BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED NEW 35 ILL.ADM.CODE PART 225	)	**PCB R06-25**
CONTROL OF EMISSIONS FROM	)	**Rulemaking - Air**
LARGE COMBUSTION SOURCES	)	

NOTICE OF FILING

To:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

Persons included on the
ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that we have today filed with the Office of the Clerk of the Pollution Control Board **MIDWEST GENERATION'S COMMENTS.**

/s/ Daniel McDevitt
Daniel McDevitt

Dated: September 20, 2006

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MIDWEST GENERATION'S POST-HEARING COMMENTS

NOW COMES Participant MIDWEST GENERATION, LLC, pursuant to the Hearing Officer's Order (August 24, 2006) and 35 Ill.Adm.Code § 102.108, and offers the following comments on the above-captioned proposed rule:

I. INTRODUCTION

The Illinois Environmental Protection Agency ("Agency") has proposed that the Board adopt regulations requiring that emissions of mercury from coal-fired electric generating units greater than 25 MW be reduced by 90% from input coal or that emissions not exceed a rate of 0.0080 μ/m^3.[1] As the proponent of the rule, the Agency bears the burden of demonstrating that the proposed rule is technically feasible and economically reasonable. 415 ILCS 5/27(a) ("Act"); Board Order (June 15, 2006). The Agency stated that its purposes for proposing a rule so significantly more stringent than the Clean Air Mercury Rule ("CAMR"), 70 Fed.Reg. 28605 (May 18, 2005)), with which Illinois is required to comply pursuant to Section 111(d) of the Clean Air Act, 42 U.S.C. §§ 7401, *et seq.*, § 7411(d), is to protect the health of Illinois' citizens;

[1] Midwest Generation recognizes that the proposed rule includes alternative emission reduction requirements: the 90% reduction from inlet coal or the 0.0080 $\mu g/m^3$ emissions limitation. However, for purposes of simplicity, these comments will generally refer to the requirement as a 90% reduction unless otherwise explicitly stated. That is, reference to only the 90% reduction is not intended to imply that Midwest Generation does not realize that the emissions limitation is also available as a means of demonstrating compliance with the rule and is meant to include the emissions limitation where appropriate.

to comply with the state's obligation to develop a total maximum daily load ("TMDL") plan for mercury-impaired waterbodies in the state, as required by Section 303(d) of the Clean Water Act (33 U.S.C. § 1313(d)); and to comply with the state's obligations under CAMR. Technical Support Document ("TSD"), pp. 26-28; S Tr., p. 23 (June 12, 2006). The Agency has not established that any of these goals would be achieved through implementation of the proposed rule. It has not demonstrated that the proposal is technically feasible. It has not demonstrated that the proposal is economically reasonable. And it has not demonstrated that the rule accomplishes its stated purposes. In fact, Midwest Generation and others in the coal-fired power generation sector, including the Ameren family of companies, have demonstrated just the opposite: the proposal is neither technically feasible nor economically reasonable, and it does not accomplish its stated purposes. In short, the record in this matter shows that for costs far greater than CAMR, the proposed rule would provide no discernable benefit.

The Agency has not demonstrated that its assumed control technology, activated carbon injection using halogenated activated carbon[2] will reliably achieve required mercury emission reductions or that the monitoring technology will adequately assess compliance. As described by Ed Cichanowicz, HCI is still evolving, and the status of that technology is quite dynamic. While results of mercury removal demonstration tests are promising, as William DePriest of Sargent & Lundy observed, Sid Nelson's presentation of preliminary results from Midwest Generation's Crawford Generating Stations' mercury testing (Ex. 88) and subsequent retraction (PC 6287)

[2] Except when referring to the activated carbon injection system equipment only, Midwest Generation assumes that halogenated or brominated activated carbon ("HCI") is the sorbent necessary to effectively remove mercury at units burning subbituminous coal. Hereinafter, these Comments use the term "HCI" to refer to the activated carbon injection control system and the halogenated activated carbon as the control measure that is the basis of the Agency's proposal. Where only the control equipment is intended, the Comments will use the phrase "activated carbon injection system" or its synonym.

illustrates how dynamic the technology is. Mercury control does not enjoy the history and developed reliability of sulfur dioxide ("SO_2") and nitrogen oxide ("NOx") control systems. Further, the so-called "flexibilities" in the rule, apparently added by the Agency because of its own concerns about HCI, do not cure the problems with HCI and are not truly flexibilities. To achieve a 90% reduction, companies will have to target a level of reduction that is greater than 90%. Further, as Richard McRanie testified, the monitoring technology is not sufficiently developed to enable companies to even demonstrate that they are in compliance with the rule – or for the Agency to demonstrate that they are not. The rule as proposed, therefore, is not enforceable as a practical matter, and a company's inability to assess whether it is in compliance raises very serious fairness, planning, and legal concerns, including a lack of fair notice. Therefore, the proposed rule is not technically feasible.

The mercury rule as proposed by the Agency is not economically reasonable. The Agency claims that the rule will cost only $66 million per year and only about $32 million per year more than the CAMR. TSD, p. 159; Springfield Transcript,[3] pp. 212-213 (June 22, 2006). However, as Ameren testified, the rule is impossible financially because compliance with the rule will require more than the HCI the Agency assumed in its economic analysis in order to avoid the risk of noncompliance and because the short timeframe until compliance places a huge, front-end financial burden on the companies, to the tune of at least $1.3 billion more than the Clean Air Interstate Rule ("CAIR") (70 Fed.Reg. 25161 (May 12, 2005)),[4] and with no quantified benefits. Even in the limited instances that the Agency identified potential additional baghouse costs, its cost estimates were greatly understated. For instance, the Agency never

[3] Hereinafter "S Tr."

[4] USEPA's program for requiring regional reductions of NOx and SO_2; Illinois' proposal to comply with the CAIR is pending before the Board in Docket R06-26.

properly analyzed the real world costs of the proposal. For instance, it assumed a generic cost of $18.8 million[5] for Midwest Generation's hot-side electrostatic precipitators ("HS ESPs") at the Will County and Waukegan Generating Stations (TSD, p. 163, Table 8.9; S Tr., pp. 102-108 (June 21, 2006, p.m.); in actuality, the HS ESP at Will County alone will cost at least $67 million[6] (Ex. 115, p. 23). Moreover, the rule deprives companies of the possibility of CAIR co-benefits. Further, the Illinois mercury rule requires compliance with a draconian level of reduction with no flexibility, despite the Agency's protestations to the contrary, forcing the generators into the situation of installing more equipment than the Agency argues is necessary in order to ensure compliance. *See* the testimony of Michael Menne, C Tr., pp. 257-258 (August 15, 2006, a.m.); Ex. 77, p. 11. The Agency has grossly understated the costs of compliance with the rule. Additionally, the Agency seems immune to the fact that the rule places Illinois' power generators at a competitive disadvantage with power producers in other states because the implementation of the proposed rule will reduce generation for Illinois generators. Ex. 77, p. 10; C Tr., pp. 430-432 (August 15, 2006, p.m.)); Ex. 118, pp. 6-7. As James Marchetti pointed out, a reason why costs of compliance are not worse is because of a reduction in generation, which actually means there is a loss of revenues to Illinois power producers. Ex. 118, p. 6. The cost of compliance for Illinois generators will be greater than the cost of compliance for generators in other states. Ex. 118, p. 12. Thus, Illinois power producers will experience a loss in revenue as

[5] Average of the costs assumed for Waukegan and Will County in Table 8.9 of the TSD, p. 163.

[6] Based upon estimates recently performed by Shaw Stone & Webster, Inc. on September 15, 2006, for Midwest Generation's Powerton Station, costs of installation of the baghouse have increased 92% in the year since Sargent & Lundy provided estimates a year ago and to which William DePriest testified. A 92% increase for the Will County baghouse discussed here would raise the cost to approximately $129 million. This illustrates Mr. DePriest's point, also, that costs are constantly increasing and are increasing dramatically.

a result of their poorer competitive position. A loss of revenues translates into less profits and less tax base. Ultimately, the higher costs land in the pocketbooks of the consumer. The proven incentives of emissions trading, including over-compliance for the purpose of generating allowances to bank or sell, are lost in this proposal, further reducing the benefit of the rule. The Agency's assumptions underlying its 90% reduction proposal are short-sighted and do not realistically consider the actual economic and financial impacts to the power generation industry.

The Agency states that among the purposes of its proposal are to protect the health specifically of Illinois' citizens by reducing the deposition of mercury from Illinois power plants into Illinois waterbodies and, thereby, reduce the methylation of mercury and subsequent uptake of methylmercury through the food chain to predator fish and ultimately to Illinois citizens who eat such fish caught in Illinois waterbodies. This, in turn, would satisfy the requirement that Illinois develop and implement a TMDL addressing mercury for mercury-impaired waterbodies. TSD, pp. 26-27, 63; Ex. 8, pp. 3-5; S Tr., pp. 50-51 (June 14, 2006). The Agency has not demonstrated that these purposes of this rule, if adopted, will be fulfilled.

The Agency has not demonstrated that mercury emitted from Illinois power plants is deposited in Illinois, which is a necessary showing for reductions of mercury emissions from Illinois power plants to begin the chain of events leading to improvements in Illinois' mercury-impaired waterbodies... In fact, industry demonstrated that the Illinois mercury rule would result in an additional deposition reduction benefit of only 4%. Ex. 127, Slide 14.

The Agency has provided no evidence that any reductions in the level of deposition that may result from the rule would in turn be reflected in reduced fish tissue methylmercury levels in Illinois, the basis for the Agency's assumptions that the proposal would eliminate or at least substantially reduce mercury-impaired waters in Illinois and provide a significant, discernable

health benefit to Illinois residents. The Agency has not even identified any portion of the Illinois population that eats a significant quantity of Illinois fish. In fact, the Agency identified only one potential subsistence fisherman without identifying where this fisherman lives, in what waterbodies he fishes, and whether this apparently adult male fisherman is even a member of the population at risk from mercury. S Tr., p. 74 (June 16, 2006, p.m.) The record is unclear whether this single subsistence fisherman – or expanded to include his family – fishes in an impaired waterbody or that the fish that he consumes is subject to the state's restrictions, which are more conservative than the U.S. Environmental Protection Agency' ("USEPA") reference dose ("RfD") for methylmercury. S Tr. pp. 75-76 (June 16 2006, p.m.)

Another asserted purpose of the proposed rule is to satisfy the state's obligations under the CAMR. The Agency has not satisfactorily demonstrated that the proposed rule will accomplish this purpose. Jim Ross' description at the Chicago hearing regarding the margin of pounds of mercury under the cap assumes that HCI will reduce mercury emissions sufficiently to ensure that the state has a margin of compliance with the cap. As USEPA was not willing to make this assumption about the technology in adopting the CAMR, his explanation of the state's ability to demonstrate compliance with the emissions cap was not convincing.

The Agency has not met its statutory burden with respect to this proposed rule. It has not demonstrated that the rule is technically feasible or economically reasonable. Promulgation of the rule where there is such a lack of support would be arbitrary and capricious. Moreover, where the required limitations cannot be measured with the level of accuracy necessary to demonstrate compliance – or violation, affected companies' due process rights are violated under the U.S. Constitution. Further, the proposal suffers procedural, statutory, and constitutional infirmities in its inclusion of control measures for SO_2 and NOx. There is no foundation in the

record supporting SO_2 and NOx requirements, which violates procedural requirements under Section 27 of the Act and the Board's rules. Additionally, the Act prohibits the Board from regulating SO_2 beyond the level necessary to attain the National Ambient Air Quality Standards ("NAAQS") for SO_2 outside specified major metropolitan areas. Finally, the prescriptions on emissions trading included in the proposal violate the Supremacy and Commerce Clauses of the U.S. Constitution. Therefore, the Board should not adopt the rule.

If the Board declines to adopt the proposal, mercury emissions, nonetheless, would be adequately controlled in Illinois. As the Agency has stated (*see* Statement of Reasons, p. 18), the federal CAMR will be imposed in Illinois pursuant to the provisions of Section 111(d) of the Clean Air Act. 70 Fed.Reg. at 28607. The state is not subject to sanctions for failing to adopt a rule meeting the requirements of the CAMR. *Dynegy Midwest Generation, Inc., et al. v. Illinois Pollution Control Board, et al.* Case No. 2006-CH-213 (Circuit Court, 7th Judicial Circuit, Sangamon County, Illinois, May 1, 2006). Arguably, implementation of the CAMR would fall under the Agency's existing agreement with USEPA regarding the New Source Performance Standards. Midwest Generation recommends that the Board decline to adopt the proposal and allow the CAMR to apply in Illinois by operation of federal law or adopt the CAMR by reference.

In the alternative, if the Board believes it must adopt a mercury reduction rule because of the factually unsupported concern in the Record with so-called "hot spots,"[7] the Board should amend the proposal to provide for the installation of HCl only, to be operated in an optimal

[7] "Hot spots," for purposes of these Comments, is defined as those areas within close proximity to an emissions source where concentrations of the pollutant in question are significantly elevated compared to concentrations further away from the source. The Record does not demonstrate that there are mercury hot spots as defined here. While Midwest Generation acknowledges the issue, it does not concede the issue with the suggestion above regarding an alternative to the Agency's proposal.

manner but at a rate demonstrated not to interfere with compliance with particulate matter ("PM") and opacity standards. Further, Midwest Generation recommends that such a technology-based rule[8] be adopted as a state-only rule in order to ensure to USEPA that the CAMR cap will be met and to allow Illinois power generators to obtain whatever economic benefits they can through the federal cap and trade program, since CAMR would then apply in Illinois. The Agency has demonstrated, through the Joint Statements with both Ameren and Dynegy, submitted into the record at the Chicago hearing as Exhibits 75 and 125, and Mr. Ross' subsequent testimony that it continues to believe that the level of reduction achieved by HCI is 90%. If the Agency and Board are convinced that the implementation of HCI alone is sufficient to achieve the purposes sought by the Agency, then requiring only the technology comprises a sufficient rule, while the benefits of the CAMR will accrue to the state and without the significant risk to sources subject to the rule if HCI alone is not sufficient.

II. THE RULE IS NOT TECHNICALLY FEASIBLE

Section 27 of the Act requires that the proponent of a rule of general applicability demonstrate that the rule is technically feasible. "Technically feasible" is defined as the determination that the rule is "reasonable and capable of compliance by a substantial number of the individual units in the state . . . by the specified deadlines." *Commonwealth Edison Co. v. IPCB*, 25 Ill.App.3d 271, 281-282 (1st Dist. 1974). The Agency has not demonstrated that the proposed mercury rule is technically feasible.

[8] Units with HS ESPs should be exempted from the rule in the same manner as 90 MW units in Section 225.233(c)(1)(B).

A. The Agency Has Not Demonstrated That the Proposed Rule Is Technically Feasible.

The Agency's technical basis for proposing a rule that requires a 90% reduction in emissions of mercury from coal-fired power plants is found in the TSD, James Staudt's written testimony (Ex. 50), and his responses to questions at hearing (*see generally* Staudt, S Tr. (June 21, 2006, p.m.). Dr. Staudt wrote or reviewed the technical feasibility portion of the TSD. S Tr., p. 16, ll. 3-11 (June 21, 2006, p.m.). In sum, the Agency has based its 90% reduction requirement on its belief that installation of HCI will achieve that level of reduction, and if not, the Agency claims that "flexibility" provisions added to the proposal over time by the Agency provide adequate relief. In fact, these provisions do not adequately address concerns regarding the problems with HCI. Moreover, proposal of these provisions suggests recognition that changes to the proposal are needed to pass the applicable statutory requirements.

The Agency believes that it has incorporated flexibility into the rule to address the variabilities among plants and operating conditions by establishing a 12-month rolling average as the compliance requirement, by including systemwide averaging during the first phase of the rule, and by including the Temporary Technology-Based Standard ("TTBS") and the Multi-Pollutant Standard ("MPS"). However, these provisions provide no meaningful relief. The technical feasibility in question is whether the sorbents can consistently and reliably achieve mercury reduction at the levels required by the rule over long term operation. The Agency's analysis is based upon the assumed use of only HCI with cold-side precipitators ("CS ESPs") and TOXECON[9] for the HS ESPs and without relying on the co-benefits of NOx and SO_2 control equipment. Therefore, the Agency's burden is to demonstrate that the HCI technology alone is

[9] TOXECON is a type of fabric filter or baghouse following an electrostatic precipitator ("ESP") for the purpose of removing mercury.

technically feasible and will achieve 90% mercury emissions reductions over the long term. The Agency has not done this, and so the Agency has not demonstrated that the proposed rule is technically feasible.

1. The Environmental Protection Act requires that rules be technically feasible.

As stated *infra*, in promulgating rules and regulations under the Act, "the Board shall take into account . . . the technical feasibility" of measuring or reducing the particular type of pollution. Section 27(a) of the Act. The Appellate Court interpreted Section 27 in *Commonwealth Edison* to mean that rules limiting the emissions of SO_2 and particulates into the air would be valid only if they were shown to be technically feasible and economically reasonable for a substantial number of the individual emission sources in Illinois. *Commonwealth Edison* at 281-282; *see also Peabody Coal Co. v. IPCB*, 36 Ill.App.3d 5, 10 (holding that the substantive regulations of the Board should be economically reasonable and technically feasible for a substantial number of the individual emission sources in the state).

Commonwealth Edison involved new primary and secondary ambient air quality standards under the Clean Air Act Amendments of 1970. *Commonwealth Edison* at 275. The Agency, acting pursuant to Section 4(j) of the Act, submitted proposals to the Board governing the emission rates of various pollutants into the air which it deemed necessary to achieve compliance with the federal standards under a mandated State Implementation Plan. *Commonwealth Edison* at 275. The plan included rules limiting the emission rates of sulfur and particulates from stationary sources in Illinois. *Commonwealth Edison* at 275. At the hearing on the matter, testimony showed that while 60 to 70 approaches for controlling SO_2 emissions were being explored, only five were considered to be processes sufficiently well-developed and advanced within the cycle of development to "be capable of providing or contributing to the

control of SO_2 emissions within the next five years." *Commonwealth Edison* at 287. Moreover, the five processes either had specific limitations or required further development. *Commonwealth Edison* at 287. As a result, the court concluded that from its reading of the record, it was "unable to state that the Board took into account the technical feasibility of the rules." *Commonwealth Edison* at 287. Based on this premise, the court held that without any evidence "that the needed systems are beyond the conceptually workable stage of development, it cannot be said that the Board's rules rest upon" statutory compliance under Section 27 of the Act. *Commonwealth Edison* at 287-288.

