

WRITTEN STATEMENT OF AMERICAN ELECTRIC POWER

BEFORE THE SENATE ENVIRONMENT AND PUBLIC WORKS' SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR SAFETY:

“OVERSIGHT: EPA’S PROPOSAL FOR FEDERAL IMPLEMENTATION PLANS TO REDUCE INTERSTATE TRANSPORT OF FINE PARTICULATE MATTER AND OZONE”

July 22, 2010

American Electric Power (AEP) appreciates the opportunity to submit the following written statement on EPA’s proposed Transport Rule to the Senate Environment and Public Works’ Subcommittee on Clean Air and Nuclear Safety.

AEP is one of the nation’s largest electricity generators -- with nearly 38,000 Megawatts (MW) of generating capacity -- and serves more than five million retail consumers in 11 states in the Midwest and South Central regions of our nation. AEP’s generating fleet employs diverse energy sources – including coal, nuclear, hydroelectric, natural gas, oil, and wind power. Most importantly for today’s hearing, though, approximately two-thirds of our generating capacity utilizes coal to generate electricity.

AEP’s Current Efforts to Achieve Substantial Emissions Reductions

AEP has achieved very substantial SO₂ and NO_x reductions over the last two decades. Our efforts began with an ambitious effort to cut SO₂ and NO_x emissions in the 1990’s under the Acid Rain program. The past decade has seen a continuation of this program to transform our fleet of coal-fired generating units. This transformation included the installation of state-of-the-art control technologies at many of our generating stations in order to meet the steep NO_x reduction requirements of the NO_x SIP Call in the early part of the decade. It has continued with a third wave of emissions controls being installed to achieve additional NO_x and SO₂ reductions required under the Clean Air Interstate Rule (CAIR), which EPA is now proposing to replace.

Over the past ten years, AEP has invested over \$5 billion in emissions control equipment on our coal units to reduce SO₂ and NO_x emissions and comply with the NO_x SIP Call and CAIR programs and has spent several additional billions of dollars on low sulfur fuel, chemical reagents, and other pollution control O&M costs. As a result of these efforts, over the last 12 years, our annual SO₂ emissions have declined by 775,000 tons (63%) and our annual NO_x emissions have declined by 450,000 tons (79%). These substantial reductions have occurred while AEP has continued to meet increased load demand over the long-term. Most of these reductions have occurred in the Eastern portion of the AEP system. About 80% of AEP coal-fired capacity is located in AEP's eastern footprint, which includes coal-fired plants in Virginia, West Virginia, Ohio, Kentucky, and Indiana. SO₂ and NO_x emissions have been reduced at AEP plants in these states by 64% and 84%, respectively, in the last decade. As a result of all of these pollution control investments, about 2/3 of the AEP Eastern coal-fired fleet is now equipped with the most advanced SO₂ controls – that is, Flue Gas Desulfurization (FGD) which reduces SO₂ emissions by about 95%. Similarly, about 3/4 of the AEP Eastern coal-fired fleet is equipped with the most advanced NO_x controls, that is, Selective Catalytic Reduction (SCR) which reduces NO_x emissions by about 90%. All of these units are located in States that would be required to make additional immediate reductions under EPA's Proposed Transport Rule.

We expect this transformation of our coal fleet to continue in the coming decade. In addition to EPA's Proposed Transport Rule, we currently have requirements to reduce SO₂ and NO_x emissions further at units that are regulated under the Clean Air Visibility Rule. We are also moving forward with emissions reduction projects to meet our obligations under the consent decree that AEP entered into with EPA and other litigants related to the New Source Review provisions of the Clean Air Act. While considerable uncertainty exists over the timing and form of other future regulations, we know that EPA is actively pursuing additional programs to reduce emissions, including a new rule to address mercury and other hazardous air pollutants, and the establishment of more stringent national ambient air quality standards. Although we are committed to working with EPA in the development of future control requirements, we have concerns about

the time frame for compliance with these multiple and overlapping programs, as well as the stringency and structure of the underlying regulatory requirements. Some of those concerns are:

