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July 27, 2005

Mr. Michael Koerber, Executive Director  
Lake Michigan Air Director's Consortium  
2250 East Devon Avenue  
Suite 250  
Des Plaines, IL 60018

Dear Mr. Koerber:

**Re: Electric Generating Unit White Paper**

At the conclusion of the Regional Environmental Meeting held June 28 and 29 in Rosemont, you requested comments on any of the White Papers prepared by MACTEC by the end of July. While the Electric Generating Unit (EGU) White Paper did not receive many verbal comments at the June meeting, numerous individuals supplied comments at the March meeting where it was extensively discussed. This letter serves to document the comments of American Electric Power and Ohio Valley Electric Corporation on the (EGU) White Paper.

**On the Way Regulations Discussion**

The White Paper must be updated to reflect the final promulgated CAIR and CAMR rules. We also question the expected emissions shown in the table on Page 5 for both 2010 and 2015. We know this is based on IPM, but as has been commented on in other forums, numerous utilities believe that the IPM assumptions regarding the size of the allowance banks in 2007 is flawed to the high side for SO<sub>2</sub> and to the low side for NO<sub>x</sub>. This will result in more controls being implemented for SO<sub>2</sub> in the 2010/2011 time frame than IPM is projecting. Further, IPM goes by a pure least cost on the region basis for control implementation. We already know based on work being done by the SEMOS Technical Group that we are both a part of, that the IPM result of no SO<sub>2</sub> controls being implemented in Michigan in the early phases of CAIR are incorrect. As such, we believe that the table potentially overstates the actual emissions that will occur in each of the referenced years.

In addition, some thought needs to be given to developing a more reasonable scenario for the reductions that will occur and how to parse them out to the various future years.

## **Control Efficiency in a Retrofit Environment**

We note that the White Paper makes use of specific identified retrofits or new units to determine the retrofit reduction capabilities of various SO<sub>2</sub> and NO<sub>x</sub> control technologies under the different scenarios considered for implementation across the MRPO or larger region. Among those cases are the assumptions that every retrofit can be made to operate at these same control level or that the BACT level of control could be achieved in every retrofit situation. Our experience with SCR installations on the AEP System indicates that this assumption is incorrect at least as it applies to SCR capabilities.

AEP has installed as a retrofit, SCR technology on four of our six 1300 MW units, along with a number of large generating units. One of these 1300 MW units is an NSPS Subpart D unit and the other three units are SIP regulated Cell Burner units that have previously had successfully retrofitted Low NO<sub>x</sub> Burners into the existing Cell Burner configuration. Of these three units, two of the SCR retrofitted boilers are achieving NO<sub>x</sub> emission levels of approximately 0.06 lb/MMBtu over the 2004 Ozone Control Period and the 2005 Ozone Control Period to date. However, the third SCR retrofit unit has consistently operated at approximately 0.09 lb/MMBtu over the same period. The installed control equipment is identical on these units. The only notable difference is that the unit with the higher NO<sub>x</sub> emission rate is burning a lower sulfur content bituminous fuel, while the lower emitting units are burning a higher sulfur bituminous fuel. We would note that the plant where the higher emitting 1300 MW unit is located also has two other SCR controlled 800 MW units, which are operating at slightly below 0.06 lb/MMBtu over this same period of time.

There also appears to be an underlying assumption in the White Paper that existing NO<sub>x</sub> and SO<sub>2</sub> control equipment could “easily” meet the requirements of either of the alternative programs described in the White Paper. We believe that the White Paper should reflect that this is NOT the case. Some of the early SCRs installed for the NO<sub>x</sub> SIP Call were not designed to be operated for the entire year. These units will require upgrades to be able to stand up to annual operation. These upgrades will serve to increase the costs of control beyond just simple increases in operation and maintenance costs that seem to be assumed in this version of the White Paper.

The same holds true for scrubbers, although in a somewhat different way. For many of the Subpart D units utilizing first generation scrubbers, and at some early Subpart Da units, the existing scrubber was not designed to meet the extreme scrubbing efficiencies required to achieve the EGU-1 and EGU-2 scenario emission levels identified in the White Paper. This does not take into account the issue of fuel selection and availability that is being extensively covered by other comments. In order to meet the 95 to 98 percent removal efficiencies that would be required under the White Paper scenarios, equipment upgrades and potentially the outright replacement of some of the existing FGD systems may be required. These changes will greatly increase the cost of either of these programs.

An estimate of the number of potentially affected SCR and FGD units requiring upgrades, the estimated cost of the needed upgrades, and an estimate of the time required to implement the required upgrades must be addressed in the White Paper. These upgrades, assuming they could achieve the required

reduction levels, then need to be factored into the overall number of scrubbers and additional SCRs required for achieving these alternative scenarios in any given time frame.

### **Timing of Reductions and Installation Schedules**

AEP's experience with the current installation of 22 scrubbers and three additional SCRs between now and 2010, the first scrubbers being installed purely for acid rain allowance considerations, gives us a good perspective on how quickly a scrubber can be installed at a given facility. Site-specific installation impacts are not addressed in the White Paper. These factors can greatly impact the ability of a given company to meet any compliance date. While USEPA did consider this and other potentially constraining factors (material and labor availability to name two major factors) in establishing the deadlines for the CAIR program, the White Paper does not. It then goes on to suggest a 2008/2013 compliance date with control levels that are significantly more aggressive than the USEPA CAIR Program, without any discussion of how achievable these dates are from a material supply, permitting, design, and construction standpoint. We believe that for the White Paper to have any credibility, these factors, at a minimum, must be taken into consideration before any dates earlier than CAIR or emission limits more stringent than CAIR are advanced in the EGU White Paper.

We would offer that our experience that indicates for an "easy" retrofit to a site with a single unit and plenty of room to work in, a scrubber can be designed, permitted, and installed in approximately 38 to 42 months from the decision to proceed. However, for those sites that are constrained or contain multiple closely spaced units that are being retrofit, the time required for the retrofit grows to 50 to 60 months from the decision to proceed. Some additional time from the decision to proceed may then be required to properly "slot" the project due to the availability of design resources and construction labor. These schedules assume that a new stack would be required for the retrofit.

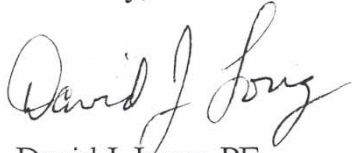
### **Conclusion**

For the White Paper to reasonably present control options to consider for SIP attainment Purposes, the options considered must be reasonable from both an emission achievability and a timing standpoint. If the issues discussed in these comments are fully considered and maintaining electrical grid reliability is also factored in, the options ultimately presented in the White Paper will be control options that can most likely be achieved. However, even if the options are technically achievable, they still may not make a meaningful difference in the attainment status of any of the residual nonattainment areas in the Midwest. If the solution does not make a meaningful difference, it should be disregarded for implementation. This should be noted in the EGU White Paper as it seems to be at least implied in most of the other White Papers under development, but is noticeably missing in the EGU White Paper.

Mr. Michael Koerber  
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If you or your consultant have any questions on these comments please feel free to contact me at 614-716-1245.

Sincerely,

A handwritten signature in cursive script that reads "David J. Long". The signature is written in black ink and is positioned above the printed name and title.

David J. Long, PE  
Senior Engineer

cc: P. A. Dal Porto  
B. H. Braine  
J. E. Hollback  
J. F. Butcher  
D. T. Fulkerson - Piketon  
N. N. Dharmarajan - Dallas