By supporting the MPS, a substantial number of sources in the state, representing half the generating capacity, have indicated they cannot comply with the rule by the deadline. Kincaid's representatives explicitly stated that it cannot comply. C Tr., p. 1818 (August 23, 2006, a.m.) Moreover, the status of the development of HCI is so dynamic, or as Mr. Cichanowicz described it, chaotic (Chicago Transcript,[10] p. 533 (August 16, 2006, a.m.)), that HCI is not "beyond the conceptually workable stage of development" (*Commonwealth Edison* at 287-288). Under the Environmental Protection Act, the Board must adopt rules that are technically feasible for a substantial number of sources within the state. Further, such rules are technically feasible only if the involved technology is beyond the stages of development for a substantial number of sources. That is not the case with this rule. It is not technically feasible, and the Board may not adopt it consistent with Section 27 of the Act and *Commonwealth Edison*.

2. <u>The technology has not demonstrated consistent and long-term removal at a rate of 90%.</u>

Dr. Staudt's conclusion that installation of activated carbon injection systems and use of halogenated or brominated sorbents will achieve the required 90% reduction appears to be based

[10] Hereinafter referred to as "C Tr."

upon the results of tests at various electric generating units ("EGUs") lasting from a few days up to a year. The year-long test, and apparently there has been only one, occurred at the Gaston Plant. TSD, pp. 125-126; S Tr., p. 24 (June 21, 2006, p.m.); S Tr., p. 121 (June 22, 2006), *see also* C Tr., pp. 493-500 (August 15, 2006, p.m.) Most of the tests upon which justification for this rule was based were only 30-day tests. However, 30-day tests do not provide sufficient operational information regarding the truly long-term effects of injecting treated activated carbon. Such testing does not address the longer-term impacts of the activity on equipment and operations.

The circumstances of the Gaston Plant test, which is the only test we are aware of that has assessed mercury removal for at least 12 months, do not totally square with the Agency's assertion that HCI is tested and commercially available and will result in a 90% removal. First, the Gaston Plant burns low-sulfur bituminous coal (C Tr., p. 496 (August 15, 2006, p.m.)), while most of Illinois' plants burn PRB coal, which is low-sulfur, subbituminous coal (Ex. 44). Second, the Gaston Plant was testing mercury removal through a TOXECON, or fabric filter, arrangement. C Tr. p. 498 (August 15, 2006, p.m.) The question was the air-to-cloth ratio necessary to achieve 90% removal. The data accumulated over the 12-month period of the test showed a removal rate of only 85.6%. C Tr., p. 497 (August 15, 2006, p.m.) To determine whether the TOXECON arrangement could achieve a 90% removal rate, Gaston Plant simulated a greater air-to-cloth ratio by reducing load and did achieve 90% removal for periods of time less than 12 months. C Tr., p. 497 (August 15, 2006, p.m.) Mr. Cichanowicz stated in his oral testimony that he believes that 90% removal is "highly likely" if a system were initially designed to include TOXECON, but Gaston Plant was not and did not achieve 90% removal on a sustained 12-month basis. C Tr., p. 500 (August 15, 2006, p.m.) Third, Gaston Plant had a

baghouse in place following a mal-performing HS ESP. C Tr., p. 499 (August 15, 2006, p.m.) There are only three HS ESPs in Illinois, and none of them is followed by a baghouse. The rest of the EGUs in Illinois have CS ESPs. Therefore, the test at Gaston Plant is not, really, applicable to any of the EGUs in Illinois with CS ESPs, leaving the Board with no long-term information regarding the ability of HCI to consistently, reliably remove mercury at a rate of 90% on a 12-month rolling basis.

Dr. Staudt acknowledges the co-benefits achieved from various combinations of control equipment found on many coal-fired power plants, concluding that units firing bituminous coal equipped with scrubbers, selective catalytic reduction ("SCRs"), and ESPs will remove "about" 90% of the mercury. Ex. 50, p. 4. "About," however, is not good enough for a command and control rule, and in any event, most of the EGUs in Illinois do not fire bituminous coal and some that do are not equipped with the types of pollution control equipment that produce the co-benefits. According to Dr. Staudt, circulating fluidized bed boilers ("CFB") with fabric filters will capture "over 90%." Ex. 50, p. 4. Currently, only one EGU in the state is a CFB. None of the other types of fuels and control equipment configurations he describes remove anything near 90% of the mercury. Ex. 50, p. 4. The vast majority of Illinois' power generation relies on subbituminous coal, not one of the fuels that figured in any combination of non-mercury-specific control equipment to obtain co-benefit reductions, and most companies do not have the level of NOx and SO_2 control equipment necessary to produce significant co-benefits relative to mercury reduction. Therefore, mercury-specific control equipment is required at most of the EGUs in Illinois in order for them to achieve significant mercury reduction and is definitely required for them to achieve the levels in the proposed rule.

Even the Agency's primary technology witness recognized that mercury control technologies are developing and in the midst of an ongoing evolution. Dr. Staudt claims that there are "many mercury control methods . . . under development," but "sorbent injection is clearly the most developed. It is the only approach that has been tested on several coal-fired boilers firing a wide range of fuels." Ex. 50, p. 4. (Emphasis added.) Dr. Staudt describes three mechanisms that have been developed over time for injecting sorbent into the gas stream at a power plant: (1) "normal" sorbent injection upstream of an existing ESP or fabric filter at a cost of around $2/KW; (2) TOXECON, which consists of a fabric filter downstream of the ESP with the sorbent injected between the ESP and fabric filter, with a mercury removal rate of over 90%; and (3) TOXECON-II, which requires injecting the sorbent between fields in the ESP. Ex. 50, p. 5. Dr. Staudt says, "So, the technology has advanced rapidly over the last few years and experience from just a few years ago may be obsolete." Ex. 50, p. 5. He refers to the general experience of using untreated powdered activated carbon in municipal waste incinerators and points out that halogenated powdered activated carbon works better than untreated activated carbon in coal-fired power plants and has been developed specifically for use in coal-fired boilers. Ex. 50, p. 6. Dr. Staudt's statements are very telling. What Dr. Staudt has described is an evolving control approach, not one for which a responsible regulatory authority or an affected company can be assured will produce the required reductions. For this reason, as described further below, it is not at all surprising that Dr. Staudt agreed that the rule should have an exception for when the technology does not work as well as the Agency' assumes it will, and he believed that the TTBS proposed by the Agency was not broad enough. S Tr., pp. 88-89 (June 22, 2006).

Dr. Staudt further states, "It is my opinion that the coal-fired units in the state of Illinois are capable of meeting the requirements of the proposed mercury control rule at a cost close to that described in the TSD." Ex. 50, p. 6. The cost described in the TSD is "in the range of $2/KW (somewhat higher for small units and somewhat lower for very large units), or about $1 million for a 500 MW plant." TSD, p. 130. Dr. Staudt's cost estimates assumes that most units will be able to comply using only HCI. Dr. Staudt states:

> For subbituminous coals, such as Powder River Basin (PRB) coals that are used widely in Illinois, halogenated PAC [powdered activated carbon] has been shown to be effective at several full-scale coal-fired boiler installations providing 90% or more removal. At several sites injection of the halogenated PAC has shown that it provides over 90% mercury removal at treatment rates of about 3 pounds of sorbent per million actual cubic feet of flue gas (lb/MMacf) when injected upstream of a cold-side ESP. This testing includes at least two 30-day continuous trials where 93% or more mercury removal was achieved over the period.

Ex. 50, p. 7. In fact, Dr. Staudt states:

> I'm assuming that they all can comply. . . .[T]he only unit – the units that I do have, I'm not sure if they will [SIC] able to make 90 percent are the four small Meredosia units which are high sulfur and – also assuming if Hutsonville continues to burn high sulfur coal, they may not be able to achieve 90 percent in the manner that's assumed in the TSD.

S Tr. pp. 208-209 (June 21, 2006, p.m.) Therefore, the technology upon which this rule of general applicability is based is HCI.

Mr. Nelson enthusiastically supports Dr. Staudt's position. He begins his written testimony with a few questions and answers:

> Is it technologically possible to reduce mercury emissions at each Illinois power plant by 90% today?
>
> Of course it is. . . .

> Are there inexpensive retrofit technologies available to get 90%+ at Illinois plants? For the vast bulk of Illinois plants, the answer to this is also yes, even today.

Ex. 43, p. 2. Mr. Nelson's testimony summarizes a number of 30-day studies conducted by his and other companies in conjunction with the Department of Energy where the mercury removals were 90% or better. He claims that if one wants to achieve higher rates of mercury removal, one would just increase the rate of HCI. Ex. 43, p. 3. He claims that "[t]he quantity of sorbent, particularly a brominated sorbent, in a subbituminous plant that you inject is directly proportional to the mercury removal that you will achieve." Ex. 43, p. 2. Moreover, according to Mr. Nelson, activated carbon injection systems and the sorbents (*i.e.*, HCI), though still undergoing testing across the nation, are commercially available today. Ex. 43, pp. 3, 5, 8; S Tr., pp. 80-92 (June 21, 2006, a.m.); S Tr. pp. 48-49 (June 22, 2006); *see also* more detailed discussion below on "commercially available."

Mr. Nelson, of course, is in the business of selling sorbents, and his rave reviews of sorbent capacity and reliance on short term tests and unpublished data are, therefore, perhaps not surprising. Those who must comply with regulatory requirements, as well as the Board which imposes such requirements, however, should consider and rely on long term data that has been fully assessed for quality, accuracy, and meaning. The danger of relying upon short-term test results or unpublished results from ongoing tests upon which Mr. Nelson and the Agency rely is clear.

For instance, Mr. Nelson offered the parametric results of the mercury removal demonstration test that is currently ongoing at Midwest Generation's Crawford Station as reasonably legitimate proof that 90% reduction could be achieved. *See* C Tr., pp. 552-553 (August 16, 2006, a.m.), and Ex. 88. Mr. Nelson was testifying, though somewhat couched as

questions, that HCI is technically feasible on the basis of hourly preliminary test results. The results he offered in Exhibit 88 showed, according to Mr. Nelson, 90% removal. However, on August 25, 2006, after the conclusion of the Chicago hearing, Mr. Nelson submitted PC 6287 to the Board. PC 6287 is a correction of Exhibit 88. In fact, the HCI was not achieving a 90% removal during the preliminary testing; according to PC 6287, the HCI was achieving 80-85% removal and the testers were not able to comply with USEPA's required 75% data recovery in the "Method 324s," part of 40 CFR 75.Appendix K, that Mr. Nelson identified. C Tr., p. 552 (August 16, 2006, a.m.) In other words, the testers were not able to accurately monitor the mercury levels.

Mr. Nelson says, "Eighty percent Hg removal at 4 lb/MMacf with a concrete-friendly sorbent is still quite an accomplishment, but it looks like a higher injection rate than 4 lb/MMacf would be required at this point in time to achieve 90% removal." PC 6287, p. 1. "Quite an accomplishment" does not equate to compliance with the rule. Mr. Nelson goes on to state that "the difference between 90% Hg removal and 80% may be particularly key in Illinois." PC 6287, p. 1. This is probably the most profound statement that Mr. Nelson or any Agency witness made during these hearings, as it goes to the heart of the issue. He further suggests that an injection rate of greater than 4 lb/MMacf is possible and apparently necessary to achieve the desired level of reduction. However, we note that opacity readings during the injection of the HCI appear to be between 25 and 30%. *See* Ex. 88 and PC 6287, "Opacity at Midwest Generation's Crawford Unit 7 in Chicago." (Emphasis in original.) The Board's applicable opacity limitation is 30%. 35 Ill.Adm.Code § 212.123. As discussed further below, there are significant concerns about whether sorbent injection may impact compliance with PM and opacity limits.

Dr. Staudt's and Mr. Nelson's assertions that HCI will achieve 90% mercury removal at Illinois' EGUs are, really, all that the Agency offered in support of the technical feasibility of HCI. Their testimony was based upon the results of a number of 30-day demonstrations of untreated activated carbon injection and HCI at EGUs across the country and, in some cases, preliminary, unpublished data from tests that are still ongoing due to the continuing need to assess the degree to which HCI removes mercury in various applications. While some of the tests indicated removal rates that approached 90% and even exceeded 90% for part of the time, none of the 30-day demonstrations achieved a 90% removal as the average under circumstances comparable to those of Illinois' EGUs. None of the demonstrations showed that a 90% removal could be achieved on a 12-month rolling average. The Agency has not demonstrated that HCI is technically feasible to achieve compliance with this proposed rule.

3. The purported flexibilities of the rule do not make it technically feasible.

The Agency claims that the proposed rule includes several provisions for flexibility. S Tr., pp. 138-139, 145-147, 187, and 225 (June 19, 2006). These are (1) that compliance is based upon a 12-month rolling average, (2) that companies may employ systemwide averaging to meet 90% until January 1, 2014, (3) that companies may choose to utilize the TTBS until July 1, 2015, and (4) that companies may opt in to the MPS.[11] None of these provisions offers any real flexibility, let alone enough to make the rule technically feasible.

[11] A fifth "flexibility" is the provision to comply with either a 90% removal of mercury from coal-in measurements or the emissions limitation of 0.0080 lb mercury/GWh gross electrical output, including the option of switching off between the two on a monthly basis at will. These Comments do not examine this "flexibility," but if there are any flexibilities in this provision, they neither overcome the lack of flexibility in the other four provisions nor make the rule technically feasible. Additionally, *please see* Mr. McRanie's written testimony on the issues inherent in measuring mercury in the coal. Ex. 132, pp. 6-7, 22-26.

a. *12-Month Rolling Average*

The Agency requires that compliance with the rule be demonstrated as a 12-month rolling average or on a rolling 12-month basis. The proposed rule defines *rolling 12-month basis* as:

> a determination made on a monthly basis from the relevant data for a particular calendar month and the preceding 11 calendar months (total of 12 months of data), with two exceptions. For determinations involving one EGU, calendar months in which the EGU does not operate (zero EGU operating hours) shall not be included in the determination, and shall be replaced by a preceding month or months in which the EGU does operate, so that the determination is still based on 12 months of data. For determinations involving two or more EGUs, calendar months in which none of the EGUs covered by the determination operates (zero EGU operating hours) shall not be included in the determination, and shall be replaced by preceding months in which at least one of the EGU covered by the determination does operate, so that the determination is still based on 12 months of data.

§ 225.130. According to the Agency, the purpose of allowing the 12-month rolling average standard as opposed to instantaneous compliance is to reflect the variabilities inherent in the operation of coal-fired boilers. S Tr., p. 47 (June 22, 2006). While compliance with an average may be easier than compliance with an instantaneous standard, there are reasons why use of a 12-month rolling average does not eliminate concerns arising from the Agency's assumption that HCI will reduce mercury emissions 90% across the board.

The first reason is that the target control level for the EGUs must actually be greater than the required average 90% reduction to maintain compliance. This is obvious mathematical logic. If an average is used to show compliance, then the concept assumes that there will be times when the EGU is removing less than 90% of the inlet mercury. To counterbalance those times when the EGU is removing less than 90% of the mercury, it must remove more than 90% at other times. That being the case, the actual target for mercury removal would be greater than 90%. C

Tr., pp. 1697-1698, 1732-1733 (August 22, 2006, p.m.) The 30-day test demonstrations upon which this rule is based, technologically, showed some removals at greater than 90% but generally at an average less than at 90%. Most of the tests did not show removals at 90% consistently enough to produce an average, on a 12-month rolling basis, of 90%.

The second reason is problems with measurement. Mr. McRanie testified that measuring a 90% removal of mercury is virtually impossible. C Tr., pp. 1690, 1692 (August 22, 2006, p.m.); *see* detailed discussion below. The measurement problem is even worse when attempting to measure a reduction greater than 90% in order to demonstrate compliance with the rolling 12-month average. C Tr., pp. 1766-1767 (August 22, 2006, p.m.)

Midwest Generation objects to the level of the emission reduction standard that the 12-month rolling average is applied to, not that the compliance demonstration method is expressed as a 12-month rolling average. The 90% level of reduction is not technically feasible, and the rolling average compliance, even if it could be accurately measured, offers no real flexibility.

b. *Systemwide Averaging Demonstrations*

The second provision of flexibility in the proposed rule, according to the Agency, is the Averaging Demonstration set forth at Section 225.232. However, the Averaging Demonstration also does not provide any real flexibility, notwithstanding the Agency's assertions to the contrary.

First, the Averaging Demonstration applies only to those companies that have multiple sources. § 225.232(d)(1). Recognizing that there are a number of single-source companies in the state, however, the Agency provided for these "orphans" by allowing them to band together in an Averaging Demonstration. § 225.232(d)(2). The provisions of subsection (d)(2) are largely specious, however. Electric Energy, Inc. ("EEI"), one of the "orphan" companies identified in subsection (d)(2) is actually included in the Ameren family of generating

companies. C Tr., p. 263 (August 15, 2006, a.m.) Therefore, it is not eligible to participate in an Averaging Demonstration with the other "orphans," despite its specific identification in subsection (d)(2).

That leaves Springfield City Water Light & Power ("CWLP"), Kincaid Generation, L.L.C., and Southern Illinois Power Cooperative ("SIPC"). CWLP is subject to a very stringent agreement with Sierra Club, entered into to avoid litigation over its new source permit. If the agreement with Sierra Club is more stringent than the Board's mercury rule, CWLP may be able to beneficially participate in an Averaging Demonstration. However, CWLP, at a current total of 458 MW, is very small, compared to Kincaid. Ex. 44. SIPC is a very small station of only a total of 290 MW, while Kincaid is quite large at 1320 MW. Ex. 44. Twenty-five percent of the combined total capacity of these three "orphans" is 517 MW, less than a single unit at Kincaid (each unit is 660 MW). *See* Ex. 44. SIPC is equipped with wet flue gas desulfurization equipment ("FGD" or "scrubber") on one unit, and its other unit is the only CFB EGU in Illinois, with limestone injection for SO_2 control followed by selective non-catalytic reduction ("SNCR") for NOx control and a baghouse for PM control, all of which provide co-benefits with respect to mercury control. Ex. 44; Ex. 50, pp. 2-4. Kincaid is equipped with an SCR on each unit. Ex. 44. Its sulfur control approach is the use of low sulfur coal. Ex. 44. C.J. Saladino testified that Kincaid believes it achieves approximately 40% mercury removal as a co-benefit of its SCRs. C Tr., p. 1830 (August 23, 2006, a.m.) Given the difference in the sizes of these plants, how Kincaid could benefit from an Averaging Demonstration is totally unclear. In that sense, this rule of general applicability precludes one plant, with no justification other than the circumstances of its ownership, from participating in a provision of the rule, which the Agency reluctantly acknowledged. S Tr., pp. 158-159 (June 22, 2006). The fact that the flexibility is not

real, as discussed below, is of no moment with respect to the disparate impact of the rule to Kincaid.

