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A-and-R-Docket@epa.gov
Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attention: Docket ID No. EPA-HQ-OAR-2020-0272

Dear Sir or Madam:

Enclosed please find the comments of the generation-owning subsidiary companies of the American Electric Power System (AEP Companies) on the *Revised Cross State Air Pollution Update Rule for the 2008 Ozone NAAQS*, proposed rule, published at 85 Fed. Reg. 68964 (October 30, 2020). The comments are being electronically submitted to the A-and-R Docket at epa.gov. Please include these comments in the official docket for this rulemaking.

If you have any questions concerning these comments, please contact me at (614)716-3771 or by email at saweaver@aep.com. The AEP Companies appreciate the opportunity to participate in this rulemaking effort.

Sincerely,

Scott A. Weaver
Director, Air Quality Services

Encl.

cc: Hooper.Daniel@epa.gov

**Comments of the Generation Owners of the
American Electric Power System on the
Revised Cross State Air Pollution Update Rule for the 2008 Ozone NAAQS
85 Fed. Reg.68964 (October 30, 2020)**

Docket ID No. EPA-HQ-OAR-2020-0272

On September 13, 2019, the United States Court of Appeals for the District of Columbia Circuit remanded to the Environmental Protection Agency (EPA) the 22-state program known as the Cross State Air Pollution Rule Update (CSAPR Update) for the 2008 Ozone National Ambient Air Quality Standards (NAAQS). *Wisconsin v. EPA*, 938 F.3d 303 (D.C. Cir. 2019) (*Wisconsin*). The court did not upset EPA's determination that the CSAPR Update program was a reasonable regional approach to the problem of interstate transport of ozone precursor emissions, specifically nitrogen oxides (NO_x) from electric generating units (EGUs) equipped with selective catalytic reactors (SCR), and did not overturn EPA's technical conclusions about the appropriate and cost-effective level of controls that could reasonably be implemented through optimizing the operation of those controls. The flaw identified by the court in EPA's justification for the program was its failure to assure that the significant contributions by upwind states would be eliminated by the earliest applicable attainment date for the 2008 ozone NAAQS in 2021. And based on EPA's assertion that the rule was a "partial" remedy for any significant contributions from upwind states, the court ordered EPA to examine whether its conclusion that operation of non-catalytic controls (SNCR) on EGUs was in fact not cost-effective, and whether additional reductions could be implemented at combustion sources other than EGUs (non-EGU sources) to further reduce upwind contributions of NO_x that affected downwind nonattainment areas.

The Revised CSPAR Update proposal is EPA's response to the decision in *Wisconsin* and related cases that questioned the adequacy of EPA federal implementation plan to address interstate transport of NO_x emissions. The proposal is flawed on both technical and legal bases. For the reasons explained in more detail below, we respectfully request that the agency withdraw its proposed rule and complete an accurate and well-informed analysis consistent with the remand instructions from the court in the *Wisconsin* case. Such an analysis must include: (1) a full and fair evaluation of whether there is any residual nonattainment with the 2008 NAAQS; (2) reassessment of reasonable contribution thresholds and source-specific analysis of EGU contributions to any residual nonattainment; (3) consideration of all effective measures to control local sources and expedited implementation of additional reasonable local measures to address any nonattainment or maintenance issues; and (4) realistic assessment of the achievability and cost of additional reductions and their impact on electric reliability in the upwind states.

Description of the AEP Companies and Their Communities

American Electric Power (AEP) is an electric utility holding company. AEP is based in Columbus, Ohio, and is focused on building a smarter energy infrastructure and delivering new technologies and custom energy solutions to our customers. AEP's approximately 17,000 employees operate and maintain the nation's largest electricity transmission system and more than 221,000 miles of distribution lines to efficiently deliver safe, reliable power to nearly 5.5 million regulated customers in 11 states. AEP also is one of the nation's largest electricity producers with approximately 30,000 megawatts of diverse generating capacity, including more than 5,300 megawatts of renewable generation. AEP's family of companies includes utilities AEP Ohio, AEP Texas, Appalachian Power (in Virginia and West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, Public Service Company of Oklahoma, and Southwestern Electric Power Company (in Arkansas, Louisiana and east Texas). AEP also owns AEP Energy, AEP Energy Partners, AEP OnSite Partners, and AEP Renewables, which provide innovative competitive energy solutions nationwide.