- The cumulative costs of multiple requirements and their impacts on our customers;
- Immediate deadlines that do not take into account the need for economic recovery in our service territories;
- The risk of stranded investments that may result from installation of expensive pollution control equipment in order to meet near-term environmental regulations which are effectively overridden by future EPA standards;
- Lack of coordination of the control requirements imposed under future regulatory programs;
- Potential adverse impacts on grid reliability due to wide-scale unit outages required to install emission controls as well as a large number of unit retirements within a short compliance time frame;
- The significant new investments that may be required by non-air environmental programs including EPA's recently proposed rule for disposal of coal combustion by products, EPA's revisions to cooling water intake rules, and its initiative to update its steam-electric effluent guidelines; and
- The potential investments required to meet new EPA greenhouse gas regulations and/or new federal climate legislation should it pass Congress.

This cumulative cost exposure is raising significant concerns about the economic viability of a large number of existing coal-fired units, as well as potential impacts to grid reliability and imposition of substantial increases in retail electricity prices on

consumers. No evaluation of these potential cumulative impacts has been undertaken. Instead, EPA has engaged in only piecemeal examination of individual rules, and ignored the sustained economic pressures created by these increasingly stringent requirements.

Taking all of these issues into consideration, the transformation that we see in the coming decade could be very different from the last. This past decade saw the installation of emissions controls on many units on the AEP fleet as well as across the country. Those installations preserved the value of capital already invested, created new jobs, and produced significant environmental benefits. As the first phase of CAIR went into effect during 2009 and 2010, amid some of the most difficult economic times our country has faced, our customers have shouldered the cost increases associated with these significant investments. The recovery in the Midwest and South Central regions has not yet begun, and the prospects for recovery would be impaired by additional EPA regulations that do not carefully balance the twin goals of environmental and economic progress.

This coming decade may see more decisions to retire some units in addition to adding controls on other units. In fact, some companies have already made announcements about plans to retire older, smaller coal-fired units in the face of ever-increasing environmental obligations. These retirements often eliminate the best-paying jobs in relatively rural regions where there is little prospect for the replacement of those jobs, and threaten state and local governmental budgets that rely on tax revenues from these facilities and their employees. But the impacts go well beyond these local concerns. These retirements also can have significant impacts on the reliability of the electric grid. The key to our ability to manage effectively this significant transition will be the timing and achievability of the compliance obligations and the flexibility for complying with the control requirements of the programs. New Clean Air Act rules that achieve environmental objectives with reasonable schedules and compliance flexibility could be extremely helpful to protecting the environment without unduly hurting American workers and delaying our economic recovery.

The Proposed Transport Rule

Unfortunately, EPA's Transport Rule as currently proposed does not appropriately balance environmental and economic objectives. While we commend EPA for retaining some of the flexibility of intrastate and regional emissions trading of SO₂ and NO_x, the timing of the reduction requirements, the relative inflexibility of other provisions of the rule, and the stringency of the emission reductions, particularly as it applies to SO₂, would very substantially increase the cost of compliance and could likely have significant adverse impacts on reliability and the regional economy. AEP is particularly concerned about the following provisions:

SO₂ and NO_x Requirements in 2012 are Too Soon and Infeasible

One of our greatest concerns with EPA's proposed Transport Rule is that the schedule for implementing the new program's more stringent emission caps is too fast. Under the proposal, the Phase I caps apply at the beginning of 2012 and the even more stringent Phase II caps apply at the beginning of 2014.

Assuming the proposed rule goes final a little less than a year from now (i.e. EPA's current schedule is Spring of 2011), Phase I of the program would allow **only** a little more than **6 months** in total to implement the new emission budgets, establish emission trading programs **and** for companies to make the needed investments to comply with these new limits.