Third, as with the 12-month rolling average, the Averaging Demonstration is based upon the premise that there is an ability to average and that the reductions used in the Averaging Demonstration can be measured. The Averaging Demonstration requires that each source participating in an Averaging Demonstration achieve a mercury reduction of at least 75%.[12] § 225.232(b). This suggests that the averaging that will take place is to cover plants achieving a reduction between 75% and 90%. In a simplistic example, if a system had four plants each with one unit of 100 MW and one of those plants achieved a 75% removal, as allowed under the Averaging Demonstration, the other three plants would have to average 95% reduction each. As discussed above, because the 95% would be an average reduction for each plant, the target reduction for each plant would probably need to be at least 97%. In Midwest Generation's system of 6512 MW (Ex. 44), if its largest plant, Powerton at 1788 MW (Ex. 44), averaged a 75% removal, the other five plants would have to average 96% removal each, with target reductions of at least 98%. Not even a short-term demonstration has achieved that level of control. To look at it from the opposite angle, if Midwest Generation's smallest plant, Fisk at 374 MW (Ex. 44), achieved only a 75% removal, the other plants would have to average approximately 92% removal with targets of at least 94% removal. Particularly given the problems with measuring mercury reductions discussed briefly above and in more detail below, this is totally unrealistic at this time, and the Agency provided no evidence that it could be done now or by 2009. Therefore, this purported flexibility is, in actuality, completely illusory.

[12] As with our use of the 90% reduction as encompassing the 0.0080 lb mercury/GWh gross electrical output, our use of the 75% reduction to describe the level of control required includes the alternative 0.020 lb mercury/GWh gross electrical output.

c. ***TTBS***

The TTBS at Section 225.234 allows 25% of a system's total rated capacity to be excluded from the compliance requirements of the rule through June 30, 2015, if the owner/operator of the system meets certain requirements. "Orphans" are provided for as in the in the Averaging Demonstration of Section 225.232(d)(2). In order to be eligible for the TTBS, the system must be equipped with HCI and either a CS ESP or a fabric filter and must inject halogenated or other equivalent activated carbon at a rate of 5 lb/MMacf for subbituminous coal and 10 lb/MMacf for bituminous coal. § 225.234(b). In other words, the system must be equipped with the same emissions control hardware and operated in the manner that the Agency claims will achieve the 90% reduction.

The inclusion of the TTBS suggests that the Agency is not as confident of the ability of the technology as it would otherwise lead the Board to believe.[13] The lack of confidence in the TTBS was emphasized by Dr. Staudt's assertions at hearing that he encouraged the Agency to include a TTBS, felt it was unwise when the rule was initially proposed without it, and would have preferred that the TTBS not be limited to only 25% of a system's capacity but rather that it be available to 100% of a system's capacity. S Tr., pp. 88-89 (June 22, 2006).

The TTBS does not afford appreciable flexibility if any at all. Because the TTBS is limited to only 25% of a system's capacity, Kincaid cannot use it because of the size of its units(C Tr., pp. 1847-1848 (August 23, 2006), and CWLP, and SIPC are unlikely to make use of

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[13] The Agency testified that it added the TTBS at the "request of industry." S Tr., p. 210 (June 21, 2006, p.m.) Midwest Generation has not been able to learn who in "industry" made that request, though Dianna Tickner's testimony suggests that perhaps Prairie State Generating was the source of the request. *See* Ex. 80. Prairie State Generating is a new company that has not yet constructed its power plant. Therefore, the provisions of Section 225.234 do not apply to Prairie State Generating; rather, it is subject to the provisions of Section 225.238 if it wishes to make use of the TTBS.

it. Moreover, these companies could face the same "orphan" problems that they faced under the Averaging Demonstration discussed above. Two Midwest Generation units that could benefit from a TTBS-type of flexibility are those at Will County and Waukegan that have HS ESPs. However, the eligibility requirements exclude applicability of the TTBS to these units because the units must be equipped with either a CS ESP or a fabric filter. Obviously, these units are not equipped with CS ESPs; they have HS ESPs, which is why they need some level of relief from the rule.[14] If Midwest Generation were to install fabric filters on these units, setting aside the measurement concerns, at least in Dr. Staudt's and the Agency's view, Midwest Generation would not need the flexibility of a TTBS because these units would comply with the rule.

d. *MPS*[15]

The Agency, Ameren, and Dynegy argue that the MPS provides a different type of flexibility to the rule. Under the MPS, a company may delay achieving or demonstrating compliance with the 90% removal requirement until January 1, 2015 (§ 225.233(d)), if it takes certain actions and meets certain NOx and SO_2 emissions limitations beginning in 2012 and

[14] Dr. Staudt conceded that units with HS ESPs will not achieve the requisite levels of mercury reduction with HCI alone. S Tr., p. 107 (June 21, 2006, p.m.)

[15] Both the Agency and Ameren argued that Midwest Generation had ample time to address the issues raised by the proposal of the MPS during the Chicago hearing, because Ameren's proposed amendment was filed on July 28, approximately two weeks prior to the commencement of the hearing and because there remained about two and a half days of the scheduled hearing time when the hearing was adjourned. Ameren's Response to Midwest Generation's Motion to Schedule Additional Hearings, PCB R06-25 (August 31, 2006); IEPA's Response to Midwest Generation's Motion to Schedule Additional Hearings, PCB R06-25 (August 31, 2006). The Agency and Ameren conveniently overlook what is involved in such an analysis and the fact that the companies' expert witnesses were actively involved in developing responses to the large number of written questions posed of these experts, mostly by the Agency. Further, testimony in this matter was to be filed with the Board by July 28, 2006, at the latest. As Midwest Generation, along with everyone else, received Ameren's testimony on that date, there was no provision for filing testimony addressing the MPS, even if there had been time, for Midwest Generation to prepare and submit written testimony addressing the MPS. To suggest otherwise is both disingenuous and disappointing.

2013, respectively (§ 225.233(e)). Among the general prerequisites for opting in to the MPS are the following:

- Notify Agency of intent to opt in by December 31, 2007 (§ 225.233(b))
- Commence commercial operation of each EGU by December 31, 2004 (§ 225.233(a)(2)(A))
- Identify all EGUs owned as of July 1, 2006 (§ 225.233(b)(1)); all must be included in the MPS (C Tr., p. 166-167 (August 14, 2006))
- Identify current control devices and additional control devices necessary to comply with MPS (§ 225.233(b)(4))
- Install HCI ahead of a CS ESP or fabric filter by July 1, 2009 or install an SCR and an SO_2 scrubber if the EGU burns bituminous coal (§ 225.233(c)(1)(A))
- Inject HCI manufactured by Alstom, Norit, or Sorbent Technologies or other manufacturer pursuant to a demonstration of equality with the other brands at a rate of 5.0 lb/MMacf if firing subbituminous coal or 10 lb/MMacf if firing bituminous coal or at a rate demonstrated not to threaten compliance with PM and opacity limitations, with exceptions for certain site-specific configurations (§ 225.233(c)(2))
- Meet a NOx emissions rate that is the more stringent of 0.11 lb/mmBtu or 52% of the Base Annual Rate or 80% of the Base Seasonal Rate (§ 225.233(e)(1))
- Meet an SO_2 emissions rate that is the more stringent of 0.33 lb/mmBtu or 44% of the Base Rate in 2013 and 2014 and an emissions rate that is the more stringent of 0.25 lb/mmBtu or 35% of the Base Rate beginning in 2015 (§ 225.233(e)(2))

If a company meets these requirements and chooses to opt in to the MPS, the final provision is that the company is prohibited from selling or trading any vintage 2012 and later NOx or SO_2 allowances necessary for compliance with Sections 225.310 (not yet adopted by the Board), 225.410 (not yet adopted by the Board), 225.510 (not yet adopted by the Board), 40 CFR Part 72 (federal Acid Rain Program, pursuant to Title IV of the Clean Air Act), 40 CFR 96.101 *et seq.* (federal NOx CAIR programs), and 40 CFR 96.301 *et seq.* (federal SO_2 CAIR program) that might be generated as a result of complying with the NOx and SO_2 emissions limitations, unless those allowances reflect over-compliance with the MPS. § 225.233(f).

The inclusion of the MPS in the rule raises a number of issues: (1) that the companies that co-sponsored the MPS with the Agency believe that compliance with the underlying rule is not technically feasible and/or economically reasonable; (2) that the companies that co-sponsored the MPS with the Agency are very concerned with the financing and timing of installation of the equipment that would be necessary to comply with the underlying rule, which will be discussed in the next section of these Comments; (3) whether it is appropriate for the Agency to require NOx and SO_2 emissions limitations in this mercury rulemaking, which it claims in the Joint Statements will affect how the Agency approaches so-called "post-CAIR" emissions reductions necessary for the state to demonstrate attainment of the ozone and PM2.5 NAAQS when the Agency has presented no support or information in this regard in this rulemaking proceeding; (4) whether the Board has the authority to regulate SO_2 in a rule of general applicability, given the prohibitions of Section 10 of the Act; and (5) whether it is constitutional for the Agency to prohibit participation in national trading programs. Including NOx and SO_2 provisions is inappropriate, even in a section represented to be voluntary, in a mercury rule, and it is unconstitutional for the Board to interfere with national emissions trading programs.

Mr. Menne testified in support of the MPS, providing Ameren's rationale that inclusion of the MPS is necessary in order for Ameren to comply with the mercury limitations. Mr. Menne stated that Ameren was not confident that HCI alone would ensure that Ameren could comply with the 90% removal requirement. C Tr., p. 169 (August 14, 2006). He said that Ameren had determined it would have to "put at least fabric filters or baghouses on each one of our units in combination with [activated carbon injection] or a scrubber of some form" for those units still burning bituminous coal in order to comply. C Tr., p. 159 (August 14, 2006). For

those units burning subbituminous coal, Ameren would have to install a fabric filter plus sorbent injection. Ex. 76, p. 5. As discussed in Section III of these Comments, installation of this level of control equipment by July 1, 2009, assuming it would be physically possible, is not financially sound. Mr. Menne also stated that because Ameren insists upon being in compliance with applicable regulations, it will not risk the noncompliance that may arise from the unproven HCI. C Tr., p. 100 (August 14, 2006).

Of course, all companies in the state share Ameren's view that compliance is important and that the companies cannot share in the Agency's cavalier view that a technology that works some of the time or that gets pretty close is adequate to support a rule that imposes compliance obligations. *C.f.*, C Tr., p. 1818 (August 23, 2006). Based on the test results to date, none of the companies believes that it can rely on HCI alone for compliance with the rule. All of the companies are confident that the co-benefits of NOx and SO_2 control equipment are necessary for them to ensure compliance with Illinois' proposed mercury rule. USEPA recognized the co-benefits of NOx and SO_2 controls when it proposed and adopted the CAMR and expected companies to coordinate CAMR compliance with CAIR compliance. 70 Fed.Reg. 28605, *et seq.* The implications of the proposal of the MPS and then the amendment to the MPS by Dynegy and the Agency are clear: companies comprising over half of the generating capacity in the state have announced that they cannot comply with the rule in the manner proposed within the timeframes proposed. Their announcement is equally true of the remaining capacity in the state. As a result, the Agency's support of the MPS demonstrates that it, too, finds that as a rule of general applicability, the underlying rule is not technically feasible.

NOx and SO_2 have nothing to do with the requirement to control mercury emissions, and the concerns with including NOx and SO_2 in a mercury rulemaking were apparent at the Chicago

hearing. Participants in the hearing found themselves repeatedly venturing into questions regarding the implications of the inclusion of NOx and SO_2 in the MPS. The Agency has provided no technical or economic support relative to NOx and SO_2 control measures or any requirements it believes are necessary for the state to comply with the ozone and PM NAAQS, thus raising questions about the propriety of the promise in the Joint Statement, "that the level of NOx and SO_2 reductions required in the proposed rule is expected to contribute significantly towards the state's efforts to achieve the attainment of National Ambient Air Quality Standards, and any further reductions needed would first come from other sources." Exs. 75 and 125, p. 3. The Agency offered no evidence that the reductions resulting from companies' opting in to the MPS would "significantly" contribute towards attainment of the NAAQS. The Agency can offer no guarantees that any companies will ultimately opt in to the MPS, though Mr. Menne testified that Ameren intends to (C Tr. pp. 165-166 (August 14, 2006)) and the implication is that Dynegy intends to (*see* Ex. 125 and C Tr. p. 1342 (August 21, 2006)).[16] Apparently, neither company is obliged to opt in.[17] C Tr., p. 133 (August 14, 2006). Therefore, how the MPS "significantly" contributes towards attainment of the NAAQS remains an outstanding question that the Agency cannot answer until it has commitments from those choosing to opt in; these are not due before December 31, 2007, and even then, how binding they are remains a question, as only a notification of intent to opt in is required. § 225.233(b). Until the Agency issues a permit

[16] Dynegy offered no testimony in the hearings.

[17] These comments do not discuss the oxymoron of being obliged to opt in to a voluntary program. However, Ameren's letter to the Agency clearly indicates that "opting in" to the MPS is part of its bargain with the Agency in order for Ameren and the Agency to propose, in effect jointly, the MPS, despite the Agency's avowal that the MPS is not its proposal. *See* Attachment 1. Regardless, once a company opts in, the requirements are mandatory and permanent, not voluntary.

requiring compliance with the MPS, nothing is enforceable, a prerequisite for credit towards demonstrating attainment with a NAAQS.

Moreover, the Board is precluded from regulating SO_2 emissions in the manner proposed by the Agency. Section 10(B) of the Act provides:

> The Board shall adopt SO_2 regulations and emission standards for existing fuel combustion stationary emission sources located in all areas of the State of Illinois, except the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas, in accordance with the following requirements:
>
> > (1) Such regulations shall not be more restrictive than necessary to attain and maintain the "Primary National Ambient Air Quality Standards for Sulfur Dioxide" and within a reasonable time attain and maintain the "Secondary National Ambient Air Quality Standards for Sulfur Dioxide."

Section 10(B) of the Act. (Emphasis added.) Under Illinois law and fundamentals of statutory construction, if statutory language is clear, a court must give effect to its plain and ordinary meaning without resorting to other construction aids. *U.S. Bank Nat'l Assoc. v. Clark*, 216 Ill.2d 334, 346 (2005). As a result, courts may not construe a statute by altering its language in a way that constitutes a change in the plain meaning of the words actually adopted by the legislature. *U.S. Bank Nat'l. Assoc.* at 346. Thus, if the statutory language of Section 10(B) is clear, the Board must give it its plain and ordinary meaning.

Indeed, the language of Section 10(B) is clear. The plain and ordinary language limits the extent to which SO_2 emissions from fuel combustion sources outside of the three major metropolitan areas can be controlled by the Board. As a result, the Board, under Section 10(B), cannot enact regulations that are more restrictive than necessary to attain and maintain the primary and secondary NAAQS for SO_2. Section 10(B)(1) of the Act.

Because there are no SO_2 nonattainment areas in Illinois, there can be no new SO_2 limitations adopted by the Board applicable to sources outside the specified major metropolitan areas.[18] The proposal directly violates the plain and ordinary meaning of Section 10(B). Further, although proponents of the MPS claim that it is voluntary, if Midwest Generation is forced to follow the MPS as the only option for compliance with the rule, then the MPS is not voluntary, but rather a mandate for compliance. However voluntarily an entity may elect to participate, once subject to the MPS, the SO_2 controls are mandatory. As a result, under Illinois law, the Board must find that the proposal would violate the Act by limiting SO_2 emissions beyond legislative authorization.

If a company opts in to the MPS, it is prohibited from participating in the national NOx and SO_2 emissions trading programs commencing with vintage year 2012 unless it over-complies with the MPS. The Agency offered no rationale for this prohibition on trading. Regardless, even if there were a rationale, such a prohibition would be unconstitutional. It violates the Supremacy and Commerce Clauses with respect to both NOx and SO_2 trading, even though participation in the MPS is claimed to be voluntary.

Midwest Generation questions whether participation in the MPS is truly voluntary. In fact, the "voluntary" provision of the MPS is illusory. The Supreme Court addressed the circumstances under which a rule allegedly voluntary is not in *U.S. v. Butler*, 297 U.S. 1 (1936), addressing "voluntary" regulations under the taxing power of the federal government. The government, employing a plan to regulate agriculture, argued that "whatever might be said against the validity of the plan, if compulsory, it is constitutionally sound because the end is

[18] *See* USEPA, Green Book, <http://www.epa.gov/oar/oaqps/greenbk/snstate.html> (no nonattainment areas in Illinois), and <http://www.epa.gov/oar/oaqps/greenbk/smcs.html#ILLINOIS> (Groveland and Hollis Townships, Tazewell County, and Peoria, Peoria County, are maintenance areas) (September 18, 2006).

accomplished by voluntary cooperation." 297 U.S. 1, 70 (1936). The Court found that the regulation was not in fact voluntary. It based its holding on the following:

> The farmer, of course, may refuse to comply, but the price of such refusal is the loss of benefits. The amount offered is intended to be sufficient to exert pressure on him to agree to the proposed regulation. . . . If the cotton grower elects not to accept the benefits, he will receive less for his crops; those who receive payments will be able to undersell him. The result may well be financial ruin.

Butler at 70-71. As a result, the Court held that the "asserted power of choice is illusory." *Butler* at 71.

In the case of the MPS, as Mr. Menne's and Anne Smith's testimony attest, the underlying rule is so stringent that companies believe they cannot comply without relief with respect to demonstrating the level of removal and the timing of such compliance. The only option for delaying the demonstration of compliance is through the MPS. When the MPS is the only safe harbor, it is no longer voluntary. The "voluntary" language in the MPS is illusory. The companies face either enforcement because they are technologically unable to demonstrate compliance and because they are unable to secure financing, permitting, or materials and labor for installation by 2009 of the NOx, SO_2, and PM control equipment necessary for their co-benefits, or they must opt in to the MPS. Mr. DePriest testified that the timeframes are too short for a company such as Midwest Generation to secure the necessary financing, permits, and materials and labor to install the NOx, SO_2, and PM control equipment that will be necessary in addition to HCI to ensure compliance, assuming the Board adopts the rule as proposed. Ex. 115, p. 20. Therefore, it will become exposed to possible civil and criminal enforcement – or it must opt in to the MPS. Those are not viable options, particularly when the Agency has staked its

support of the rule, its demonstration of the technological feasibility of the rule, on HCI alone, with the exception of the units with HS ESPs.

Regardless of the claimed voluntary participation in the MPS, the companies that do opt in are then compelled to comply with all of the provisions of the MPS, including the prohibition on emissions trading through national programs. A state does not have the authority under the U.S. Constitution to change the applicability of a federal law where such authority has not been granted by Congress. Congress did not grant states the authority to interfere with Title IV of the Clean Air Act.[19] While Title IV does not exclude additional SO_2 emissions reductions under Section 110 of the Clean Air Act, nothing in Title IV grants states the authority to interfere with the Title IV trading program. For a state to do so, as Illinois proposes in Section 225.233(f), violates the Supremacy and Commerce Clauses of the Constitution.

