018, the Missouri Air Conservation Commission adopted an amendment to 10 CSR 10-6.374 to incorporate the CSAPR NO_x Ozone Season Group 2 Trading Program requirements into Missouri's SIP, and the air program has submitted that SIP revision to EPA for approval. The purpose of the program is to drive region-wide emission reductions using a market-based mechanism (allowances) that causes monetary value to be assigned for the permission to emit the pollutant of concern. Units where cost effective controls are available tend to over-control their emissions and then they sell their excess allowances to units where installing and operating additional control technology is more costly or uneconomic. This allows those units that over-control and sell their allowances to recoup a portion of the costs they incur to install and operate their new controls. This means that if a unit decides to comply with the rule by purchasing allowances from other units as opposed to installing and operating controls that reductions above and beyond what were required are occurring elsewhere in the region. If a unit in Missouri, which is located over 250 miles away from any of the nonattainment or maintenance receptors identified for further evaluation in the proposed SIP revision, were to purchase allowances to comply with the rule, then this likely means that emission reductions beyond what were expected will be occurring at locations that are closer to the areas of concern. Therefore, this would have an even greater impact in reducing ground-level ozone concentrations in these areas. This means the beneficial impact to the downwind areas, which is the purpose of the Clean Air Act's good neighbor provision, will be achieved regardless of the compliance strategy selected by individual units, especially units with such significant distance from the receptors of concern. No changes to the proposed SIP were made as a result of this comment.

Due to the similar nature of the following three comments, one response is provided for all three comments.

COMMENT #10: EPA commented that the air program should provide more technical and legal support in the SIP regarding the analysis of international contribution to the Allegan monitor, specifically why it would be appropriate to subtract 100 percent of the contributions from Canada and Mexico and two percent of the initial and boundary conditions when analyzing the 2023 design value at the Allegan receptor.

COMMENT #11: MOG commented that the Allegan monitor and others, such as Sheboygan, would certainly be in attainment of the 2015 ozone standard in 2023 if international contributions are considered, and that this is necessary to avoid over-control in upwind states. MOG also explains that if EPA were to promulgate a federal plan, the Supreme Court ruling in EME Homer City vs. EPA[3], prevents EPA from promulgating requirements that result in over-control in any

3 *EME Homer et.al. v EPA*, 134 S. Ct. at 1608

upwind state.

MOG stated that there can be no doubt that international emissions have a significant impact on ozone measurements at all monitors related to the Missouri Plan. MOG also provided additional data and analysis relating to the way that international emissions affect the Sheboygan County, Wisconsin receptor, and that consideration of international contributions to that receptor would change that receptor's status from nonattainment to maintenance in 2023.

RESPONSE AND EXPLANATION OF CHANGE: In response to these comments, the air program reviewed the data that MOG provided along with the all the memos that EPA has provided in relation to states' good neighbor SIPs for the 2015 ozone standard. The air program generally agrees with MOG's assertion that upwind states should be afforded the flexibility to consider international contributions when determining upwind state obligations under the good neighbor provision. However, EPA has not provided any clear guidance on what the agency believes is the appropriate method for states to consider international contributions in their good neighbor SIP analyses. This appears to imply that EPA may have some legal or policy uncertainty regarding this issue. Similar to the air program's response regarding the planned retirements, this section of the proposed SIP revision is not critical to the demonstrations and overall conclusions of the SIP, and is unnecessary to include after making the demonstration for the Allegan monitor based on the flexibility described in EPA's October memo. Therefore, the air program removed this section from the proposed SIP in order to alleviate any potential concerns that EPA may have in regards to approving Missouri's SIP with this discussion regarding international contributions still included.

COMMENT #12: EPA commented that the air program could further strengthen the SIP by including a comprehensive analysis of the existing NO_x emitting sources in the state, and providing an analysis of existing controls, cost of new controls, and the NO_x reduction potential for any new control options identified.

RESPONSE: In response to this comment, the air program considered the time and effort it would take to include an additional analysis such as this in Missouri's good neighbor SIP for the 2015 ozone standard. The air program believes that such a comprehensive analysis could take a year or longer and would require a significant amount of the air program's limited technical staff and resources to accomplish. This would divert time and efforts away from other air planning priorities, including those with statutory deadlines. It is challenging for states to conduct a rigorous in-depth analysis such as this given the short period of time between the availability of EPA guidance, transport modeling results, and the submittal deadline. The air program actively participates in numerous regional and national emission inventory and modeling platform development activities and complies with EPA's federal Air Emissions Reporting Rule. These activities help ensure that emission information from Missouri sources along with any known or planned controls or retirements are accurate in any regional or national inventory or modeling analysis EPA and other groups conduct.