AEP's fossil generation-owning subsidiaries include AEP Generating Company, AEP Generation Resources Inc., Appalachian Power Company, Indiana Michigan Power Company, Kentucky Power Company, Public Service Company of Oklahoma, Southwestern Electric Power Company, and Wheeling Power Company (referred to hereinafter as the "AEP Companies"). The AEP Companies are directly affected by the proposed rule, which would impose unreasonable and unnecessary additional burdens on the operation of their fossil-fueled units beginning in the 2021 ozone season, by creating a separate "Group 3" NO_x ozone season trading program including states where fossil units owned by the AEP Companies are located.¹ AEP appreciates the opportunity to submit these comments.

The AEP Companies are among the leaders in the transition within the energy sector and we have established aggressive goals to reduce our reliance on fossil fuels, and transform our generation portfolio. In 2019, we revised our carbon emission reduction goals because we had already achieved significant emission reductions ahead of schedule. Our new 2030 goal is to reduce CO₂ emissions by 70% from a 2000 baseline. Through 2019, we achieved a 65% reduction in carbon emissions from our 2000 baseline. Our progress has been quicker than expected primarily due to lower utilization of coal generation accelerated by falling energy prices caused by

¹ The ozone season runs from May 1 to September 30 each year, and is subject to a separate NO_x emission allowance trading program under the current CSAPR Update rule for Group 2 sources. 40 CFR Part 97, Subpart DDDD. The new Group 3 program would include Indiana, Kentucky, Louisiana, Ohio, Oklahoma, Virginia and West Virginia, all states in which the AEP Companies have an ownership interest in fossil fueled generating units.

low natural gas prices and the growth of subsidized renewables with zero fuel cost. We expect our 2050 goal to exceed an 80% reduction in CO₂ emissions and achieve larger reductions – with an aspiration of zero emissions. We review these goals annually as public policies, regulations, resource plans and advancing technologies change. Since 2011, AEP has retired more than 8,600 MW of coal-fueled generation; by the end of 2020, an additional 1,111 MW will be retired. Within the next 10 years, we plan to retire an additional 4,264 MW when we retire the Dolet Hills Station in Louisiana, Pirkey in Texas, Northeastern Unit 3 in Oklahoma, Rockport Unit 1 in Indiana, Welsh Units 1 & 3 in Texas and the Cardinal Plant in Ohio. Recent plans submitted to the agency under other environmental requirements, if approved, would result in additional retirements before 2030. At the same time, we are continuing to grow our renewable portfolio. Our integrated resource plans suggest that this generation will include approximately 8,000 MW of wind and solar and 1,600 MW of new natural gas in our regulated utilities by 2030. These forecasted resource additions are projected for our regulated utility subsidiaries, and are ultimately subject to regulatory approval. Concurrent with this, we continue to grow our competitive renewable portfolio across the country.

Completing this transition not only relies upon regulatory approvals from state utility commissioners, but also permitting decisions by state and federal regulators, and open communications with the many stakeholders who regularly participate in those proceedings. Significant capital investments in our existing units, and our investments in new generation and transmission facilities may require multiple approvals, and project scope, budget, and schedules are directly impacted by the decisions of independent authorities.

We also support the concept of Just Transition. This concept acknowledges that the change to a cleaner energy future is not only an environmental issue; it is a social and economic issue that affects those who are most vulnerable. It suggests that when a generation unit is retired in a community, where it is often the largest taxpayer and employer, the decision should be accompanied by a plan to help the community rebuild the social systems lost by the plant retirement. When AEP Companies announce plans to retire generating units, we work with our employees to help them find new jobs within AEP or provide outplacement services to help them find new jobs if they cannot relocate. Our first concern is our people, and we are aware that plant closure decisions are life changing for employees.

In addition, AEP has a long history of pursuing and attracting economic development to our communities. This became more urgent when we started retiring coal plants during the past decade. Our economic development teams provide training and resources to local officials, giving them the tools to independently grow and diversify their communities. We also invest in local training and education programs that help people develop new skills needed in today's workforce. One of AEP's most significant efforts is Appalachian Sky, an initiative to attract the aviation and

aerospace industry to central Appalachia. Since 2017, this program has been helping revitalize some of the communities hardest hit by changes in the coal industry. A comprehensive workforce analysis found that coal industry workers have the skills that aerospace and advanced manufacturing companies need. Through this effort, several counties in Kentucky and West Virginia are certified as AEROready, meaning they are excellent locations for these types of businesses. AEP is making targeted efforts to help revitalize these states and diversify their economies to attract new industry and jobs, and to empower local leaders to take charge of rebuilding their communities. AEP's responsibility is to help build sustainable, vibrant communities and help them transition to a clean energy economy. When they succeed, we succeed.