The Supremacy Clause of the Constitution "invalidates state laws that 'interfere with, or are contrary to,' federal law." *Clean Air Markets Group v. Pataki*, 194 F. Supp. 2d 147, 157 (N.D.N.Y. 2002), *affirmed* 338 F.3d 82 (2d Cir. 2003).[20] As such, federal law preempts state law to the extent state law actually conflicts with the federal law. *Clean Air Markets* at 157. In *Clean Air Markets*, New York passed a law that placed a trading restriction on SO_2 allowances. *Clean Air Markets* at 154. The court found that "New York's restriction on transferring allowances to units in the Upwind States is contrary to the federal provision that allowances be tradable to *any* other person." *Clean Air Markets* at 158. As a result, the court held that New

[19] Whether USEPA even has that authority is debatable and the subject of an appeal of the CAIR. *North Carolina, et al., v. USEPA*, No. 05-1244 Cons. (D.C. Cir. July 11, 2005).

[20] The District Court found that the New York law violated both the Supremacy and Commerce Clauses of the Constitution, although the Court of Appeals relied on only the Supremacy Clause, finding that because the state law was unconstitutional under the Supremacy Clause, it did not have to discuss the Commerce Clause.

York's law was preempted by the Clean Air Act because it interfered with the Clean Air Act's "method for achieving the goal of air pollution control: a cap and nationwide SO_2 allowance trading system." *Clean Air Markets* at 158.

Like New York's law in *Clean Air Markets*, the MPS mandates that a party opting into the MPS must surrender SO_2 allowances. As a result, the MPS effectively prohibits trading of SO_2 allowances and, as the Agency has indicated, it intends to retire the surrendered allowances thus reducing the size of the market, a size expressly determined by Congress in Title IV of the Clean Air Act. Under the Supremacy Clause and *Clean Air Markets*, state laws cannot impede the Clean Air Act's nationwide SO_2 cap and allowance trading system. Thus, the Clean Air Act preempts and invalidates the prohibition on trading of SO_2 allowances.

While the NOx trading programs may have a slightly different status because they are not established directly in the Clean Air Act, nevertheless, the state cannot participate in a federal NOx trading program through the CAIR and then prohibit sources from participating without violating the Supremacy Clause. Once the state has chosen to comply with the CAIR NOx caps through participating in the federal NOx trading programs, as Illinois proposes to do through Docket R06-26 currently pending before the Board and which the Board will presumably adopt in some form (that proposal is also subject to potential objections that will not be discussed further here), and USEPA has approved the rule as part of the SIP, for the state to prohibit participation in the manner proposed in the MPS violates the Supremacy Clause because the CAIR trading program as applied to Illinois has become federal law.

Moreover, prohibiting trading SO_2 and NOx allowances would violate the Commerce Clause of the U.S. Constitution. In *Clean Air Markets*, New York attempted to halt altogether "transfers of SO_2 allowances from New York units to units in Upwind States[,] . . . in spite of a

federal system designed for free nationwide transferability of SO_2 allowances." *Clean Air Markets* at 162. Thus, New York's law imposed a burden on interstate commerce. *Clean Air Markets* at 162. Since New York failed to justify its law in terms of "local benefits flowing from the statute and the unavailability of nondiscriminatory alternatives adequate to preserve the local interests at stake," the court invalidated New York's law under the Commerce Clause. *Clean Air Markets* at 162. Like *Clean Air Markets*, the MPS prohibits sources in Illinois from transferring SO_2 and NOx allowances in spite of the free-market federal system. Further, as noted above, by taking allowances off the markets, the MPS would change the scope of those markets, scopes that have been specifically defined by Congress in the case of the SO_2 trading program and by USEPA in the case of the NOx trading programs. Even if there are local benefits from the MPS, there may be less discriminatory (as to interstate commerce) alternatives to achieve attainment of the ozone and PM2.5 NAAQS, which the Agency must develop in the proper proceeding. The Agency has not demonstrated or even tried to demonstrate that there are less discriminatory approaches, nor, for that matter, that the MPS will even provide any such benefits.

Because of these violations of the Supremacy and Commerce Clauses, Midwest Generation believes that the rule would be invalid and that USEPA could not approve this rule pursuant to Section 111(d) of the Clean Air Act.

B. Midwest Generation Has Demonstrated That the Rule Is Not Technically Feasible.

Among other requirements, the Agency's burden in a rulemaking is to demonstrate that a regulatory proposal is technically feasible. Section 27 of the Act. Participants in a regulatory proceeding do not have a burden to demonstrate that a proposal is not technically feasible. In this matter, Midwest Generation has raised credible questions about whether the rule is

technically feasible and has affirmatively demonstrated that measurements to the level required by the rule are not currently possible.

Mr. Cichanowicz's testimony raised serious questions about the implications of long-term operations at the plants, when the demonstration tests have lasted only 30 days. Mr. Cichanowicz also raised questions about the role of the size of the specific collecting area ("SCA") in the ESPs. William DePriest of Sargent & Lundy, a company that has been in the business of designing power plants and their equipment for 115 years, questioned Illinois companies' ability to comply with the rule using only HCI or to comply timely if the companies determined that additional equipment was necessary. Mr. McRanie raised perhaps the most consequential question of all: whether the companies can even measure if they are in compliance. Mr. McRanie's testimony demonstrated that the rule is not technically feasible. If removal of the pollutant cannot be measured to the level necessary to demonstrate compliance with the rule, the rule is not only technically infeasible but may also violate the due process rights of those subject to the rule.

Mr. Menne for Ameren, Andy Yaros and Mr. Saladino for Kincaid, and James W. Ingram, Assistant Corporate Counsel for Dynegy, all expressed deep concerns over their companies' ability to comply. Ameren and Dynegy, then, proposed, in conjunction with the Agency, the MPS, while Kincaid proposed yet another alternative to the rule. Finally, Mr. Nelson provided an exclamation point to the issue of technical feasibility. Mr. Nelson, apparently because of his commercial interests, is clearly enthusiastic about the ability of HCI to achieve 90% removal, but he could point only to 30-day demonstration tests. Mr. Nelson, anxious to prove the ability of Illinois sources to comply, introduced preliminary results of mercury removal testing at Midwest Generation's Crawford Generating Station (Ex. 88), only to

have to replace the information, revealing a lower removal rate, when he learned that there was an error in the measurement data (PC 6287). Too much of this rule is based upon short-term testing, including preliminary data.

USEPA and the U.S. Department of Energy ("DOE") are aware that the technology is in the process of being developed. The CAMR reflects a thoughtful approach to mercury reductions, and USEPA has reiterated its position in the Reconsideration. 71 Fed.Reg. 33388 (June 9, 2006). Illinois' ill-conceived approach places the cart before the horse. Illinois is pushing for reductions where the technology is not proven or ready and for reductions that may be obtained in due course through regulatory efforts aimed at other programs.

1. The technology is currently still evolving.

As asserted earlier in these comments, Midwest Generation questions the level of mercury removal achievable by HCI, not the feasibility of the installation and operation of activated carbon injection hardware or equipment. As the Agency claims, the hardware is simple, relatively inexpensive, relatively easy to install and operate, and proven, at least at incinerators. Midwest Generation does not expect there to be problems with the activated carbon injection system hardware.

What the Agency has not demonstrated is that the HCI sorbents will reliably, consistently, and over the long haul reduce mercury emissions by 90% as required by the Agency's proposal. Midwest Generation believes that HCI is an evolving technology that requires more testing, and that is why DOE-funded tests are currently underway at the Crawford Generating Station and at other power plants across the country. Midwest Generation is not alone in this belief: USEPA has developed the CAMR around the fact that mercury removal technology is evolving (70 Fed Reg. at 28614-28615); DOE does not believe the technology is

"there" yet (*see* Ex. 55); the Electric Power Research Institute ("EPRI")[21] does not believe the technology is "commercially available" (*see* Ex. 113). That the technology is not "commercially available" is, itself, testament to the evolving nature of the technology.

Dr. Staudt and Mr. Nelson each offered definitions of "commercially available" at the Springfield hearing. Dr. Staudt defined "commercially available" as "when there is a provider willing to sell it." S Tr., p. 49 (June 22, 2006). Mr. Nelson's definition was similar. He said,

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[21] EPRI is a respected research institute, largely funded by the electric power industry through membership dues, that often works in collaboration with USEPA and/or DOE in researching and developing solutions for the electric power industry. In EPRI's own words:

> The Electric Power Research Institute (EPRI), with major locations in Palo Alto, California, and Charlotte, North Carolina, was established in 1973 as an independent, nonprofit center for public interest energy and environmental research. EPRI brings together members, participants, the Institute's scientists and engineers, and other leading experts to work collaboratively on solutions to the challenges of electric power. These solutions span nearly every area of electricity generation, delivery, and use, including health, safety, and environment. EPRI's members represent over 90% of the electricity generated in the United States. International participation represents nearly 15% of EPRI's total research, development, and demonstration program.
>
> Public Interest Mission
>
> As a tax-exempt, nonprofit scientific research organization, EPRI has a strong public interest mission that helps shape the scope and direction of our work, extending through our entire portfolio from nuclear safety to environmental science. It requires that we operate with great care, objectivity and scientific integrity.
>
> Our researchers are independent scientists and engineers with total freedom to assure unbiased, credible science is brought to bear on challenging and often controversial issues. Research is regularly submitted to outside scientific committees and to peer-reviewed journals to assure it meets every criterion of best scientific practice.

http://my.epri.com/portal/server.pt? → About EPRI → Corporate Overview (September 5, 2006); *see also* Ex. 113, last page.

"To be commercially available, it simply has to be able to be purchased, doesn't have to supply a demand that doesn't currently exist." S Tr., p. 89 (June 21, 2006, a.m.)

EPRI distinguishes between "commercially available" and "offered for sale commercially," the latter of which is more akin to Dr. Staudt's and Mr. Nelson's definitions of "commercially available," in Exhibit 113, introduced at the very end of Mr. Cichanowicz's testimony, "Status of Mercury Controls for Coal-Fired Power Plants: An EPRI Assessment (August 2006)." EPRI's very recent 2006 definition of "commercially available" is more in tune with general use:

> While several of these mercury control technologies may be "*offered for sale commercially*," EPRI does not yet consider them to be "*commercially available*" from the user's perspective for the following reasons:
>
> - Their performance cannot always be predicted with confidence.
>
> - Insufficient long-term tests have been conducted of the mercury reduction capability of any technology or control strategy. Few studies have lasted as long as one month and none as long as 12-18 months to ensure long-term performance at high removal levels with no unmanageable impacts on the power plant.
>
> - The performance of certain configurations/coal types has barely been investigated (especially at plants burning coal blends).
>
> - Tests have not yet been conducted (or reported in the public domain) on the mercury oxidation performance of the new SCR catalysts being developed to minimize SO_3/sulfuric acid and blue plume formation. Therefore, we do not know if they can produce the same high oxidized mercury levels (in plants firing eastern bituminous coal) as current catalysts.[5]
>
> The U.S. Department of Energy (DOE) in collaboration with power companies, EPRI in collaboration with its members, and DOE/EPRI/company teams are conducting or are planning to conduct tests over the next three years to address most of these issues.

> [5] Field measurements at full-scale boilers firing PRB and equipped with an SCR have shown very little, if any, effect of the SCR on mercury speciation.

Ex. 113, p. 2. (Emphasis and footnote 5 in original.)

Mr. Cichanowicz raised numerous questions about the technical bases of the proposed rule, including the effect of SCA size on the ability of an ESP to remove mercury. He said, "There is perhaps something about large SCA ESPs that make it amenable to high levels of mercury removal." C Tr., p. 554 (August 16, 2006, a.m.) Figure 5.2 in Section 5.6.2 of Exhibit 84 suggests there is a direct or indirect relationship between mercury removal and ESP SCA size. Ex. 84, p. 4. Mr. Cichanowicz noted that the mercury removal in the range of 90-95% occurred at the large ESPs and not in the smaller ESPs that are more characteristic of those in Illinois. C Tr., pp. 523-524 (August 16, 2006, a.m.) Mr. Cichanowicz illustrated with Exhibits 89 through 92 test demonstration sites where the ESPs had been replaced with larger ESPs. His point was that no one thoroughly understands the relationship between the SCA size and mercury removal. Dr. Staudt and Mr. Nelson claim it plays no role. S Tr., p. 111 (June 21, 2006, a.m.); S Tr., pp. 146-147 (June 21, 2006, p.m.) This has not been proven. These exhibits also reveal the amount of ductwork leading into the ESPs because of the retrofitting involved to place the larger ESPs onto the plant sites. Exhibits 94 and 95 are satellite photos of Midwest Generation's Waukegan and Will County Generating Stations. These are Midwest Generation's two stations with HS ESPs. Mr. Cichanowicz's purpose in showing these two stations was to illustrate the lack of space available for the installation of TOXECON (*i.e.*, baghouses) or larger ESPs, which even Dr. Staudt conceded would be required to achieve the necessary level of mercury reduction at HS ESPs.

Keith Harley tried to make the point in his cross-examination of Mr. Cichanowicz that the photos do not show the entirety of the Waukegan and Will County plant sites. C Tr., pp. 571-572, 576, 577 (August 16, 2006, a.m.) The point is irrelevant.[22] While a part of the question is whether there is room anywhere at the plant site for baghouses or larger ESPs, which is the point that Mr. Harley was alluding to, the major point that Mr. Cichanowicz made was that there is no room for additional or replacement control equipment at the location at the plant that makes the most control-efficiency sense. Regardless of what Midwest Generation does, it will involve placing the new control equipment some distance away from the current location of the ESPs, which will lead to costs around $67 million rather than the generic $18.8 million that the Agency assumes for TOXECON. Ex. 115, pp. 23-24.

Mr. Cichanowicz raised questions about the long-term. The demonstration tests have been very short. *See* Ex. 113, p. 2. The industry does not have the experience with mercury control removal technology that it has with NOx and SO_2 removal technologies. C Tr., pp. 664-665, 667, 668 (August 16, 2006, p.m.) Neither the industry nor regulators can honestly predict with any level of certainty whether there will be balance of plant impacts from HCI. C Tr., p. 668 (August 16, 2006, p.m.)

Mr. Nelson's submittal of a revision to Exhibit 88, PC 6287, demonstrates the evolving nature of the technology. Mr. Nelson testified at the Chicago hearings that results at Midwest Generation's mercury reduction test at the Crawford Generating Station during the first four days of parametric testing the results were showing 90% reduction in mercury. C Tr., pp. 999-1000

[22] The availability of space is less an issue than where the space is located. The further from the unit that the baghouses must be placed, the more duct work that will be required. The more duct work, the more installation cost that would be incurred. The more duct work, the more power required to operate the control equipment. The more power required, the more operational costs that would be incurred.

(August 17, 2006, p.m.) However, that was not the case. In fact, they were showing considerably less reduction, more in the range of 70-80% reduction, requiring Mr. Nelson to replace Exhibit 88 with PC 6287.

Exhibit 113 provides an overview of the status of mercury control technology. It factually summarizes the technology that can be applied to various coal types and boiler/pollution control configurations. It also lists uncertainties that EPRI, USEPA, and DOE have identified with these various mercury control technologies. Mercury control technology is evolving. There were new developments during the course of the Chicago hearing, in fact, including release of Exhibit 113 and Mr. Nelson's Exhibit 88 (followed by Public Comment 6287). It is premature for Illinois to require so stringent a level of mercury removal where the technology continues to evolve at the rate it currently is. This is not to say that there should not be a requirement for mercury removal; it is to say that such a stringent level of removal at this point in time is not technologically supportable. As Mr. Cichanowicz stated at the hearing, "The world of mercury removal right now is chaotic." C Tr., p. 533 (August 16, 2006, a.m.)

2. Mercury removal cannot be precisely, consistently, and continuously measured.

Mr. McRanie demonstrated most vividly that the Agency's proposal is not technologically feasible. In order for a rule to be technologically feasible and to not abrogate companies' fair notice and due process rights, affected sources must be able to know if they are in compliance as well as be able to demonstrate compliance. This particular rule requires removal of mercury at a rate of 90%. This is very specific. It is not based upon emissions factors developed through stack testing. It is based upon actual measurement of mercury in and mercury out. According to Mr. McRanie, the minute levels of mercury that must be measured

for this rule simply cannot be accurately measured. They are less than the trace level of the measurement devices.

Mr. McRanie very carefully distinguished between detecting mercury and measuring mercury. C Tr., pp. 1724-2715, 1728-1729 (August 22, 2006, p.m.) Mr. McRanie pointed out that the precision and accuracy of measuring mercury at the levels required by the proposed rule are unknown because such data do not exist. C Tr., pp. 1724-1725 (August 22, 2006, p.m.); Ex. 133, slide 6. Part 75, the applicable federal monitoring rules, allow ± 1.0 $\mu g/m^3$ error in calibrating the measurement instruments. Ex. 133, slide 6. This allowable measurement inaccuracy is greater than the emissions standard of 0.0080 lb/GWh or 0.80 $\mu g/m^3$ (Ex. 133, slide 2) included in the rule. Moreover, Mr. McRanie says that based on field observations, the precision of mercury measurement is actually more in the range of $\pm$ 0.5 $\mu g/m^3$. In other words, if the true value of mercury emissions were 0.80 $\mu g/m^3$, the mercury continuous emissions monitoring systems ("CEMS") might read anywhere between 0.3 and 1.3 $\mu g/m^3$, and this assumes that there is no calibration error. If there is a calibration error as allowed by the Part 75 rules, then additional measurement error is introduced. Comparing test results of Mr. McRanie's mercury analyzers operated during their best month confirm that the measurement precision does not support a rule of the stringency proposed by the Agency. C Tr., p. 1692 (August 22, 2006, p.m.); Ex. 133, slide 16. Moreover, the Part 75 monitoring regulations incorporated into this proposal by reference also allow a Relative Accuracy Test Audit ("RATA") test, conducted with USEPA's Reference Method, to be passed if the CEMS results are within ± 1.0 $\mu g/m^3$ of the Reference Method RATA test results. This means that the best estimate of mercury measurement error using USEPA's Reference Method is ± 1.0 $\mu g/m^3$. It is not technically feasible to expect the mercury CEMS to be any more accurate than the Reference Method.

There are several problems inherent with utilizing monitoring provisions developed for a cap and trade program, 40 CFR Part 75, for a command and control regulation. First, if the monitoring is inaccurate, imprecise, or biased, the worst result in a cap and trade program is that some sources have to buy more allowances than they actually needed, and some would have more excess allowances, or have to buy fewer, than would have been necessary with accurate measurement. In a command and control program, however, that inaccuracy can lead to civil and criminal penalties, a problem the Agency presented no answer for.