Although providing such a rigorous analysis in this SIP may be helpful in providing additional support and weight of evidence, the current findings and analyses in the SIP that conclude that no additional reductions are necessary beyond known and planned control measures based on

EPA's 4-step process are adequately substantiated in the SIP revision. Therefore, no changes to the proposed SIP were made as a result of this comment.

COMMENT #13: Ameren commented that the air program should provide additional consideration in the SIP regarding the significant distance from Missouri sources to all of the receptors the air program identified for further analysis in the proposed SIP. They stated that all of these receptors appear to be much more heavily influenced by localized emissions that contribute to ozone generation.

RESPONSE AND EXPLANATION OF CHANGE: In response to this comment, the air program has included additional language in the introduction to Chapter 3 where the SIP identifies specific receptors for further analysis in order to include the observation of the significant distance between Missouri and the identified receptors. The air program also added language to the proposed SIP in the various sections of Chapter 3 to provide the approximate distance from Missouri to each receptor evaluated in this Chapter of the SIP.

Due to the similar nature of the following two comments, one response is provided for both comments.

COMMENT #14: Ameren commented that the air program should include a discussion that provides more weight to the significant in-state contributions to the receptors included in the evaluations of the proposed SIP revision. They stated that mobile sources are the largest source of local emissions that are contributing to the ground-level ozone concentrations at these receptors.

COMMENT #15: MOG commented that mobile source emissions are the dominant contributor to predicted ozone concentrations across the nation. MOG stated that the analysis they performed provides not only the significant relative contribution of mobile and local area sources to problem monitors, but also how a small reduction in emissions from these sources could bring about significant additional reductions in ozone concentrations. MOG states that due to the dominant role of the mobile source impact on ozone air quality, additional local mobile source controls in downwind states should be evaluated and implemented before requiring additional emission reductions from upwind states.

RESPONSE: In response to this comment, the air program reviewed the information provided by Ameren and MOG regarding the relative contribution from local mobile emission sources to the predicted ozone concentrations for the receptors the air program evaluated in the proposed SIP. The air program agrees local mobile source emissions are significant contributors to ozone formation at all of the receptors the air program evaluated. The air program also agrees that it is rational that upwind states should be afforded some flexibility in evaluating the potential for local controls that will have a much greater impact on downwind state ozone concentrations before determining obligations for distant upwind states. However, the statutory deadline listed in the Clean Air Act directs states to develop their SIPs under Section 110(a)(2), which includes the good neighbor provision, for any new or revised NAAQS within three years of the promulgation of the standard. In contrast, ozone nonattainment area plans that include the local control measures for nonattainment areas are typically not due until 4 to 6 years after the

promulgation of a new or revised NAAQS. Further, the decisions about local measures in nonattainment area plans are the primary responsibility of the state or local air pollution control agencies with jurisdiction in the nonattainment area, which makes it difficult for upwind states to determine what type of control measures may be implemented or feasible in downwind states before the statutory deadline for the good neighbor SIP. Therefore, although the air program generally agrees with the rationale of these comments, the addition of such a discussion in the SIP would be difficult to accomplish with any degree of certainty. Further, while the addition of such a discussion may add strength to the demonstrations and conclusions of the SIP, the air program does not believe the addition of such discussions are necessary to support the overall conclusions in the proposed SIP. No changes to the proposed SIP were made as a result of these comments.

COMMENT #16: Ameren commented that the air program should point out that Missouri's total projected contribution to the Sheboygan, Wisconsin receptor in 2023 is less than the amount needed for the monitor to come into compliance with the 2015 ozone standard, meaning even if Missouri had no contribution to this receptor, its projected 2023 design value would still violate the standard. Ameren then points out that the in-state contribution to this monitor is 15.73 ppb and border state contributions (IL and IN) are 16.20 ppb combined, these states contribute 43.86 percent of the modeled ozone concentration for this receptor in 2023. Therefore, the required reductions should come from these three significant contributors to achieve the needed 1.9 ppb reductions in ozone concentrations to attain the standard. They state that Missouri's 1.37 ppb projected contribution to this receptor pales in comparison to these three contributing states.