Participation in Organizational Comments

The AEP Companies are members of the Midwest Ozone Group (MOG) and the Edison Electric Institute (EEI). The AEP Companies incorporate by reference, as if fully set forth herein, the comments filed by MOG.² The MOG Comments contain a highly detailed technical analysis and modeling information that refutes many of the fundamental premises underlying EPA's proposal, and are referenced throughout these comments.

As recognized in the comments filed by EEI,³ the electric power sector has demonstrated unparalleled success in reducing emissions of criteria air pollutants, including ozone precursors, and was responsible for only 4 percent of all combined ozone precursor emissions in 2019. NOx emissions alone have been reduced by 86 percent over the period from 1990 to 2019. Moreover, the electric sector is poised to play a significant role in lowering emissions from other sectors of the economy. One notable initiative is the role that electrification of transportation will play in reducing local and interstate emissions from the mobile source sector, including passenger vehicles, trucks, buses, and even heavy duty off-road equipment. While NOx emissions from the electric generation sector have been dramatically reduced from about 26 percent of total anthropogenic NOx emissions in 1990 to about 11 percent in 2019, mobile source emissions consistently represent over one-half of total NOx emissions over the same period. Flexible approaches to reducing electric sector emissions will be key to providing a clear pathway to electrify the transportation sector and achieve even greater environmental benefits.

EPA's Findings of Future Downwind Nonattainment Are Flawed

² *Midwest Ozone Group Comments on Revised CSPAR Update Proposal*, filed December 14, 2020 (hereinafter "MOG Comments").

³ *Comments of the Edison Electric Institute on the U.S. Environmental Protection Agency's Proposed Rule on Revised Cross State Air Pollution Rule Update for the 2008 Ozone NAAQS*, filed December 14, 2020.

As detailed in Section 2 of the MOG Comments, numerous flaws in EPA's technical analysis call into question its findings of future downwind nonattainment. The air quality model used is incapable of accurately assessing monitors at a land-water interface, such as the Connecticut monitors identified by EPA. Moreover, EPA did not even perform modeling for the year 2021, but instead unreasonably assumed that it could perform a linear interpolation from air quality modeling previously performed for the years 2016 and 2023 to arrive at an accurate representation for 2021. This assumption is incorrect. Even if such interpolations were acceptable, however, the air quality data relied on is influenced by known exceptional events that overstate ozone design values. In addition, EPA fails to account for international emissions, which have a far greater impact on the projected nonattainment and maintenance monitors than the interstate NOx emissions from the EGU sources affected by the proposed rule.⁴

To remedy these flaws, EPA must conduct accurate air quality modeling using a more refined 4 kilometer grid, exclude data influenced by exceptional events, and account for the influence of international emissions. Given the magnitude of the recognized impacts from exceptional events and international emissions, such modeling is unlikely to show nonattainment, and should be made available for public comment prior to finalizing this proposal.

EPA Should Conduct Source Apportionment and/or Raise the Threshold for Significant Contribution

EPA's proposal mistakenly presumes that further optimization of SCR controls is both achievable and will have a beneficial impact on downwind air quality. But EPA's own analysis suggests that as NAAQS become more stringent, a threshold for significant contribution from a neighboring state of one percent of the applicable standard may be inappropriate. Higher thresholds of either 1 or 2 parts per billion (ppb) have been endorsed in the agency's own guidance documents.⁵

As the analysis conducted by MOG has shown,⁶ raising the significance threshold to 1 ppb would remove only 5% of the upwind contributions from two affected states. Raising the threshold to 2 ppb would remove 25% or less of the upwind contributions from five additional states. Such an adjustment would concentrate emission reductions in the areas where they have the greatest impact on air quality.

⁴ *MOG Comments*, pp. 8-20, 29-35.

⁵ https://www.epa.gov/sites/production/files/2018-09/documents/contrib_thresholds_transport_sip_subm_2015_ozone_memo_08_31_18.pdf

⁶ *MOG Comments*, pp. 56-62.