A second problem arises from the missing data substitution provisions of Part 75. These federal regulations target 100% data capture and impose increasingly draconian substitute data requirement where actual data is not available. 40 CFR § 75.33. This has been typical of cap and trade programs, which, for instance, encourage sources to install redundant monitors for SO_2 controls. The missing data substitution provisions, intentionally, are designed to almost invariably yield a result higher than actually occurred. As Mr. McRanie pointed out, USEPA long ago determined that missing data substitution is inappropriate for a hard cap, a command and control regulation, and specifically excluded it in USEPA's New Source Performance Standards. Ex. 132, pp. 3, 35-36. Again, in a cap and trade program missing data substitution will create a requirement to buy more allowances than the source in reality needed, but in a command and control program that missing data substitution will create violations where none exist, potentially imposing civil and criminal penalties where none were appropriate. The Agency has done nothing to address this problem.

Finally, there is the problem of determining percent reduction which requires accurate measurement of the mercury in the coal and accurate measurement of the mercury leaving the stack. As already demonstrated, the CEMS measuring the amount of mercury leaving the stack

are not accurate. Mr. McRanie pointed out a number of problems with the proposed method for determining the input mercury, the amount of mercury in the coal burned, and especially problems with the coal sampling requirements in the proposal. Ex. 132, pp. 36-37. He notes particularly that Part 75 provides a formula for determining the pounds of mercury in the emissions, but the Agency's proposal, while providing for collecting various data from coal samples, provides no methodology and no formula for calculating the amount of input mercury. Ex. 132, p. 37.

The inaccuracies of the CEMS and the imprecision of the approach to coal sampling and analysis will seriously compound themselves, yielding totally unreliable results. Even if both input and output could be accurately measured, because one, coal content, is measured on a daily basis from a single grab sample while output is determined from a CEMS, that could distort the results. For instance, if the single daily two-pound grab sample – large plants can burn several thousand tons of coal per day – yielded a lower than actual mercury content, proving 90% removal might be difficult, even thought the source may be achieving that result in reality, and the opposite, a high input result, might show compliance that was not actually being achieved. And again, in a command and control approach, these problems can yield violations where none in fact exist. And still again, the Agency has done nothing to address these problems.

As with the control technology, the mercury monitoring technology is also evolving. Ex. 133, slide 9; C Tr., pp. 1696, 1709-1711 (August 22, 2006, p.m.) Currently, mercury monitors experience downtime of 50-70% (C Tr., p. 1695 (August 22, 2006, p.m.)), leaving monitor operating time far short of the 100% data capture time targeted at 40 CFR § 75.33, which provides for increasingly more stringent missing data substitution as more monitoring downtime occurs. Mr. McRanie believes that mercury monitors will improve, but he claims that the

obvious problems have been addressed and addressing the remaining problems will be more difficult absent a breakthrough in the technology. C Tr., pp. 1695-1696 (August 22, 2006, p.m.) Mr. McRanie described mercury as sticky, a characteristic new to monitoring emissions. C Tr., pp. 1969, 1711 (August 22, 2006, p.m.) Measuring mercury, as Mr. McRanie's testimony demonstrates, is far more complex than measuring NOx or SO_2.

Mr. McRanie stated without hesitation that the long averaging time of the Illinois rule (*i.e.*, the 12-month rolling average) does not eliminate the problems currently inherent in mercury control, not only because of the removal technology itself, but also because of the limitations of the monitoring technology. C Tr. p. 1697 (August 22, 2006, p.m.); Ex. 133, slide 10. Poor reliability of mercury CEMS could make compliance mathematically impossible. C Tr., p. 1698 (August 22, 2006, p.m.); Ex. 133, slides 10, 12. Mr. McRanie's Slide 12 of Exhibit 133 illustrates that a unit would have to operate at a level of 0.60 $\mu g/m^3$ in order to comply with a limitation of 0.80 $\mu g/m^3$. C Tr., p. 1698 (August 22, 2006, p.m.); Ex. 133, slide 12.

Mr. McRanie provided charts of mercury measurements at the Trimble County Plant of Louisville Gas & Electric, Trimble County, Kentucky, that demonstrate the unpredictable variability of mercury measurements. *See* Ex. 133, pp. 13-14; C Tr., p. 1705 (August 22, 2006, p.m.) Mr. McRanie testified that the calibrated analyzers do not read the same, and there is currently not enough information about calibrators to understand why they measure so differently or show spikes at random. C Tr. pp. 1698-1700 (August 22, 2006, p.m.)

Mr. McRanie's final points from his presentation bear repeating:

- To My Knowledge, A Successful, Complete, 9-run, Hg Relative Accuracy Test Audit (RATA), as Specified In 40 CFR Part 75, Has ***Never*** Been Done
- The Hg RATA Reference Method Has A Precision Of 34% At 3 Micrograms/m^3 – Or ± 1 Microgram/m^3

> By Definition, It Is ***Impossible*** To Make Measurements More Precise Than The Reference Method

Ex. 133, slide 17; C Tr., p. 1700 (August 22, 2006, p.m.) (Emphasis in original.) If compliance cannot be measured, as Mr. McRanie has demonstrated, the rule is not technically feasible.

3. The inability to measure mercury removal violates the Due Process Clause of the Constitution.

Because mercury cannot be measured with sufficient accuracy to determine compliance with or violation of the rule, the proposed rule fails to provide adequate or fair notice as required by the Due Process Clause of the Constitution. A regulation imposing binding legal obligations must provide fair notice of those obligations to the party being regulated.[23] An agency has fairly notified a regulated entity of its obligations only if, by reviewing the regulations and other public statements issued by the agency, the entity would be able to identify with "ascertainable certainty" the conduct to which it must conform. *General Electric Co.*, 53 F.3d at 1329. In fact, whether a regulated entity has fair notice is determined "with reference to what [a company] familiar with the industry could reasonably be expected to know." *Ohio Cast Prods. v. OSHRC*, 246 F.3d 791, 799 (6th Cir. 2001).

As discussed above, the monitoring technology required by the proposed rule is not accurate enough for a company to know whether a unit is in compliance or not. Therefore, a regulated company cannot know, and therefore does not have notice, whether its emissions comply with the proposed rule. Accordingly, the proposed rule is invalid because it fails to provide adequate notice of what is compliant with the rule.

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[23] *General Electric Co. v. EPA*, 53 F.3d 1324, 1328-29 (D.C. Cir. 1995); *Trinity Broad. of Florida, Inc. v. FCC*, 211 F.3d 618, 628 (D.C. Cir. 2000); *United States. v. Chrysler Corp.*, 158 F.3d 1350, 1355 (D.C. Cir. 1998); *United States v. Hoechst Celanese Corp.*, 128 F.3d 216, 224 (4th Cir. 1997); *Diamond Roofing Co. v. OSHRC*, 528 F.2d 645, 649 (5th Cir. 1976); *Phelps Dodge Corp. v. FMSHRC*, 681 F.2d 1189, 1193 (9th Cir. 1982).

4. The Board should proceed cautiously.

Mr. DePriest and the company representatives (Mr. Menne, Mr. Ingram, Mr. Saladino, Mr. Yaros, and Ms. Tickner) all recommended that the Board proceed with caution with a mercury control requirement, though they did this in different ways.

Mr. DePriest, with many years' personal experience as well as Sargent & Lundy's institutional knowledge, expressed concerns about the reliability of the mercury-specific control technology and the availability of control equipment, in terms of materials and labor, where companies are not confident that the mercury-specific control technology will yield reliable and consistent compliance. Based upon Sargent & Lundy's experience, Mr. DePriest expressed concern regarding the ability of current ESPs to accept additional loading of carbon and still maintain compliance with PM and opacity limitations. C Tr., p. 1080 (August 17, 2006, a.m.) While Mr. Nelson continuously testified through his questions of Mr. DePriest and Mr. Cichanowicz that there is considerable variability on an ongoing basis in the PM loading to ESPs (C Tr., pp. 584-587 (August 16, 2006, a.m.); C Tr., pp. 1184-1186 (August 18, 2006, a.m.)), both Mr. DePriest and Mr. Cichanowicz remained concerned regarding the impact of the additional loading to the ESPs of carbon on PM and opacity compliance (C Tr., pp. 587-589 (August 16, 2006, a.m.); C Tr., pp. 1114-1117, 1191 (August 18, 2006, a.m.) Mr. Cichanowicz was concerned with the characteristics of the activated carbon because it is significantly different from the carbon in the ash loading typically handled by ESPs. C Tr., p. 593 (August 16, 2006, a.m.) Mr. DePriest is concerned with the fact that the ESPs were designed for use with bituminous coal, but most of the Illinois EGUs switched to low sulfur PRB coal in order to comply with SO_2 limitations for attainment purposes or with the Acid Rain Program. C Tr., pp. 1156-1157 (August 18, 2006, a.m.) Mr. DePriest says there is not much margin left in the ESPs to take on additional particulate loading. C Tr., p. 1159 (August 18, 2006, a.m.)

Mr. Menne and Mr. Ingram expressed caution in a different way. They joined with the Agency in proposing a significant amendment to the rule, the MPS. Mr. Menne's testimony very poignantly demonstrated the concern of all the companies regarding their ability to comply with the rule. Given the ongoing mercury removal technology problems and uncertainties, Ameren and Dynegy were willing to expend additional sums of money and to forego emissions trading in order to secure additional time to comply with the mercury rule.

Mr. Yaros and Mr. Saladino of Dominion/Kincaid stated that Dominion had systemwide plans for compliance with the CAIR, plans that did not rely upon emissions trading outside their own multi-state system of power stations. C Tr. pp. 1819-1820, 1865-1866 (August 23, 2006, a.m.) However, the Illinois mercury proposal upsets those plans in a major way. Dominion/Kincaid will not tolerate noncompliance and so will do whatever it must to comply with the rule. C Tr., pp. 1818-1819, 1871-1872 (August 23, 2006, a.m.) Compliance will require the expenditure of $8.6 million annually (C Tr., p. 1848 (August 23, 2006, a.m.)) just for sorbent at the Kincaid Generating Station, taking up about half of Kincaid's net income.[24] Kincaid's need for caution – and its lack of other opportunities for flexibility – will place the generating station in a very precarious economic position.

Ms. Tickner presented a different side of the concerns with this rule. Prairie State Generating Station is a greenfield plant. The appeal of its PSD permit by American Bottoms Conservancy, *et al.*, has just been denied by USEPA's Environmental Appeals Board. Order, *In re: Prairie State Generating Company, PSD Permit No. 189808AAB*, PSD Appeal No. 05-05 (Environmental Appeals Board, August 24, 2006) (denying review). Without suggesting that

[24] Mr. Saladino testified that the net income of the Kincaid Generating Station is $16.9 million. C Tr., p. 1848 (August 23, 2006, a.m.) While this may seem like a large amount of money, in fact it is not.

Peabody Energy, owner of Prairie State Generating Station, is not concerned about compliance, those most expressing caution with respect to Prairie State are its financiers. C Tr., p. 445 (August 15, 2006, p.m.) Without guarantees from vendors that the Prairie State Station will be able to comply with the Illinois mercury rule, financing becomes more difficult. C Tr., pp. 468-469 (August 15, 2006, p.m.) Financiers are very cautious about providing funding for a project that may not be able to operate because it may not be able to comply with all applicable requirements. The unwillingness of sorbent vendors to provide guarantees at the 90% removal level for existing units as well is further evidence of the fact that a 90% level of reduction is simply not proven at this point in time. C Tr., pp. 1116-1117 (August 18, 2006, a.m.)

C. Midwest Generation Recommends That the Board Not Adopt the Rule as Proposed.

Because the rule is not technically feasible, one of the statutory requirements for a rulemaking under Section 27 of the Act, the Board should not adopt the rule, at least as proposed. The Agency has not demonstrated that a reduction level of 90% is technically feasible. The Agency's willingness to join in the proposed amendments to the rule, *i.e.*, the TTBS and the MPS, signal the Agency's willingness to accept a rule that is less stringent than the original proposal. Midwest Generation recommends that the Board adopt nothing, allowing the CAMR to apply by operation of law or adopt the CAMR by reference. If the Board feels absolutely compelled to adopt a technology-based rule, it should be one that is reflective of the MPS but without any additional requirements for HS ESPs, without any specific removal rate or emissions limitation, and without inclusion of any provisions relating to NOx and SO_2.

III. THE RULE IS NOT ECONOMICALLY REASONABLE.

Section 27 of the Act requires that the Board, in adopting rules, determine the "economic reasonableness" of measuring or reducing any pollutant. The burden of proof is on the proponent, here the Agency, to demonstrate economic reasonableness. The Act does not define "economic reasonableness" and a review of Board and judicial decisions provides no succinct definition, but the Board has consistently recognized this requirement in its rulemaking decisions. Clearly the General Assembly, in imposing the requirement, concluded there must be some test of the economic efficacy of any environmental regulation, that a regulation for the sake of regulation – that merely because a regulation may arguably address an environmental issue – is not, in itself, sufficient to meet this statutory test. The courts have concurred, finding that the record in a rulemaking must support the conclusion that a rule is economically reasonable for a "substantial number of the individual sources in this state to comply by the specified deadline." *Commonwealth Edison* at 282.

Thus, the General Assembly intended some kind of comparison between the environmental and other benefits and the economic and other costs of a regulation. How rigorous, how quantitative this kind of cost/benefit comparison must be, the General Assembly did not explicate. Here, however, defining the rigorousness of that comparison is probably unnecessary because the Agency has failed to show any real, quantified – or even quantifiable – benefits, and the meager and largely speculative qualitative benefits the Agency tried to establish are so overwhelmed by the realistic costs of the proposed regulation[25] that the only plausible

[25] The Agency, in the course of this proceeding, first added the TTBS, contending it added flexibility to the rule, but it, in fact, has limited applicability and, at most, only delays the costs. In fact, the TTBS apparently was so insufficiently helpful to at least half the plants in the state – Ameren's and Dynegy's – that, with the Agency's concurrence, those companies supported the MPS. That provision also may only delay incursion of the costs and, in fact, may increase them as discussed below.

conclusion is that proposed rule, including the TTBS and MPS, fails any rational test of "economic reasonableness."

A. There Are No Quantifiable, or Even Reasonably Discernible Qualitative Benefits from the Proposed Regulation to Support Promulgation.

The Agency has established no benefits accruing to the targeted population or the environment in its support of this proposal. The lack of benefits resulting from the proposal can lead to only one conclusion: the rule is not economically reasonable.

1. The Agency failed to demonstrate any measurable health benefits from the proposed regulation.

As discussed in more detail in Section IV of these Comments, there will be no measurable or even discernable health benefits from the incremental emission reductions to be obtained by the proposed regulation beyond the reductions to be obtained under the federal CAMR. There is no dispute that mercury, consumed in fish or seafood in the form of methylmercury at high enough levels can be a health risk for certain sensitive portions of the population: women of child bearing age and children. For the incremental reduction in mercury emissions to have any health benefit, each of the following steps must occur: the reduced emission would have reached an Illinois waterbody; that waterway would have the right chemistry to convert this small, incremental amount of mercury to an incremental amount of methylmercury; that waterbody has the necessary biota for the incremental methylmercury to move up the biological chain to predator, sport fish; that fish has to be caught by a fisherman; that fish has to be consumed by a member of the sensitive population and has to contain alone, or in combination with other fish consumed by that person, sufficient methylmercury to actually pose a health risk. Had the Agency done any rigorous, probability analysis, even taking account of the earlier timing of the reduction under the proposed regulation, obviously, any benefit would

be so small, so improbable, as to be equivalent to zero compared to CAMR in the relatively short time there is even any difference between CAMR and the proposal.

If we do not limit the consideration to Illinois waterbodies, the already immeasurably small becomes even more infinitesimal. As shown in the Record, of total atmospheric loading of mercury worldwide, about 1% comes from U.S. power plants. Ex. 126, p. 3; C Tr., p. 1488 (August 21, 2006, p.m.) The amount from Illinois power plants is obviously significantly less than 1%. Taking that less than 1% and the incremental reduction the proposed rule may produce and applying the same probability analysis as outlined above (although at least here some of the mercury in question might reach the fish that people actually consume, ocean fish), the result would again be too tiny to measure – effectively zero.

2. The Agency has failed to establish any non-health benefits from the proposed regulation to support promulgation.

The Agency contended in the TSD (p. 189) that there are "recognized benefits" to the state from mercury control, although the Agency never established "recognized" by whom or what these recognized benefits are.

The TSD suggests the proposed regulation will support "existing jobs," yet the Agency's own evidence established that the proposal would increase costs for Illinois power generation companies, making them less competitive in interstate sales and thereby more likely to reduce rather than support existing jobs. Ex. 51, pp. 7-8.

The Agency also argues in the TSD that the proposal has a "potential" for adding "new jobs resulting from the installation and operating requirements" of the new control devices. TSD, p. 189. Simply stated, the potential jobs are a cost, certainly to the companies, and not benefits. Jobs from installation of the activated carbon injection systems are temporary at any given site. The equipment is allegedly so simple to operate, according to the Agency, that to

suggest there would be additional plant jobs as a result of this rule is not only wrong but also disingenuous. At most, the effect on costs and benefits is a wash, and to the extent this increases the companies' costs and thereby reduces sales, the impact on the companies' income, tax payments, jobs, and so forth will be adverse.

Finally, the Agency contends there is "potential" for an increase in tourism and recreational fishing as mercury levels drop in fish. To call this pure speculation would give "speculation" a bad name. First, as demonstrated in Section IV of these Comments, the Agency has failed to establish that the proposal will actually result in a reduction in the mercury content of fish in Illinois. Even if we were to assume some reduction will occur, there is utterly no evidence that even hints that any fisherman – or hunter or bird watcher – would consider this in determining where to expend his/her recreational dollars.

In fact, the record contradicts the Agency's speculative "potential." Thomas Hornshaw indicated he was about to leave on a fishing trip in Michigan. S Tr., pp. 85-86 (June 16, 2006, p.m.) When asked if he considered the mercury content in the fish in Michigan before deciding to go on the trip, he indicated that he did not. S. Tr., p. 86 (June 16, 2006, p.m.) Thus the only avowed fisherman to testify, a witness for the Agency, indicated that mercury in fish is simply not part of his calculus in determining where to expend his recreational dollars. There is no evidence to support the Agency's speculative potential that any other recreationalist would think differently.

Thus, the Agency has failed to prove that the proposal will produce any non-health benefits.

3. Regulation without benefit is merely regulation for the sake of regulation and is not economically reasonable.

Throughout the hearing, the concept was often posed, sometimes in questions of witnesses and sometimes in statements by witnesses, to the effect that recognizing mercury, at least under certain circumstances, can pose a risk; therefore, isn't it better to regulate than not to. Simply stated, under the Illinois Act, the answer is "No." If the regulations fail to yield any benefit at least commensurate with the cost, then it is regulation for the sake of regulation and fails the statutory test of "economic reasonableness."