RESPONSE: In response to this comment, the air program reviewed the EPA modeling results for upwind state contributions with respect to the Sheboygan, Wisconsin receptor. The air program agrees with Ameren that Missouri's projected contribution to this receptor is insignificant when compared to the projected in-state and border state contributions. The air program also agrees that based on EPA's modeling results, even if 100 percent of Missouri's contribution were eliminated it would not be enough to bring this receptor into attainment in 2023. However, per the proposed SIP revision, EPA's August memo provides the rationale for a 2 ppb contribution threshold at step 2 for this particular receptor. Thus, the analysis in the proposed SIP revision eliminates this receptor from further analysis at step 2 of the 4-step process. Therefore, no additional discussion is needed to make the necessary demonstration for this receptor based on EPA's 4-step process. Further, the air program believes that the addition of such a discussion in the SIP could hinder EPA's future approval of the plan if they disagreed with the rationale of the requested additional language. Therefore, no changes to the proposed plan were made as a result of this comment.

Due to the similar nature of the following three comments, one response is provided for all three comments.

COMMENT #17: AECI commented that the air program should include Michigan's projected in-state contribution to the Allegan County, Michigan receptor before deriving any type of reduction obligation for any contributing upwind states in subsection 3.5.2 of the proposed SIP revision.

COMMENT #18: EPA commented that in subsection 3.5.2 of the proposed SIP revision, the air

program should provide additional support for concluding that Missouri's calculated share of upwind state emission reduction responsibility is sufficiently small and within a 5 ppb margin of error in the modeling. EPA states that the air program should further explain how the 5 ppb modeling error was derived as it does not match the state-specific or region specific performance statistics in the technical support document for EPA's updated 2023 projected ozone design values.

COMMENT #19: MOG commented that the air program's analysis of upwind state emission reduction responsibility in subsection 3.5.2 of the proposed SIP revision is overly conservative as it would provide the exact same level of treatment for maintenance receptors as for nonattainment receptors. MOG urged the air program to take a position that no additional control is needed to address a maintenance receptor if it is apparent that emission and air quality trends make it likely that a maintenance receptor will remain in attainment.

RESPONSE AND EXPLANATION OF CHANGE: In response to these comments, the air program reviewed the modeled upwind state contributions identified for the Allegan monitor and the corresponding derived upwind state reduction obligations in the proposed SIP revision. The air program believes that while consideration of in-state reduction obligations prior to determining upwind state reduction obligations is difficult to achieve due to statutory deadlines and jurisdictional issues, AECI's suggestion of including the in-state contribution in the derivation of the pro-rata share of reduction obligations among all contributing states from the proposed SIP revision would be feasible. However, as discussed below, the air program did not add Michigan's in-state contribution to revise the derivation of contributing state reduction obligations, and instead is revising the proposed SIP by removing this subsection.

In response to EPA's comment regarding the margin of error in the modeling that was stated in the proposed SIP, this figure was referring to the mean bias statistic reported for the Northeast, Upper Midwest, Ohio Valley, and Southeast climate regions in EPA's Air Quality Modeling Technical Support Document for the Updated 2023 Projected Ozone Design Values.[4] However, as discussed below, the air program is not adding this citation to the proposed SIP, and instead is revising the proposed SIP by removing this subsection.

In response to MOG's comment, Missouri agrees that the Clean Air Act includes two separate provisions, one to ensure no significant contribution to nonattainment and another to ensure no interference with maintenance. Missouri also generally agrees with the rationale in MOG's comment that it follows that states should be afforded the flexibility so that the method for determining any reduction obligations to address significant contribution to nonattainment should not be the same as the method for determining what (if any) emission reduction obligations are necessary to ensure an upwind state does not interfere with maintenance in a downwind state. Therefore, Missouri agrees that this subsection in the proposed SIP is overly conservative as it would use the same method for determining obligations for both nonattainment and maintenance receptors. In addition, as similarly stated in the responses regarding other sections of the proposed SIP revision, this subsection of the proposed SIP revision is not critical to the demonstrations and overall conclusions of the SIP, and is unnecessary to include after

4 Air Quality Modeling Technical Support Document for the Updated 2023 Projected Ozone Design Values, Office of Air Quality Planning and Standards, United States Environmental Protection Agency, June 2018 (page A-5)

making the demonstration for the Allegan monitor based on the flexibility described in EPA's October memo. Therefore, the air program revised the proposed SIP by removing this subsection in order to address all the concerns raised by the three commenters.

COMMENT #20: EPA commented that throughout the document, the air program uses the term "significant contribution threshold" or 'significant threshold", but EPA says that the SIP would more accurately follow EPA's guidance if the air program referred to all of these thresholds more generally as "contribution thresholds", because EPA does not intend for contribution thresholds alone to represent the level of a significant contribution.

RESPONSE AND EXPLANATION OF CHANGE: In response to this comment, the air program revised the proposed SIP revision to more accurately refer to the various thresholds analyzed as "contribution thresholds" as opposed to "significant contribution thresholds" or "significant thresholds".