Had EPA conducted any source apportionment analysis, the case for increasing the stringency of the program for EGU emissions would have become even less compelling. In the seven states whose contributions are less than 2 ppb at any downwind monitor, EGU emissions are responsible for 0.28 ppb or less of the total ozone concentrations at the downwind monitor. As the study performed for MOG demonstrates, further reducing EGU emissions in states with such minor contributions are among the least effective measures to improving air quality.⁷

Local Controls Are More Effective in Addressing Nonattainment and EPA Neglected to Assess All On the Books Controls Within the OTC

States within the Ozone Transport Region are significant contributors to the nonattainment monitors, and Ozone Transport Commission (OTC) member states have been working collectively to improve air quality in the region. However, as EPA itself has acknowledged,⁸ local source emissions have a greater impact per ton on ozone concentrations at the affected monitors than emissions in upwind states. Chief among the causes for high ozone concentrations are the higher mobile source emissions in the New York City area, “behind the meter” generation sources, peaking units, and other unique sources in the Tri-State area. A report from the OTC Stationary and Area Source Committee confirmed the large number of combustion turbines with extremely high emission rates operating within the local area.⁹ EPA has identified several examples of local sources whose emissions should be addressed, including simple cycle combustion turbines, municipal waste combustors, and distributed generation resources.¹⁰ While New York has proposed to take steps toward controlling these sources, the proposed implementation dates are in 2023 and later, not prior to the attainment date for the affected monitors.

As noted by the court in *Wisconsin*, a downwind state may not flout the attainment deadline, or procrastinate until the deadline approaches. *Wisconsin*, 938 F.3d at 316-317. Rather, those states have the first-order obligation to attain the NAAQS as expeditiously as possible.

In addition to requiring New York and others to expedite the implementation of future measures, EPA must give consideration to the totality of actions taken to control local sources before determining whether there will be future nonattainment that must be addressed by upwind states. A complete listing of such measures is recorded in the comments filed by MOG.¹¹ EPA’s

⁷ <http://www.midwestozonegroup.com/files/IndependentSector-SpecificSourceApportionmentModelingofthe2017CrossStateAirPollutionRuleModelingPlatform.pdf>

⁸ [http://www.midwestozonegroup.com/files/2018_05_14_EPA_OAOPS - Analysis of O3 Trends in the East in Relation to Interstate Transport.pdf](http://www.midwestozonegroup.com/files/2018_05_14_EPA_OAOPS_-_Analysis_of_O3_Trends_in_the_East_in_Relation_to_Interstate_Transport.pdf)

⁹ http://www.midwestozonegroup.com/files/MOG_OTC_SAS_Public_09212018.pdf

¹⁰ *MOG Comments*, pp. 85-91.

¹¹ *MOG Comments*, pp. 37-47.

modeling must include these measures and assess their impacts, and be made available for public comment prior to finalizing this proposal.

The Revised CSAPR Update Requirements Are Infeasible and Threaten Electric Reliability

MOG's Comments include a technical report that assesses the feasibility of "optimizing" existing SCR controls to achieve and maintain emission rates of 0.08 pounds per million Btu during the ozone season beginning in 2021.¹² As reflected in that report, EPA's analysis is fundamentally flawed. First, EPA analyzed data representing the entire 22-state CAPR region, not the 12 states affected by the Revised CSAPR Update proposal. The 12 states affected by this proposal contain a much higher percentage of units firing bituminous coals. These higher sulfur coals also have inherently higher NO_x emission rates. Attempting to increase NO_x removal by injecting additional ammonia has adverse impacts on ammonia slip and increases deposits of ammonium bisulfate on downstream equipment. Load-following operations at these units may also increase NO_x emission rates, as ammonia flow must be reduced to prevent catalyst deposits.

EPA's costing methodology does not use the incremental cost of lowering NO_x from the third-lowest ozone season rate to a target with margin – which affects the 90% threshold significantly. The alternative analysis conducted for MOG calculates a marginal incurred cost at the 90% threshold of \$2,816 /ton, exceeding EPA's estimate by 75%.