Here the benefits, health and non-health, claimed by the Agency for the proposal are either so minute as to be immeasurable or so speculative and unsupported by any relevant evidence, as to be virtually non-existent. Thus, unless the costs are *de minimis*, and as is shown below the costs are not, then the proposal is economically unreasonable.

B. The Necessary Costs of Compliance with the Proposed Regulation Demonstrate That It Is Economically Unreasonable.

The primary costs that would be incurred if the proposal is adopted are the costs for the control equipment and the costs of operating that equipment. There is only a limited dispute as to the costs of various mercury control equipment; the dispute is what control equipment will be necessary to provide reasonable assurance of compliance. The Agency's position is that HCI alone is demonstrated to be effective to achieve compliance with the reduction/emission rate requirements of the proposals. The opponent's position is that, while HCI is promising and will control mercury emissions to some level, the technology has not been demonstrated to be reliably able over the long-term to consistently meet the very tight command requirements of the proposal.

The technological feasibility of the proposal is discussed in Section II, above; here it is important to recognize that the risks to the Agency and to affected industry from reaching the

wrong technological conclusion are very different. If the Agency's assertion that HCI will be sufficient[26] is wrong, it risks – nothing! If the companies were to accept the Agency's assertion and install only HCI and the Agency's assertion is wrong, the companies risk – criminal and civil enforcement actions by the Agency and USEPA, citizens' suits, possible penalties, and even shut-down orders. This significant difference in risk is certainly one reason the companies must be more cautious than the Agency in reaching a conclusion as to what technology will be necessary to have reasonable confidence of achieving the limits.

Probably nothing is more illustrative of the cautionary approach the sources must take than the testimony of Mr. Menne on behalf of Ameren and in support of the proposal with the MPS. Mr. Menne stated:

> to get the comfort level that we would achieve 90 percent on all units, we would put on what we think is the maximum amount of controls that exist today to try and get to that level, which would either be a combination of scrubbers and SCRs in each unit or ACI in combination with fabric filters or baghouses.

C Tr., pp. 257-258 (August 15, 2006, a.m.). Mr. Marchetti testified similarly. *See* C Tr., p. 1298 (August 18, 2006, p.m.).

Thus, a major difference in the economic analysis between the Agency and others is the assumption as to what control equipment will need to be installed. Because of the command nature of the proposal and its 2009 deadline, the analysis was somewhat complicated by trying to deal with what technology would have been installed for CAIR and that might be accelerated for the 2009 deadline. Ultimately, however, the similarity between Dr. Smith's and Mr. Marchetti's analyses compared to the Agency's illustrates that the primary difference is in what technology will be installed for compliance.

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[26] All the parties agree that HCI alone will not be sufficient for the three units with HS ESPs.

The economic analysis of the risk-free Agency seems, comparing the ICF Resources Inc. analysis in the TSD (pp. 167 *et seq.*) and Ezra Hausman's testimony (S Tr., pp. 274-291 (June 22, 2006), 292-447 (June 23, 2006)) somewhat inconsistent but apparently concludes that the proposal will cost $32 million per year more than CAMR in 2010 through 2017. TSD, p. 159. As discussed above, there is no specific definition of economic reasonableness, no "bright line" where "x" costs versus "y" benefits determines economic reasonableness. Even if such definition or ratio existed, the total failure of the Agency to even attempt to develop any quantification of the benefits demonstrates that any benefits are so miniscule as to fail to justify a cost of even $32 million annually more than CAMR, or $224 million over the identified time period. Furthermore, because of trading under CAMR and the use of CAIR co-benefits, the costs for CAMR are spread more evenly over the period, while the costs for the proposal are "front-end loaded." As discussed below, most of the costs under the proposal would be incurred by 2009.

Of course, the Agency's cost estimate is a grotesque underestimate of the costs the regulation will, in reality, impose. The record established, and as discussed above, sources facing criminal and civil violations, simply cannot – will not – take the risk that HCI will be sufficient to meet the draconian "command" and timetable of the regulation. Significantly, the analyses of both Dr. Smith and Mr. Marchetti are far more similar to each other than to the Agency's analysis; both show the capital cost alone of the regulation will be over $1 billion more than CAIR/CAMR.

Mr. Marchetti, based on the technology and timing of installation that would be necessary to provide some reasonable assurance that the sources could achieve compliance, concluded that the capital costs alone would be $1.77 billion. Ex. 118, p. 7; C Tr., p. 1298 (August 18, 2006,

p.m.) Adding non-capital costs, Mr. Marchetti found that the regulation would cost Illinois generators about $2 billion or about $200 million per year for ten years "over and above what Illinois generators would pay for CAIR and CAMR." C Tr., p. 1301 (August 18, 2006, p.m.); Ex. 118, p. 11. With the absence of quantified benefits, even giving some credit to the speculative, qualitative benefits alleged by the Agency, there is no way this regulation can pass any rational test of economic reasonableness.

Dr. Smith, testifying on behalf of Ameren in support of the regulation with the inclusion of the MPS, reaches a conclusion comparable to Mr. Marchetti's. In discussing her analysis of costs, Dr. Smith indicated that under CAIR/CAMR, Ameren would need to raise almost $200 million by 2010 and then stated, "I estimate that Ameren must raise over three times that amount by 2009 under the IL Rule – nearly $650 million in 2006 present value." Ex. 77, p. 11.[27] In other words, the proposal would impose on Ameren alone some $450 million more than CAIR/CAMR in capital costs and just by 2009.

Obviously, for all the Illinois EGUs that amount would be even greater in total, and Dr. Smith addressed this question in her testimony: "So I estimated the Illinois Rule without the MPS provision would cost Illinois generators about $1.13 billion dollars more than CAIR/CAMR. . . . [T]his cost is the present value to all the costs of the generators between 2006 and 2020." C Tr., pp. 398-399 (August 15, 2006, p.m.) And, as with Ameren, most of the capital would have to be raised by 2009. Dr. Smith and Mr. Marchetti were using somewhat different time periods and calculi, but clearly whether the proposal costs $2 billion or "only" $1.13 billion and annually about $200 million or about $81 million, there are no benefits demonstrated in the record that make such costs economically reasonable.

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[27] The timing of the need to raise the necessary capital was a major concern to Ameren.

Nor do the so-called flexibility provisions, the TTBS or the MPS, alter this conclusion. First, the Agency alone advanced the TTBS but presented no evidence as to its impact on costs (or, for that matter, benefits). The TTBS by its terms can be utilized by essentially no more than one-quarter of the Illinois generators[28] and, for any sources that can and do utilize it, the effect would merely postpone some of the costs without significantly changing them.

As to the MPS, Dr. Smith did analyze the impact on costs if only Ameren were to elect to utilize the MPS. She concluded that the present value of the costs of the proposal under those circumstances would actually increase to $1.35 billion, about $96 million per year. C Tr., p. 400 (August 15, 2006, p.m.); *and see* Ex. 77, p. 12, Figure 4. Logically, if more sources than just Ameren were to elect to comply with the MPS, the costs of the regulation would increase further.

This raises an interesting question – why is Ameren supporting the MPS if it costs more? For individual companies, economics is not only the amount but often the timing of the amount. As Dr. Smith pointed out:

> The investment requirements of the CAIR/CAMR rule alone present financing challenges to electricity generating companies nationwide, and the IL Rule adds a yet larger burden, and in a foreshortened period of time. There are substantial benefits to companies if they can spread the capital costs over a longer period of time.

Ex. 77, p. 10. This illustrates, in addition to the absolute costs, another aspect of the economic unreasonableness of the proposal: the need for the regulated entities to raise and expend in an incredibly foreshortened period of time huge amounts of capital. Not only is there an extreme difference between the costs of CAMR and the Illinois proposal, but the economic impact is aggravated by the forced timing of the expenditure.

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[28] The TTBS is limited to 25% of a company's generating capacity or 25% of the combined capacity of the "orphans." *See* discussion in Section II.A.3.c, above.

C. As the Proposed Rule Is Not Economically Reasonable, Adoption Would Be Arbitrary and Capricious.

Even on the assumptions made by the risk-free Agency, the cost of $32 million per year is unjustified by any benefits established in this Record for the proposal. Clearly, on any of the far more probable actual costs analyses of Dr. Smith and Mr. Marchetti – whether $81 million, $96 million or $200 million per year – the costs of this proposal are so grossly disproportionate to even all of the speculative or potential benefits alleged, the proposal cannot be found to meet the statutory requirement of economic reasonableness and promulgation of the regulation, at least as currently proposed to the Board, would be arbitrary and capricious.

IV. THE RULE DOES NOT ACCOMPLISH THE AGENCY'S STATED PURPOSE FOR PROPOSING THE RULE.

The Agency has stated that its purpose for proposing the mercury rule was to address three issues: (1) to comply with the emission cap imposed by the CAMR, (2) to protect the health of Illinois citizens, and (3) to satisfy the requirement that Illinois develop and implement a TMDL program addressing mercury for mercury-impaired waterbodies. TSD, pp. 26-27, 97; Statement of Reasons, p. 8; Ex. 8, pp. 3-5; S Tr., pp. 50-52 (June 14, 2006). None of these goals will be achieved by the proposed rule.

A. The Rule Does Not Ensure That Illinois Will Comply with the Mercury Emissions Cap Imposed by the CAMR.

The initial impetus for a mercury rule was the CAMR. The CAMR requires that emissions from Illinois' coal-fired power plants greater than 25 MWe not exceed 1.594 tons per year during 2010-2017 and 0.629 ton per year in 2018 and thereafter. 40 CFR § 60.24(h)(3); 70 Fed.Reg. at 28649.

Throughout this rulemaking, the Agency has stated that USEPA supports state efforts to comply with the CAMR cap other than through the trading program established in the CAMR at 40 CFR 60.Subpart HHHH and further that USEPA supports states seeking reductions more stringent than required by the CAMR. Statement of Reasons, p. 10; TSD, pp. 89-90. This is an exaggeration of what USEPA has said. USEPA devised an elaborate trading system to address mercury reductions nationwide. USEPA would not have devised that system and subjected itself to intense criticism (*see* comments in USEPA's Docket OAR-2002-0056) if it had intended for states to meet their mercury caps in a manner other than through the national trading program. What USEPA does say on this point in several places in the Preamble to the CAMR, includes the following:

> States have the flexibility to meet these State budgets by participating in a trading program or establishing another methodology for Hg emissions reductions from coal-fired electric generating units. . . . States have the ability to require reductions beyond those required by the State budget.

70 Fed.Reg. at 28621.

> For States that elect not to participate in an EPA-managed cap-and-trade program, their respective State Hg budgets will serve as a firm cap.

70 Fed.Reg. at, 28624.

> [E]ach State must submit a demonstration that it will meet its assigned Statewide emission budget. . . .

70 Fed. Reg. at 28632.

> Moreover, States remain authorized to require emissions reductions beyond those required by the State budget, and nothing in the final rule will preclude the States from requiring such stricter controls and still being eligible to participate in the Hg Budget Trading Program.

70 Fed. Reg. at 28632. "[R]emain[ing] authorized" to comply with the emissions cap in a manner other than participation in the national trading program and not being "preclude[d] . . . from requiring . . . stricter controls" is hardly the enthusiastic support for alternative approaches that the Agency intimated.

Finally, the actual rule at 40 CFR § 96.60.24(h), which sets forth the elements of the state submissions clearly assumes – and therefore, prefers – compliance through participation in the trading program:

> (6)(i) Notwithstanding the provisions of paragraphs (h)(3) [emissions caps for EGUs] and (5)(i) [legal authority] of this section, if a State adopts regulations substantively identical to subpart HHHH of this part (Hg Budget Trading Program), incorporates such subpart by reference into its regulations, or adopts regulations that differ substantively from such subpart only as set forth in paragraph (h)(6)(ii) of this section [flexibility in the allowance allocation methodology], then such allowance system in the State's State plan is automatically approved as meeting the requirements of paragraph (h)(3) of this section. . . .
>
> (ii) If a State adopts an allowance system that differs substantively from subpart HHHH of this part only as follows, then the emissions trading program is approved. . . .
>
> * * * *
>
> (7) If a State adopts an allowance system that differs substantively from subpart HHHH of this part, other than as set forth in paragraph (h)(6)(i) or (ii) of this section and will be reviewed by the Administrator for approvability in accordance with other provisions of paragraphs (h)(2) through (5) of this section and the other applicable requirements for a State plan under this subpart, provided that the Hg allowances issued under such allowance system shall not, and the State plan under paragraph (h)(1) of this section shall state that such Hg allowances shall not, qualify as Hg allowances under any allowances system approved under paragraph (h)(6)(i) or (ii) of this section.

40 CFR §§ 60.24(h)(6) and (7); 70 Fed.Reg. at 28650. (Emphasis added.) The Agency's implications regarding USEPA's receptivity of the program that the Agency has proposed are overstated. USEPA clearly prefers that states comply with the CAMR through the federal trading program. USEPA's standard for approvability of a mercury reduction program such as proposed by the Agency is much higher than for those states that choose to comply through the trading program.

When asked about the approvability of the program, the Agency's answers were less than satisfactory. Mr. Ross stated that discussions are ongoing with regard to the approvability of the Illinois approach. S Tr., pp. 116-117 (June 12, 2006); C Tr. pp. 308-309 (August 15, 2006, a.m.)

Midwest Generation recommends that the Board adopt the provisions of 40 CFR 60.Subpart HHHH by reference, as provided by 40 CFR § 60.24(h)(6)(i), to ensure that the state complies with the CAMR, or adopt nothing to allow the federal CAMR to apply by operation of law.

B. The Agency Has Not Demonstrated That the Proposed Rule Will Protect the Health of Illinois Citizens or Eliminate Mercury-Impaired Waters to a Degree Greater Than the CAMR.

The second purpose for this proposed rule is the protection of the health of Illinois' citizens. The third and related purpose is the elimination of mercury-impaired waters in Illinois and, thereby, the need for mercury TMDLs in Illinois. In both cases, the goals are to be achieved, in the Agency's view, by requiring reductions of mercury emissions from Illinois power plants beyond the reductions required under the CAMR. If such additional emission reductions do not achieve these goals, then the justification for mercury emission reductions beyond CAMR fails.

Waters in Illinois designated impaired for mercury are so designated due to the presence of fish containing methylmercury above Illinois fish consumption advisory levels. S Tr., pp. 24-

25 (June 14, 2006). In the Agency's view, the presence of methylmercury in fish above fish consumption advisory levels also creates the potential health issue that the Agency seeks to address. Accordingly, both of these Agency goals assume that the proposed rule will decrease fish tissue methylmercury levels enough to eliminate or at least reduce significantly mercury-impaired waters in Illinois and to provide a meaningful health benefit to Illinois residents.

There is a very attenuated relationship between the emissions of mercury by emissions sources and fish tissue methylmercury concentrations. Mercury emissions may impact fish tissue methylmercury levels in a given body of Illinois water only if a number of events occur: emissions in Illinois → deposition in Illinois waterbodies → settle into sediment → methylation → uptake through the food chain to predator fish (largemouth bass is the species that Illinois uses as its representative fish for this purpose). Potential health impacts to Illinois citizens from mercury emissions require additional steps: methylmercury tissue levels rise above a level of concern in a fish population → anglers catch such fish and do not release them, as required for some fish in some waterbodies → Illinois citizens who are in the sensitive population eat such fish in sufficient quantities to risk health effects. Accordingly, a reduction in mercury emissions will provide the benefits the Agency claims only if such emission reductions transfer through this entire series of steps, ultimately reducing fish tissue methylmercury concentrations in fish to levels that eliminate a health risk to those who eat such fish that otherwise would have been present.

As discussed below, the Agency has assumed its way through this chain of events, providing conjecture rather than evidence to support its claimed benefits. The Agency has not demonstrated that its goals will be achieved through compliance with the proposed rule.

1. The Agency has not demonstrated that reductions of mercury emissions at Illinois power plants will result in reductions in deposition of mercury in Illinois, either in the vicinity of the power plants or in those areas of the state with mercury-impaired waterbodies.

Because one claimed justification of the rule is to protect the health of Illinois citizens and a second is the elimination of mercury-impaired waters, in both cases through the reduction of fish tissue methylmercury levels in Illinois, whether there is a local impact on such methylmercury levels from power plant emissions of mercury is an important issue. Chemical transport modeling, as Krish Vijayaraghavan calls it (C Tr., p. 1355 (August 21, 2006, p.m.), or deterministic modeling, as Jerry Keeler calls it (TSD App. B, p. 4), is the tool for demonstrating whether mercury emissions from Illinois' power plants affect Illinois' waterbodies, which is the first step in the chain of proofs that is necessary to determine whether human health and mercury-impaired waters would be affected by reduction of Illinois power plant emissions of mercury. If there is no local deposition or if local deposition is not to impaired waterbodies, reducing the emissions will not have the desired effect.

The Agency presented no chemistry transport or deterministic modeling data or any dispersion modeling to support its claim that Illinois coal-fired power plants contribute to mercury deposition in Illinois waterbodies. In fact, the Agency canceled its contract with Environ, who was performing CAMx chemistry transport modeling to determine if there is mercury deposition from Illinois power plants contributing to the impairment. S Tr., pp. 477-478, 483-484 (June 23, 2006). The Agency received preliminary results from Environ (Ex. 65), did not like those results, and canceled the contract. S Tr., pp. 484-485 (June 23, 2006). If one of the Agency's goals through this rulemaking is to reduce mercury deposition to mercury-impaired waterbodies in order to protect the health of Illinois' citizens and eliminate mercury-impaired waters, then the Agency must demonstrate (1) that the target of the rule is the source of

the perceived problem and (2) that the proposed rule will have the desired effect of reducing deposition from Illinois power plants to Illinois waters. The Agency did not do this. USEPA, on the other hand, expended great effort in analyzing the effects of mercury deposition and the best way to reduce such deposition relative to EGUs, and determined that the regional approach of the CAMR was the best approach. *See generally* 70 Fed.Reg. 28606 *et seq.*

What the Agency did present was testimony by Dr. Keeler essentially about two studies he performed, the Lake Michigan Mass Balance Study in 1994-1995 (*see* Ex. 26) and the Steubenville study, with some discussion of the Detroit study of 2005 (*see* Ex. 27) and the Florida study of 2002 (*see* Ex. 20). None of these studies states whether Illinois' coal-fired power plants contribute towards the impairment in Illinois' mercury-impaired waterbodies, and none of them predicts whether the Illinois mercury rule will have an effect on the level of impairment in Illinois' mercury-impaired waterbodies. Therefore, the Agency cannot know and so cannot assert that the mercury rule it has proposed will result in protection of the health of Illinois' citizens.