Six months, let alone a year or two, is not nearly enough time for this. Having brand new emission caps, state budgets and allowance allocations in 2012 creates major logistical challenges for the electric power sector and for the states that must implement the programs. Companies will not have sufficient time to design, permit, fabricate, and install emissions controls that may be necessary for meeting the new reduction requirements. Moreover, additional time is necessary to coordinate installation of major pollution control equipment during spring and fall outage schedules to ensure reliability of the entire utility system. While the EPA claims that the Phase I will require little

investment in the way of new controls, its assumption is predicated upon high level modeling and not the actual physical, contractual and financial constraints at these facilities during such a short time frame. This very short time frame is made worse by the constraints placed on emissions trading – assuming that this option is even adopted for implementing the reduction requirements. Notably, the constraints on trading will effectively limit a company's ability to achieve compliance in the least cost manner, and hence drive up the compliance cost of the program.

Simply put, EPA needs to provide more time for the full implementation of the new Transport Rule. At the very least, EPA should keep in place for at least several more years the existing CAIR program. The SO₂ and NO_x reduction levels of the CAIR program were set at levels that EPA determined were appropriate to remedy interstate transport problems for both the ozone and fine particulate matter standards. Under this approach, Phase I of the Transport Rule would not begin until 2014 or 2015. This extra time would provide additional time for companies to install the new control equipment to meet additional reduction requirements of the Transport Rule and for States to adopt and begin to implement this new control program.

Furthermore, the proposed timeline for implementation is inconsistent with past multi-pollutant reduction programs. Congress, for example, provided almost a decade to implement in two phases the SO₂ and NO_x reductions mandated under the Acid Rain program. Similarly, EPA established a two-phase program for achieving the reduction obligations under the CAIR program. The Phase I deadlines for CAIR allowed almost five years from promulgation of the final rule until the first compliance year for SO₂ and almost four years for NO_x. Similarly, EPA adopted the NO_x SIP-Call program in September 1998, allowed States a full year until September 1999 to submit implementation plans, and did not apply the NO_x control requirements until May 2003, over 4 ½ years after EPA promulgation of the final rule.

Timing of Phase II SO₂ Caps is also Too Soon and the Caps are Very Stringent

The SO₂ caps in 2014 are significantly more stringent than those in 2012 for about half of the States covered under Transport Rule.¹ These States are ones most reliant on coal and face the major portion of the compliance burden for limiting SO₂ emissions. A 2014 deadline for a second phase of SO₂ reductions further complicates the planning and logistical challenges for compliance. In particular, the SO₂ budget limits in Eastern states which have AEP coal-fired power plants (*i.e.*, Virginia, West Virginia, Ohio, Kentucky and Indiana) are very stringent. The tonnage SO₂ limits in these states amount to an average rate of approximately 0.20 to 0.30 lbs SO₂ per million Btu, which can only be just attained by a scrubbed power plant using higher sulfur coal removing about 95% of the SO₂ from the flue gas. (Note: 95% is the current maximum level of removal that most retrofit scrubber designs for existing units can reliably and consistently achieve on an annual basis). As such, these limits would require most of AEP's coal-fired power plant units in these states to either to install FGD, switch to natural gas or retire early in order to comply.

Retrofitting additional scrubbers throughout the Phase II states by the beginning of 2014 is infeasible given that the typical time frame to design, permit, fabricate, and install such major pollution control equipment in our experience has taken more than three years. Even a three-plus-year time frame may be optimistic, given that most other utilities in the East will also be effectively required to install scrubbers over the exact same time frame. A number of different utilities installing scrubbers at many different units over the exact same time frame could severely constrain supplies of materials, skilled labor and engineering talent, thereby driving up costs and lengthening the timeline for project completion. Further, most of the coal capacity retrofitted will be older, smaller coal units. Older and smaller capacity units often have space and design constraints and thus typically have a much greater retrofit difficulty given that they were not designed originally for back-end pollution controls. Finally, there are many other logistical challenges that AEP and other companies would need to address. Notable examples include scheduling outages for making final scrubber connections to the

¹ Specifically, 13 States, out of the 28 States covered under the proposed Transport Rule, would be subject to more stringent SO₂ reduction requirements in Phase II that starts in 2014.

generating unit,² as well as getting landfill, waste water and other permits related to the handling and disposal of scrubber waste generated by the new scrubber. In addition to the short time frame, obtaining these new permits is complicated by the pending EPA initiatives to regulate coal combustion residues and update its steam-electric effluent guidelines.