As discussed in the MOG technical report, there are four maintenance and operation activities for existing SCR process equipment required to achieve high NO_x removal. These four maintenance and operating actions are (a) tuning of ammonia injection grid hardware, (b) replacement and repair of cleaning hardware such as acoustic horns and sootblowers, (c) cleaning of installed catalyst to remove accumulated fly ash, and (d) replacement or addition of catalyst. As discussed in detail in the technical report, three of these four activities require extended planning or procurement that, with rare exceptions, will not be able to be implemented within the 6-week period from the March 15 issuance date of the final rule to the May 1 beginning of the 2021 ozone season.¹³

In addition to these technical limitations, EPA has proposed to constrain the availability of banked allowances by converting Group 2 allowances to a limited number of Group 3 allowances. EPA proposes to convert the Group 2 allowances banked during 2017-2020 by sources within the 12 states included in the Group 3 program into no more than 21,022 allowances that can be used in the Group 3 program.¹⁴ EPA maintains that this limited ability to rely on banked allowances is

¹² *MOG Comments*, Ex. B.

¹³ *Id.*

¹⁴ 85 Fed. Reg. 69018

necessary to maintain the program, but this limited bank provides no greater flexibility than the assurance provisions. The assurance provision were designed to accommodate only normal year-to-year variability caused by weather, unit outages, and other changes in electricity demand. They are insufficient to assure a smooth transition toward the significant reductions below 2019 emission levels required by the Revised CSAPR Update proposal. Given the realities affecting the ability of sources to actually achieve the 2021 and 2022 budgets within the period allowed under the rule, a mechanism similar to the compliance supplement, an in-lieu fee, or a more generous conversion of Group 2 banked allowances should be provided.

EPA also announced a dramatic change in the way retired units are treated for the future years (beyond 2021) in the proposed rule.¹⁵ EPA would account for scheduled fleet turnover by eliminating emissions from units scheduled to retire and adding emissions for new units coming online. Although EPA states that this does not amount to the imposition of a more stringent standard on the affected units within a state that is exactly what results from this change in policy.

Indiana is a state that is particularly adversely impacted. EPA adjusts for six unit retirements and Indiana's ozone season state budget is reduced by over 2500 tons in a single year. By 2024, total ozone season NO_x emissions in Indiana are reduced by 43% from 2019 levels. This corresponds with a precipitous drop in energy production from 38.4TWh in 2023 to 33.8 TWh in 2024 as a direct result of the assumed unit retirements in Indiana.¹⁶ The changed policy affecting unit retirements means that existing units will not be able to "make up" the generation formerly supplied by other covered units, particularly in the later years of the program. In fact, sufficient resources may not be available unless currently planned projects receive timely and complete approvals. Eliminating those emissions from the program has dramatic adverse impacts on states where multiple unit retirements occur simultaneously.

Conclusion

EPA modeling projections show that ozone precursor emissions from EGUs will continue to decline even in the absence of the proposed Revised CSAPR Update. EPA's conclusion from just three years ago that SCR operations are fully optimized at emission rates of 0.10 pounds per million Btu is more accurate for the universe of existing coal units in the proposed Group 3 area than the unsupported claims that emissions can be reduced to 0.08 pounds per million Btu and even lower, particularly at units burning locally mined bituminous coals. Further reductions in NO_x emissions are even more difficult to achieve based on the increasingly prevalent need for coal units to operate in a load-following mode at lower capacity factors. Many units with an SCR

¹⁵ 85 Fed. Reg. 68964 at 69007-8

¹⁶ EPA-HQ-OAR-2020-0272-005, Appendix F

cannot achieve a 0.08 lb-NO_x/MMBtu rate at lower load levels due to operational restrictions to prevent ammonium bisulfate build up on the catalyst.

EPA should perform fully informed and accurate modeling to determine whether any areas will not attain the 2008 ozone NAAQS by 2021. It must incorporate a fair assessment of local controls that are “on the books” as well as eliminate data associated with exceptional events like wildfires and other infrequent natural events that impact air quality. International emissions also are playing an increasing role in poor air quality, and states are authorized to exclude them when developing their state implementation plans. EPA must also properly exclude impacts associated with these emissions.

Source apportionment should also be performed so that attention is focused on measures that will have the greatest impact on downwind air quality. EGUs have already reduced their NO_x emissions by 86 percent and currently contribute less than 4 percent of total anthropogenic ozone precursor emissions to the national inventory. Additional reductions will occur in connection with unit retirements, but EPA’s proposal to eliminate these emissions from state budgets in the year the retirement occurs will compromise the stability of the electric grid and the flexibility of this trading program.

AEP appreciates the opportunity to participate in this rulemaking and urges EPA to carefully consider these comments. Please contact Scott Weaver at (614) 716-3771 or saweaver@aep.com if you need any additional information regarding the comments.