According to Dr. Keeler, the Lake Michigan Mass Balance Study showed typical urban contributions to atmospheric mercury levels over the Lake Michigan basin. TSD, App. B, p. 4. Dr. Keeler estimates that "the urban/source area contributed almost 20% of the total deposition to Lake Michigan, and 14% to the wet deposition." TSD, App. B, p. 9. Moreover, mercury levels in the urban area were significantly higher than in rural areas. TSD, App. B, p. 4. Dr. Keeler observed in the Detroit study that mobile sources contributed to urban mercury levels. S Tr., p. 22 (June 15, 2006). Logically, mobile sources contribute to mercury levels in the Chicago area, as well.

The two studies that Dr. Keeler relied upon in his testimony and that the Agency particularly relied upon to support this proposal were the Steubenville study and the Florida/Everglades study (Ex. 20). The Agency also relied upon the Massachusetts study. Ex. 21. The Steubenville study, the subject of much controversy in this rulemaking because the Agency, through Dr. Keeler, relied upon it prior to completion of peer review and publication,[29] was a study specifically of wet deposition of mercury at Steubenville, Ohio, at the eastern end of the Ohio River Valley in an area that is the home of many coal-fired power plants as well as other types of industry. The Steubenville study concluded that approximately 70% of the mercury captured at the receptor site was from "local" coal-fired power plants. S Tr., pp. 57-58 (June 15, 2006); Ex. 32, slide 24.[30] This was based on an analysis of other elements and compounds monitored at the same time. S Tr., pp. 183-185 (June 15, 2006). The primary elements and compounds measured at Steubenville were sulfur, selenium, and NO_3, all of which are indicative of coal-fired power plants. S Tr. pp. 60-61 (June 16, 2006); Ex. 32, slide 19.

There is general agreement among the experts that the divalent or oxidized form of mercury, also known as reactive gaseous mercury and expressed as Hg^{2+}, Hg^{II}, or RGM, is the form that methylates and thus is taken up in the food chain and that is deposited during precipitation events. *C.f.* Ex. 127, slide 3; S Tr., pp. 23-24 (June 15, 2006). There is also general agreement among the experts that the elemental form of mercury, expressed as Hg^0, is not the form that methylates and is not so readily deposited during precipitation events. *C.f.* Ex. 127, slide 3; S Tr., pp. 34-35 (June 15, 2006). Moreover, there is general agreement that the form of

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[29] The peer-reviewed report, PC 6292, was finally provided on September 8, 2006, two and a half weeks after the hearings were adjourned.

[30] The slides in the PowerPoint presentation comprising Exhibit 32 are not numbered. We numbered them for purposes of reference, calling the title slide Slide 1.

mercury emitted through the burning of PRB coal is mostly Hg^0, while the species of mercury emitted as a result of the burning of bituminous coal is mostly Hg^{2+}. S Tr., pp. 115-117 (June 15, 2006). It was made clear at the hearings that the vast majority of coal burned in Illinois is PRB. Mr. Menne testified that only approximately 16% of the coal that Ameren burns is bituminous. C Tr., p. 171 (August 14, 2006). According to Exhibit 44, Ameren's EGUs without SO_2 control[31] comprise approximately 9% of the state's total MW. CWLP and SIPC, representing together only approximately 4% of the statewide MW, burn bituminous coal. Ex. 44. Exhibit 44 indicates that approximately 15% of Dynegy's units, comprising 3% of the total MW in the state, currently burn bituminous coal.[32] And that's it. Only 16% of the total MW in the state burn bituminous coal. The species of mercury predominantly emitted by Illinois' power plants, then, is Hg^0.

Dr. Keeler was asked at hearing what type of coal was burned within what he defined as the "local"[33] area of Steubenville. S Tr. p, 116 (June 15, 2006). Dr. Keeler said he did not know and that it did not matter. S Tr. pp. 115-116 (June 15, 2006). Midwest Generation disagrees with Dr. Keeler's conclusion. It certainly does matter what type of coal is burned, because the

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[31] Exhibit 44 includes SO_2 as a sulfur control measure.

[32] Exhibit 44 does not identify the fact that Hennepin has burned subbituminous coal since 1999 and Vermilion since 2005. For purposes of this discussion, however, these Comments reflect the information contained in Exhibit 44.

[33] Note that Dr. Keeler's definition of "local" is not static and is not consistent with the more usual definition of the word. Dr. Keeler defines "local" as the distance that an air mass travels in a day. S Tr., p. 140 (June 15, 2006). Air masses do not travel static distances per day; therefore, the definition is not static, and the distance that is "local" one day is not likely to be the same distance that comprises "local" on any other day. In contrast, the dictionary defines "local" as "**3.** pertaining to a city, town, or small district rather than an entire state or country: *local transportation.*" Webster's New Universal Unabridged Dictionary (1996). In the NOx SIP call context, "local" was closer in to a point, such as a nonattainment area or perhaps a small state but less than the whole of a larger state.

type of coal burned will influence the amount of mercury that is available for local deposition during precipitation events. The Agency relied upon the preliminary results of the Steubenville study to support its theory that emissions from Illinois' power plants impact Illinois' waterbodies, particularly those that are mercury-impaired. The Steubenville study does not support this hypothesis. The form of mercury primarily emitted by Illinois' power plants is Hg^0, while that emitted in the vicinity of Steubenville is Hg^{2+}, the form that is more readily deposited. Secondly, except for the very southern-most tip of Illinois, Illinois is not influenced by the Ohio River Valley, which featured strongly in the Steubenville analysis. Steubenville lies in a unique geographical setting: at the eastern end of the Ohio River Valley with a mountain range to the east affecting weather patterns. There is nothing about the Steubenville study that is transferable to Illinois' circumstances.

With respect to the preliminary Steubenville results, there are several additional points. First, the determinative or chemical transport modeling performed by USEPA in the course of the CAMR and by AER both in the course of the development of comments on the CAMR and in the course of its modeling performed for this rulemaking predicted deposition within the range of that measured by Dr. Keeler. C Tr., p. 1404 (August 21, 2006, p.m.); Ex. 32, slides 25 and 26. Second, Dr. Keeler stated that there were hurricane events that triggered large amounts of precipitation in the Ohio River Valley during the course of the Steubenville study. S Tr., pp. 9-10 (June 16, 2006, a.m.) This may be reflected in the back trajectories presented in Exhibit 32, slide 23. *See also* Ex. 32, slide 24 ("In 2004, > 8% of Hg wet deposition occurred during 1 event"). Similarly, Peter Chapman examined mercury levels in sediment and fish relative to the location of Illinois power plants and found no consistent relationship. Ex. 129, p. 7; S Tr., pp. 4-5, 47-48 (August 22, 2006, a.m.) If there were to be an impact on health resulting from

emissions from Illinois power plants, one would expect to it to be apparent in those lakes next to the bituminous coal-fired plants. This just is not what is true in Illinois. *See* Ex. 23.

The Agency ignored the Illinois data in its possession and relied upon the Florida/Everglades study to support its position that local reductions of mercury will produce local reductions of deposition. However, the Agency selectively reported the results of the Florida/Everglades study. Contrary to the report in the TSD, only some of the monitoring sites in the Florida study measured reductions in deposition. TSD, § 5.2.1, pp. 81-85; S Tr., pp. 28-29 (June 15, 2006); C Tr. pp. 16, 65 (August 22, 2006, p.m.)[34]

To the extent the Florida study supports the view that reduction of emissions has an impact on local deposition, the study is, nonetheless, largely irrelevant because, given the types of sources and the nature of the environment at issue in the Florida study, there is no reason to expect similar results in Illinois. The Agency's naked assumption that the results are transferable does not make it so.

The sources in the area identified as contributors to mercury deposition in the Everglades included coal-fired power plants. However, the greatest number of sources and those whose mercury emissions were significantly reduced were various types of incinerators (or waste combustors).[35] Factors that affect deposition of any pollutant include the type of source, its fuel, and the physical configurations of that source. There are several very significant differences in the case of incinerators, as compared to power plants.

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[34] The Florida/Everglades study is discussed in more detail in the section of these Comments below regarding the water quality aspects of the mercury chain.

[35] So far as we know, there were no specific mercury reductions achieved at Florida power plants unless it resulted from compliance with Title IV of the Clean Air Act (the Acid Rain Program) or was in conjunction with an ozone attainment program. Note that Florida power plants were not subject to the NOx SIP call and so were not required to reduce NOx more than required by Title IV.

The fuel or substance burned in incinerators is extremely variable, while power plants burn a more consistent form of fuel, coal. The velocity of the emissions exiting the stack of an incinerator tend to be much less than that of power plants. C Tr., p. 1472 (August 21, 2006, p.m.) Incinerator stack heights are significantly shorter than power plant stack heights. Ex. 126, p. 16; C Tr., p. 1469 (August 21, 2006, p.m.) Mr. Vijayaraghavan testified that incinerator heights are less than 100 meters; the average municipal waste incinerator stack height is about 60 meters, and medical waste incinerator stacks are even shorter at less than 25 meters. C Tr., p. 1471 (August 21, 2006, p.m.) The shortest stack at an affected power plant in Illinois is 60 meters at Ameren's Hutsonville Power Plant.[36] Ex. 28. Velocity and stack height impact the altitude into the atmosphere that emissions will attain – plume rise. C Tr., pp. 1464-1465, 1471 (August 21, 2006, p.m.) Because incinerators' plume rise is lower than power plants' plume rise, incinerators are likely to have a greater impact on local areas. That is, the emissions from incinerators are not as likely to be transported great distances, which has been demonstrated to be the case with power plants. *C.f.*, Ex. 127, Slides 3 and 5. Therefore, it is not surprising that reductions in emissions from incinerators may have a beneficial impact on local areas.

In addition, the emissions from incinerators tend to have more Hg^{2+} than the emissions from coal-fired power plants. Ex. 126, pp. 15-16. As Dr. Keeler's several studies have demonstrated, Hg^{2+} is more readily deposited during precipitation events. *See also* Ex. 127, slide 3. Therefore, it is not surprising that reductions in emissions of Hg^{2+} from incinerators, with their low plume rise, would have a beneficial impact on local areas.

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[36] We note that Hutsonville is a plant that would not receive any mercury controls, at least in the near term, under the MPS, and yet if any plant is going to affect the local area, it is this one. Only six other units have stack heights less than 100 meters. One belongs to CWLP; the rest belong to Ameren and Dynegy, with whom the Agency entered into Joint Statements supporting the MPS. *See* Ex. 28.

The results of the Florida/Everglades study are not transferable to Illinois for still another reason. Illinois does not experience near the rainfall amounts that the Everglades does. Illinois does not directly experience hurricanes. Illinois' impaired waters do not in any way resemble the Everglades in terms of area, characteristics, vegetation, and any number of factors. And, as discussed below in more detail, reductions of mercury emissions from Illinois power plants will not have the same result as reductions of mercury emissions from the incinerators in Florida.

When these numerous and significant differences are considered, clearly the deposition pattern in the Florida study cannot be assumed for Illinois and, in fact, a different deposition pattern for Illinois should be expected. Consistently, as discussed above, the Illinois data simply does not show a pattern of local deposition and resulting increased levels of fish tissue mercury in the vicinity of Illinois power plants.

The power generation companies presented the only chemistry transport modeling of predicted mercury deposition in Illinois by Illinois power plants. Exs. 126 and 127. As Mr. Vijayaraghavan testified, AER's model, called TEAM, has been evaluated against measured levels of mercury collected by the Mercury Deposition Network and against speciated ambient mercury concentrations. C Tr., p. 1403 (August 21, 2006, p.m.); Ex. 127, slide 6. Both the TEAM and USEPA's model CMAQ results are consistent with the monitored results of the Steubenville study. C Tr., pp. 1404, 1513 (August 21, 2006); Ex. 127, slides 6 and 9. AER has updated the TEAM to reflect state-of-the-science knowledge regarding the oxidation and reduction of mercury in the atmosphere. Ex. 126, p. 8. TEAM's performance has been peer-reviewed and published. C Tr, p. 1354 (August 21, 2006, p.m.); Ex. 127, slide 6. TEAM's results correspond with USEPA's deterministic modeling using the CMAQ model. C Tr., p. 1355 (August 21, 2006, p.m.) Dr. Keeler made the point that predictive models such as the

TEAM and CMAQ are not accurate because they rely upon understanding the chemical processes that occur in the atmosphere, while receptor modeling reflects what is actually in the atmosphere and cannot predict the future. S Tr., pp. 167-169, 194,204 (June 15, 2006). He asserted that his approach, receptor modeling, presents a more accurate picture of mercury deposition. S Tr., pp. 167-169 (June 15, 2006). Both modelers, though, stated, either at hearing or in exhibits to this rulemaking, that their respective approaches are independent of each other and complement each other. C Tr., pp. 1512-1513 (August 21, 2006, p.m.); Ex. 32, slide 7. In any event, scientists and agencies routinely use models because they are the best tool available for predicting the effect of various emissions reduction levels on ambient air quality measurements. For these reasons, the Board should consider AER's modeling results in this matter.

The area that AER modeled is illustrated by all of the maps in Ex. 127. It includes all of Texas and portions of the states to the north and west of Texas and east to the Atlantic Ocean. The region extends from Maine to the Florida Keys. AER used 20k, grid cells in the modeled area. C Tr. p. 1359 (August 21, 2006, p.m.) The Agency attempted to attack AER's modeling on the basis of grid size. However, as Mr. Vijayaraghavan explained, AER "applied a grid model with 20 kilometer grid spacing because our objective was to assess Hg deposition both close to and far from emission sources." C Tr., p. 1359 (August 21, 2006, p.m.) National and international conditions surrounding the modeled region are considered as boundary conditions. C Tr., p. 1379 (August 21, 2006, p.m.) The areas outside the modeled area were reflected through larger grid cells than inside the modeled region. Global conditions were boundary conditions for the larger grid. *See* Ex. 127, slide 5.

AER found through its modeling that 19% of the mercury deposition in Illinois is attributable to all power plants in the U.S. C Tr., pp. 1370-1371 (August 21, 2006, p.m.); Ex. 127, slide 14. The balance of mercury deposition in Illinois, *i.e.*, 81%, is attributable to other source types and non-U.S. power plants, *i.e.*, global sources. C Tr., p. 1372 (August 21, 2006, p.m.) In 2010, CAIR/CAMR will result in approximately a 5% reduction in mercury deposition in Illinois. C Tr., p. 1410 (August 21, 2006, p.m.); Ex. 127, slide 14. Assuming no change resulting from the MPS, the Illinois mercury rule would result in approximately an additional 4% reduction of mercury deposition in Illinois. C Tr., p. 1410 (August 21, 2006, p.m.); Ex. 127, slide 14. This projected 4% additional level of reduction beyond CAIR/CAMR is critical for assessing the claimed benefits of the proposed Illinois rule because the Agency supports its proposal by claiming that it will provide health and impaired-water benefits beyond CAIR/CAMR. In other words, if the Illinois proposal provides no meaningful human health and impaired-water benefits beyond CAIR/CAMR, the Agency's claimed benefits are illusory and the justification for the proposal fails.

Both Dr. Chapman and Gail Charnley, asked about the significance of the 4% level of reduction, asserted that it would not have the result that is the intent of this rule; *i.e.*, it would not result in a measurable reduction in fish tissue methylmercury levels in Illinois and, therefore, it would not cause the removal of waterbodies in Illinois from the mercury-impaired list,[37] and it would not have an impact on the health of citizens in Illinois. C Tr, p. 12-15 (August 22, 2006, a.m.); C Tr., p. 1660 (August 22, 2006, p.m.) Dr. Charnley stated that she did not believe that

[37] The waters in Illinois that are designated impaired for mercury are so designated based upon the presence of fish containing mercury above fish tissue consumption advisory levels. *See* S Tr., pp. 24-25 (June 14, 2006). Accordingly, if fish tissue mercury levels do not decrease to levels below fish consumption advisory levels, then impaired use designations are not eliminated.

the impacts could even be traced, and Dr. Chapman testified that the additional 4% reduction would not have a measurable impact on fish tissue mercury levels in Illinois. C Tr., p. 1660 (August 22, 2006, p.m.); Ex. 129, p. 11. When asked whether she believed that the impacts of CAIR/CAMR could be traced, she indicated that they could not. C Tr., pp. 1671-1672 (August 22, 2006, p.m.) AER found that the difference in deposition between the Illinois mercury rule and the 2020 CAIR/CAMR reductions is less than 10%. Ex. 127, slide 24. AER also found that there are no hot spots.[38]

Midwest Generation presented a study that the Agency should have – the chemistry transfer modeling study – that shows that the Illinois mercury rule will have virtually no impact on mercury deposition levels in Illinois. With no impact on levels of deposition, the rule's impact on improving mercury-impaired waterbodies and ultimately protecting public health are so far attenuated as to be nonexistent.

2. The Agency has not demonstrated that reductions of mercury emissions at Illinois power plants will result in improvement of mercury-impaired waterbodies or provide health benefits to Illinois residents.

The Agency contends that a 90% mercury emission reduction rule is justified because such a reduction will reduce mercury fish tissue concentrations to levels that will eliminate mercury-impaired waters from Illinois and that will provide a health benefit to Illinois residents beyond that provided by CAMR. The proposed rule will not accomplish these goals. The proposed rule, if adopted, would not measurably reduce the levels of mercury in fish in Illinois waterbodies. Accordingly, the proposed rule would not eliminate mercury-impaired waters in

[38] "Hot spots" are those areas in the vicinity of a source with elevated levels of a contaminant. In this matter, the contaminant of concern, of course, is mercury. So when AER concludes that there are no hot spots, it means that there are no elevated concentrations of mercury predicted within the vicinity of any of the power plants under any scenario. *See* C Tr.,, pp. 1459-1461 (August 21, 2006, p.m.)

Illinois, nor would it protect Illinois' citizens from exposure to mercury through consumption of fish beyond the level of protection afforded by CAMR.

The Agency failed to meaningfully support, let alone establish, any such claimed benefits. Indeed, the position of the Agency and its witnesses on the extent and nature of any benefits from the rule seemed to change over time as the Agency was cross-examined regarding its failures to adequately support its benefit claims. The Agency did not present evidence or even a rational explanation of the nexus between its claimed benefits and the proposed rule.

In contrast to the vast amount of analysis that USEPA conducted to support the CAMR, none of which can be relied upon for the Agency's proposal, the Agency has conducted none of the studies that should serve as the basis of a rulemaking such as this one to demonstrate that the rule will produce the outcomes intended by the Agency. The Agency has not determined the amount of any mercury deposition or fish tissue concentration reduction that would result from the proposed rule, if adopted. S. Tr., pp. 124, 166, 302-304 (June 14, 2006). The Agency did not assess the extent to which Illinois residents eat Illinois freshwater fish or even the extent to which Illinois fishermen eat the fish they catch. S Tr., pp. 71-73 (June 16, 2006); Ex. 9, p. 4. Agency witnesses admitted that the Agency has not assessed the level of mercury deposition from out-of-state sources nor attempted to assess the impact of non-point mercury discharges in Illinois. S Tr., pp. 127, 134, 248, 268 (June 14, 2006). The Agency admitted that the process that results in methylmercury in fish tissue is highly complex and depends on a number of factors and that understanding the methylation process is necessary to determine the extent to which any deposition reduction in Illinois would reduce mercury fish tissue levels in Illinois water. S Tr., pp. 41-43, 45-46 (June 14, 2006).Yet, the Agency has wholly failed to assess Illinois waters for

these factors and does not know what level of methylation occurs or would occur in Illinois waters. S Tr., pp. 42-44, 302 (June 14, 2006).