Given that these rules were only proposed a few weeks ago and are very detailed and extensive, AEP has not yet had a chance to do a detailed analysis of our likely compliance options and choices to meet the budget targets. However, our initial analysis suggests that the proposed Transport Rule, combined with all of the other EPA rules for regulating coal combustion residuals, mercury, other hazardous air pollutants, and CO₂, would likely make additional retrofit pollution controls such as scrubbers and SCR on older and smaller units uneconomic, even if they could be installed on time. In our case, 4000 to 6000 MW, or about 20-30% of our coal fired capacity in the Eastern states we serve could be retired instead of retrofitted by the 2014-15 time frame under all of these emerging rules.

There is no question that additional, costly control technology will be needed on many units across many utilities in the East and that our experience is not atypical. Similarly for other companies, the EPA rules may lead to decisions to shut down units prematurely or replace existing coal-fired generation with natural gas instead of incurring the cost of controls. Looking at this for the country's coal fleet, the combination of taking units out of service to install controls and retiring a significant number of units instead of installing controls presents a potential reliability concern of major significance for some regions of the country.

The Transport Rule Drastically Limits the Use of Banked Allowances, Resulting in Higher Than Necessary Costs

² Furthermore, additional time is necessary given that installation will need to be undertaken during spring or fall outage schedules, when electricity demand is not at peak levels.

In the interim CAIR program, EPA currently allows power plants to reduce SO₂ and NO_x emissions more than required in a given year and save or “bank” these emission allowances for use in a later compliance year. Emissions banking allows companies to comply at a lower overall cost because very high cost reductions and expensive pollution control equipment can be delayed until the most optimal time frame by utilizing banked allowances. More importantly, banking provides a net environmental benefit, because more emission reductions and hence environmental improvement occurs sooner.

Under the proposed Transport Rule, EPA has eliminated the use of previously banked SO₂ allowances after the end of 2011. As a consequence, the market price of SO₂ allowances has dropped to nearly zero and the SO₂ market has been effectively eviscerated. In effect, electric companies and their ratepayers and various market participants who have funded extra emission reductions and environmental improvement through advanced pollution control investments over the past several years have been penalized billions of dollars.

To minimize these adverse impacts, EPA should extend the current CAIR rule for several more years before beginning Phase I of the Transport Rule and allow for banked allowances to be used during this time period. The use of banked allowances could help smooth the transition to the tighter emission caps under the new Transport Rule, substantially reduce the costs of compliance, and help ameliorate retirement and reliability concerns. Also, the continuation of the CAIR program will ensure progress to attaining the air quality goals under the Clean Air Act. This is confirmed by the fact that the SO₂ and NO_x reduction levels of the CAIR program were set at levels that EPA determined were appropriate to remedy interstate transport problems for both the ozone and fine particulate matter standards.

The Transport Rule Provides No Certainty Regarding Future Reduction Requirements for SO₂ and NO_x Under Later EPA Rules

EPA has noted in the proposed rule that it plans to further revise the rule and tighten the utility SO₂ and NO_x emissions caps in future rulemakings in order to meet its new fine particle and new ozone standards.³ Without knowing what levels of reductions will ultimately be required and by when, the investment planning process for the current proposed Transport Rule is completely untenable. The risk of stranded or unnecessary pollution control costs increases dramatically. Such uncertainty also increases the probability that coal power plant units will be prematurely retired in order to avoid these investment and rate recovery risks.

EPA's Economic Analysis is Flawed and Deficient in Justifying the New Transport Rule

As a general matter, EPA's analysis fails to account for the impact of multiple uncoordinated rules and policies on the investment decisions being made at coal-fired power plants. As noted earlier in this statement, in addition to the proposed Transport Rule, coal-fired power plants face a yet to be determined set of additional SO₂ and NO_x reductions to meet new ozone and fine particulate standards, future mercury and hazardous air pollutant rules, recently proposed ash disposal rules, possible water rules and of course the prospects of the regulation of greenhouse gases under either existing Clean Air Act authorities or federal climate change legislation.

The impact of investments and additional operating costs that are needed to comply with all of these EPA rules and regulations in addition to the proposed Transport Rule is substantial and should be factored in, specifically when considering the retrofit pollution control versus retirement or conversion to gas decision. It is evident that EPA did not do this. In fact, EPA only predicts an additional 1.2 Gigawatts of retirements across the United States due to this rule. AEP alone projects it will have more retirements than EPA's projection for the U.S. in the 2014-2015 time frame.

In addition, while we have only just begun to assess EPA's detailed supporting analyses for the proposed Transport Rule given its length and complexity, our initial review with

³ See Proposed Transport Rule at pages 90-92.

regard to AEP assumed pollution control costs and unit information points to several significant errors, which will affect the accuracy of the state and individual plant level cost-effectiveness analysis and assumed emission budget findings:

- EPA assumes FGD, SCR and other pollution control costs that are substantially lower than AEP and industry's ACTUAL experience. For example, EPA assumes that an FGD on a 700 MW unit would cost ~\$240/kW (\$2008). However, recent bids and quotes received by AEP for new FGD installations suggests that the actual costs are likely to be more double the EPA assumption. Likewise, the SCR costs assumed by EPA are also lower than recent experience would suggest. These faulty assumptions drastically understate the costs and cost per ton of achieving the reductions and incorrectly skew EPA's analysis towards retrofit decisions instead of retirement decisions.
- Similarly, EPA uses an inappropriately low financial capital charge rate based on an unrealistic 30-year remaining book life for older coal units. For most of the older coal fired units that AEP will be considering whether to retrofit, repower or retire the remaining lifetime is much shorter - generally 10-15 years or less. As a result, EPA dramatically understates the annual capital charges of investments in these plants and the cost effectiveness of these emission reductions. This unrealistically skews the analysis towards retrofits instead of retirements and understates the overall costs of the proposed Transport Rule.
- EPA assumed that AEP will have scrubbed its 585 MW Muskingum River Unit No. 5 in Ohio by January 1, 2011 or only 6 months from now. However, while preliminary engineering was begun several years ago, there is no ongoing construction activity associated with this retrofit project. Even if engineering and construction recommenced today, the actual in-service date for the scrubber would still be at least three years from now. As such, the EPA assumption that this unit would be scrubbed by 2011 is completely infeasible and inaccurate.

- EPA assumes that FGD retrofits at the Kyger Creek (1,085 MW) and Clifty Creek (1,302 MW) Plants are currently online. However, the retrofit projects underway at these plants are not in service, are currently suspended and considerable financial investment and time will be needed to complete these projects.
- EPA assumes that the AEP Muskingum 1-4 units (830 MW) are able shift to lower sulfur coals in its analysis (1.0-1.4 lb-SO₂/MMBtu). However, these units are wet bottom / cyclone-fired boilers, which cannot tolerate most low-sulfur Eastern coals due to their high ash fusion temperatures. Thus, this is a very unrealistic assumption.

Note: Similar to other utility companies, AEP is only beginning its review of the economic analysis and will no doubt have additional comments and corrections that it will be submitting to EPA at the end of the comment period.

Multi-Pollutant Legislation

The combination of EPA's proposed transport rule and multiple other new air pollution regulations will likely result in a series of relatively inflexible and stringent air pollution regulations with inadequate timelines and high costs. As already noted, in addition to high costs borne by our electricity customers, these rules could also result in many premature plant retirements. This in turn would mean an attendant loss of skilled local jobs in some of the poorest rural counties in industrial states that are still reeling from the effects of the recession.

We believe however there is a sound remedy for this patchwork quilt of uncoordinated environmental regulations, which is for Congress to pass environmentally sound, flexible and cost effective multi-pollutant legislation. Senator Carper has provided leadership by introducing on February 4, 2010 the "Clean Air Act Amendments of 2010" (S. 2995) and John McManus of AEP provided our comments on this bill through testimony in March of this year. As indicated in this testimony, AEP does not support the Clean Air Act Amendments of 2010 as currently drafted, though we will reevaluate

the bill after it is amended. In particular, based on our concerns with the current bill that we identified in March, we recommend the following revisions to the bill:

- **Timing--** The bill's emission limits require ambitious SO₂ and NO_x reductions that are phased in too rapidly. Longer time frames would enable better planning and avoid premature plant shutdowns or excessively high costs for pollution controls due to supply constraints. We recommend that the first phase of the SO₂ and NO_x program begin in 2015 (instead of 2012) with the other phases also extended by three years to allow for a reasonable amount of time for compliance. Similarly, we recommend that at least five years be provided to comply with the mercury MACT provisions under the Act.
- **Safe Harbor from Additional Control Requirements--** In exchange for establishing clear, environmentally ambitious and sound emission targets, S.2995 needs to ensure that no additional SO₂ and NO_x reduction requirements are imposed by EPA through transport rules or section 126 petitions. Otherwise, the key attributes of multi-pollutant legislation - providing greater flexibility, compliance certainty and lower costs - are lost. By the time the bill's SO₂ and NO_x emissions caps are fully implemented, it is reasonable to assume that almost all existing coal-fired generating units will be either retrofitted with the full suite of control technologies including scrubbers and SCR or retired. The bill should provide some certainty that no further requirements will apply for these pollutants. The contribution of this emission source sector to attaining the air quality goals for ozone and PM_{2.5}, and reasonable progress toward national visibility goals will have been more than adequately addressed.
- **Coordination of Non-Mercury HAP Control Requirements--** A related issue is the regulation of non-mercury hazardous air pollutants (HAPs) emitted from power plants. The Carper bill, as drafted, does nothing to coordinate the reduction of these non-mercury HAPs with the stringent SO₂ and NO_x reduction requirements imposed on power plants under the bill. AEP believes this failure will unnecessarily increase control costs by substantial amounts and force

- **Greater Flexibility with Regard to Achieving Mercury Requirements--** The bill's goal of achieving a 90% reduction in mercury emissions from coal-fired power plants as a whole through source-specific performance standards may not be technically feasible at all coal-fired power plants. Moreover, the imposition of stringent mercury performance standards that would result from a 90% mercury emissions reduction – even if it were technically feasible – is likely to impose excessively high control costs to meet the mercury emissions standards at many coal-fired units. AEP believes that this approach is a recipe for increasing costs of electricity and forcing premature retirements. One possible solution to this problem – without compromising on the environmental goal of achieving a 90% reduction – is to provide greater flexibility in meeting the mercury performance standards. This can be achieved by adding provisions to the bill that would authorize emissions averaging over a broader geographic area (*e.g.*, across a state or specified geographic radius) and alternative emission limits in the event the installation of cost-effective mercury control technology does not achieve the applicable mercury performance standard. AEP urges the consideration of these flexibility mechanisms as an effective way to reduce greatly the costs while maintaining the environmental integrity of the program.

- **Fix Emission Allowance Allocations and Auctioning--** Auctioning of emission allowances simply increases overall costs to utilities and their customers with no attendant environmental benefits. We recommend that the auctioning provisions be deleted from the bill. Further, the bill prohibits the use of fuel adjustment

Conclusion

In summary, American Electric Power recognizes that there are many environmental drivers for additional emissions reductions from our coal-fired power plants and is already planning for many of those reductions. However, it is critical that any EPA rules, such as the proposed Transport Rule, be structured in a way to allow for cost-effective implementation on a reasonable schedule so as to minimize the impacts on our customers and on the reliability of the electricity grid. It is also critical that the emissions reduction levels of the program be set at levels that are technically feasible to achieve over the given time frame and are in fact necessary to fulfill the air quality goals and requirements of the Act. Moreover, it is critical that such a program provide some certainty over future compliance obligations, as AEP and other electric utilities continue the transformation of the electric generating fleet in this country. As it is currently proposed, the Transport Rule does not achieve these objectives.

Finally, AEP would urge the Congress to consider adopting a multi-pollutant control program that can achieve the anticipated emissions reductions from the electric power sector over the next decade in a manner that is consistent with all of these objectives. AEP believes that such legislation would be a big win for the environment, our local economies across the nation, and the American people.

AEP would like to thank the Subcommittee for the opportunity to present the views of AEP on this important issue.