The Agency also ignored data in its possession that is relevant to whether reductions in mercury emissions in Illinois would in fact reduce Illinois fish tissue mercury levels and eliminate impaired waters. For instance, Dr. Hornshaw testified that mercury fish tissue concentrations in Illinois have remained essentially flat since 1988, a view shared by the Illinois Department of Health. S Tr., pp. 183-187 (June 14, 2006). At the very least, this information should have caused the Agency to consider why it had seen no fish tissue mercury decrease in light of almost 30 years of environmental regulation, including National Emissions Standards for Hazardous Air Pollutants (NESHAPS) that have reduced mercury emissions from waste combustors and medical incinerators such as those that reduced mercury emissions in the Massachusetts and Florida studies. Similarly, the Rock River is west of any power plant that would be regulated under the proposed rule, and thus upwind most of the time. S Tr., p. 32 (June 15, 2006); Ex. 129, p. 10; TSD, Figures 4.1 and 4.3. Yet the Agency seems to assume that the Illinois power plant emissions somehow impact that river. The Agency also ignored non-point sources of mercury to Illinois waters and other point sources of mercury, such as combined sewer overflows. *See* Ex. 129, pp. 6-7. The Agency has failed to establish that Illinois fish tissue mercury levels will go down as a result of the proposed rule, let alone that reductions would be sufficient to eliminate mercury-impaired water designations in Illinois or provide a health benefit to Illinois residents. The Agency seems to ignore data inconsistent with its speculation regarding possible benefits while failing to conduct adequate analyses.

Instead of conducting necessary assessments or studies, the Agency cherry-picks certain results from two studies performed in other states (one in Massachusetts and one in Florida) and

concludes that such results will also accrue in Illinois. The Agency ignores inconsistent data in those studies that demonstrates that even when significant mercury deposition reductions occur, consistent mercury fish tissue reductions should not be expected. Further, even if data in those studies supported the notion that mercury deposition reductions consistently reduced fish tissue mercury in some of the waters at issue in those studies, the Agency failed to establish that conditions in Illinois waters are similar to those waters that experienced fish tissue mercury decreases and, therefore, that similar fish tissue mercury results should be expected. Indeed, Marcia Willhite conceded that it would be very difficult to extrapolate results from one water body to another given the very site-specific nature of the complex methylation process, but that is exactly what the Agency asks the Board to do. S Tr., p. 46 (June 14, 2006).

The Agency conceded that it has not assessed or studied Illinois waters for key attributes or constituents that control methylation rates, such as sulfur content, let alone compared such factors to the waters at issue in the Massachusetts and Florida study areas. S Trans., pp. 41-43, 203-205 (June 14, 2006). Further, the Agency totally ignored the data in those studies that showed no reduction or even an increase in fish tissue mercury levels following reductions in mercury emissions. In the Massachusetts study area, at least two of the lakes showed increases in fish tissue mercury levels, and in the Florida study area about an equal number of water bodies showed no change as showed decreases. S. Tr., pp. 210-211 (June 14, 2006); S Tr. pp. 220-222 (June 14, 2006; Ex. 20, pp. 81-82; Ex. 130, pp. 3-4. Further, in Massachusetts, where mercury emissions were reduced 90% from waste combustors and medical incinerators – sources of the type that would be expected to have far more impact on local deposition, as discussed above – the state is still required to address impaired waters because the mercury emission reductions

have not had the desired impact on fish tissue methylmercury levels. S Tr., p. 211 (June 14, 2006).

In short, in these studies, mercury deposition decreased very significantly, but there was no consistent reduction in fish tissue mercury, and mercury-impaired waters were not eliminated. In fact, in some cases, fish tissue mercury levels increased. Such results do not support the Agency's contention that a consistent, significant reduction in fish tissue mercury levels should be expected from its proposed rule. Indeed, given that inconsistent fish tissue results occurred when mercury deposition in the study areas apparently declined by about 90%, it is unreasonable and arbitrary to assume any consistent, measurable decrease in mercury fish tissue levels due to the proposed rule's projected 4% Illinois mercury deposition reduction, which was discussed above.

The Agency also relies on some limited Illinois water quality and fish flesh data, which falls far short of what is necessary to support a rulemaking. The Agency has fish tissue mercury information for only about 1,000 miles of the about 71,000 miles of streams in Illinois and for only eight of the more than 3,000 lakes in Illinois larger than six acres. S Tr., pp. 106-108 (June 14, 2006). Much of the data collected, including more than one third of the bass samples, were reported non-detect for mercury, but the Agency assumes that mercury is present at the detect limit, which just happens to correspond with the unlimited fish consumption advisory level. S Tr., pp. 158-159 (June 14, 2006); TSD, p. 63. As discussed above, the Agency completely failed to augment this meager data, choosing to rely on unsupported assumptions rather than assessing the Illinois water conditions needed to predict methylation rates and studying other variables that would impact the accuracy of its benefit claims, such as the impact of other sources on mercury loading in Illinois waters, including out-of-state sources. Dr. Chapman described this half-

hearted effort at data collection as sparse, noting that with such insufficient data, the Agency and the Board cannot have a good understanding of what is happening across Illinois. C Tr., pp. 17-18 (August 22, 2006, a.m.) The Agency's response was that it could not afford to do more than has been done. C Tr., pp. 18-19 (August 22, 2006, a.m.) While budget constraints may create a need to prioritize expenditures, the claimed lack of Agency resources does not relieve the Agency of its statutory burden to adequately support its proposed rule, a burden it has failed to carry. Yet the Agency expects the companies affected by the rule to expend millions of dollars in the Agency's estimate, billions of dollars according to the companies, to comply with this proposed rule. Moreover, USEPA did perform an analysis based upon sufficient data and adopted the CAMR; on the basis of insufficient data, the Agency has proposed a rule that is significantly more stringent than CAMR, is not technically feasible, and is not economically reasonable.

In light of the Agency's failure to adequately assess the potential impact of its proposed rule, it is perhaps not surprising that the Agency and its witnesses have inconsistently described that impact over time. Ms. Willhite has claimed that the rule would result in a 90% reduction in mercury deposition in Illinois and in fish tissue mercury concentrations. S Tr., pp. 166-167, 194-195 (June 14, 2006). Mr. Ross claimed that this was her position, not the Agency's, and then said that the Agency expected from mercury emission reductions only "corresponding" reductions in mercury deposition and in fish tissue mercury concentrations. S Tr., pp. 126-128 (June 19, 2006). The expected level of such "corresponding" reductions has never been articulated by the Agency but is apparently something less than the one-to-one reductions that Ms. Willhite claims. Even Ms. Willhite eventually conceded that, given the complexities of predicting methylation rates and the inconsistent Florida and Massachusetts data, a small, maybe

10% or less, reduction in fish tissue mercury levels might occur as a result of the proposed rule. S Tr., pp. 231-233 (June 14, 2006).

Coupled with the lack of reduction in deposition that would result from implementation of the Agency's mercury proposal, as discussed above, the Agency has not shown that implementation of a rule so much more stringent than the CAMR will cause Illinois waterbodies to be less mercury-impaired, to reduce the level of mercury in fish tissue, or to reduce the amount of mercury consumed by Illinois residents from eating fish. Indeed, Dr. Chapman, an acknowledged expert on aquatic toxicology, testified that, in light of all of the complexities associated with predicting the methylation and demethylation cycles, the absence of critical information needed to assess such cycles in Illinois waters, the contribution of other sources of mercury to Illinois waters, and other significant issues, he would not expect to see a measurable reduction in fish tissue mercury concentrations based on the small predicted additional mercury deposition reduction resulting from the proposed rule, as compared to CAMR. Ex. 129, p. 11. In other words, the stated goals of the proposed rule will not be realized.

Dr. Chapman's testimony is particularly compelling when considered with Dr. Charnley's testimony. The Agency did not assess the extent to which Illinois residents, including fishermen, eat Illinois fish. Data from states that have studied fish consumption patterns suggest that a high percentage of fishermen do not eat what they catch, and data from Wisconsin indicates no difference in hair mercury levels between women who do and do not eat freshwater sport fish. Ex. 130, pp. 6-7. Most of the fish consumed in the United States, including likely by Illinois residents, is ocean fish rather than freshwater fish. Ex. 130, pp. 6-7. Further, Dr. Charnley testified that at the mercury levels present in Illinois fish, any risk from

consumption was likely heavily overstated by the Agency and its claimed expert Deborah Rice. *Generally see* Ex. 130 and Dr. Charnley's oral testimony.

The point is that valid regulatory choices concerning methylmercury should consider and be based upon an objective analyses of the relevant evidence, including the likely level of methylmercury exposure and risk before and after a proposed rule. For instance, Illinois' fish consumption advisories are based on USEPA's methylmercury RfD. S Tr., pp. 66-67 (June 14, 2006); Ex. 9, p. 3. That RfD is more stringent than the mercury RfD developed by many other agencies, including environmental agencies in some other countries. Ex. 130, pp. 13-18. In addition, USEPA has determined that, after implementation of CAMR and CAIR, fish tissue mercury attributable to power plants would exceed the RfD only for those in the 99th percentile of fish consumption who consume fish containing the 99th percentile of mercury fish tissue concentration, a situation that is unlikely to occur very often. Ex. 31, p. 33392; Ex. 130, p. 8. In other words, all but those who eat a very large amount of fish that contains a very high level of methylmercury, such as subsistence fishermen that eat heavily impacted ocean fish, should not exceed USEPA's reference dose based on the mercury emissions from power plants. The Agency, however, failed to establish that any Illinois fish contained this high level of methylmercury and could identify only one subsistence fisherman in Illinois. S Tr., p. 74 (June 16, 2006). Consistently, even for fishermen consuming a very large amount of fish, USEPA found that it was unlikely that they would consume fish containing such a high level of methylmercury, and if they did, that would mean only that they exceeded the reference dose. Ex. 31, p. 33393. Given the uncertainty margin and other conservative assumptions used in the

calculation of USEPA's reference dose (upon which Illinois' fish advisories are based[39]), exceeding the RfD does not imply that an individual is "at risk." *See* Ex. 130, pp. 13-18. Based on a complete set of relevant data, the USEPA determined that CAMR provided adequate protection.

C. There Is No Nexus Between the Rule and Its Purported Goals.

The Agency has failed to establish that the proposed rule will result in any measurable, meaningful benefit. The lack of nexus between the rule and its purported goals reduces the rule to control for the sake of control. Adoption of a rule that amounts to control for the sake of control is arbitrary and capricious.

V. MIDWEST GENERATION RECOMMENDS THAT THE BOARD DECLINE TO ADOPT THE PROPOSAL OR ADOPT CAMR BY REFERENCE AND, IF NECESSARY, A STATE-ONLY MERCURY REDUCTION RULE THAT IS TECHNICALLY FEASIBLE AND ECONOMICALLY REASONABLE.

There is a difference in the way in which "regional" or "global" pollutants should be addressed versus the manner of addressing "local" pollutants. "Local" pollutants are those that are not transported such long distances and where reductions have a direct local impact. Volatile organic compounds ("VOC") is such a pollutant. Reducing VOCs in Peoria will not have an effect on ozone in Chicago. By "regional" or "global" pollutants, we refer to those pollutants that are transported great distances by weather patterns or the jet streams. As a result, a specific area, such as Illinois, is impacted by emissions from sources often hundreds, perhaps thousands, of miles away. Reductions of such pollutants need to occur in a broad-based or regional manner

[39] Dr. Hornshaw testified that Illinois' mercury fish advisories are based upon USEPA's RfD. S Tr., p. 66-67 (June 14, 2006). Accordingly, the same uncertainty factor and other protective assumptions included in USEPA's reference dose are included in Illinois' mercury fish advisories.

in order for the reductions to have any positive effect. NOx and SO_2 are such pollutants, thus the success of the NOx SIP call and Acid Rain trading programs. Mercury is another such a pollutant, particularly as emitted from coal-fired power plants.

The Agency is attempting to treat mercury as a local pollutant in this proposed rule. The Agency was not able to demonstrate that the proposed rule will fulfill the state's goals because the goals are local in focus but the pollutant is regional or global in impact. Experience from other states confirms this disconnect. For instance, Massachusetts required significant mercury emission reductions from mercury sources in the state, but that did not eliminate its mercury-impaired water issues, at least in part due to the contribution of out-of-state sources. S Tr., p. 211 (June 14, 2006); Ex. 21, p. 14.

There is a better way to meet the Agency's stated goals for this mercury rulemaking: adopt the CAMR by reference in order to satisfy the federal requirement under Section 111(d) of the Clean Air Act.[40] This course of action inherently ensures that Illinois will comply with the

[40] If there are any lingering concerns that there may be mercury hot spots, though none have been shown to exist in Illinois, the Board could adopt the HCI technology-based provisions of the MPS, operated in a manner that most effectively removes mercury but does not interfere with compliance with applicable particulate and opacity standards, and excluding the provisions related to NOx and SO_2, *i.e.*, accept, with appropriate wordsmithing, subsections (a)(3), (a)(3)(B), (a)(4), (c)(1)(A)(i) without reference to the type of ESP, (c)(1)(B) including HS ESPs in this group, (c)(2)(A), (c)(4), (c)(5)(A)-(C), (g). This approach will significantly contribute to the development of mercury control technology and also may accomplish the Agency's goal of a statewide 90% reduction of mercury emissions if the technology actually performs as the Agency has testified. This approach is technically feasible, as it requires merely the installation and optimal operation of HCI without the significant risk of civil and criminal penalties for possible violations of the emissions limitations which cannot even be accurately monitored if the Agency is wrong in its assessment of the effectiveness of HCI in achieving the 90% reduction. Further, it is economically reasonable, largely because the economic efficiencies of the CAMR offset the costs of the technology-based rule. If the Agency continues to believe into the future that a 90% absolute reduction of mercury is appropriate, then the Agency can revisit the rule in the future after the technology has further developed. A technology-based rule in Illinois will help that technology development, as Illinois' power plants will effectively be testing the technology in

federal mercury emissions cap and will satisfy the specific requirements of 40 CFR 60.24(h). Such a rule will be automatically approved by USEPA. 40 CFR § 60.24(h)(6)(i). USEPA has thoroughly and publicly considered the technical feasibility and economic reasonableness of the CAMR as well as the benefits that will accrue.

WHEREFORE, for the reasons set forth above and as developed at the Springfield and Chicago hearings, Midwest Generation recommends that the Board decline to adopt the Agency's proposal and allow the CAMR to apply by operation of law or, in the alternative, adopt the CAMR by reference. If the Board feels compelled to adopt an Illinois-specific technology-based rule, the Board should merely require the installation and optimal operation of HCl, considering injection rates that do not result in violations of the applicable opacity and PM emissions limitations (effectively, the MPS without any reference to NOx and SO_2 in the rule).

Respectfully submitted,

MIDWEST GENERATION, LLC

by:

Daniel McDevitt

General Counsel

real-time beginning in July 2009. The approach also avoids the legal issues inherent with proposed Section 225.233(f).

Dated: September 20, 2006

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Attachment A

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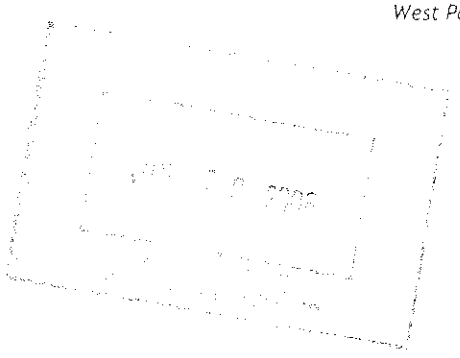

VIA E-MAIL AND FEDERAL EXPRESS

The Honorable Doug Scott
Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794

Re: Letter of Understanding/CONFIDENTIAL SETTLEMENT NEGOTIATIONS

Dear Director Scott:

As you are keenly aware, the State of Illinois and other states regionally and nationally are in the process of developing rules to implement a variety of new regulatory programs including, most specifically, the Clean Air Mercury Rule (CAMR) and the Clean Air Interstate Rule ("CAIR"). The State of Illinois is also in the process of developing its plan to address non-attainment issues in the Metro-East/St. Louis area and the Chicago area under the federal National Ambient Air Quality Standards (NAAQS). Collectively, these new programs present a challenge for both your Agency as well as for industry located and doing business in the State of Illinois. Indeed, the benefits of emission reductions for the citizens of the State of Illinois are great but so too are the impacts to companies such as Ameren who are responsible for supplying continuous and low cost power and jobs for those same citizens.

Ameren has been a leader in power plant emission reduction and technology development nationally. Since the early 90s, Ameren has spent millions of dollars to reduce power plant emissions by over 70% but Ameren recognizes that more must be done to address air quality issues in the State of Illinois. As such, Ameren stepped forward several months ago to proactively work with the State of Illinois through you and your Agency on a comprehensive and multi-pollutant approach to future emission reductions from Ameren's Illinois System. The decision to try to work with the Agency proactively and in advance of mandated reductions, instead of fighting those reduction mandates, has required Ameren to commit to a pollution control installation plan that based on today's dollars will cost the company over $1.8 billion dollars. That investment would be over and above the approximately $1 billion of equity the

corporation and its investors spent to bring two struggling Illinois utilities (CILCORP, Inc., and Illinois Power Company) to investment grade status. Add to that hundreds of millions of dollars spent to improve reliability at those companies. In addition, Ameren is fulfilling its commitment to invest in the communities served by both of these utility companies.

Yet, despite the need to commit to even higher capital costs, Ameren believes our proactive working relationship has been a positive one and may serve as a model for the future.

This letter is intended to embody a portion of the understanding reached through our negotiations. Ultimately, this understanding may be included in a more formal document but the parties agree that setting forth the intentions of the parties through this letter will aide in furthering the commitments made through our comprehensive approach. In exchange for Ameren's commitments to comply with the Multi-Pollutant Strategy set forth in the Illinois Mercury Rule, Illinois EPA agrees that Ameren's commitments are significant, particularly as it prepares its plans to demonstrate attainment of the fine particulate matter (PM2.5) and the 8 hour Ozone National Ambient Air Quality Standard (NAAQS). Illinois EPA also agrees that it will consider Ameren's accelerated emission reduction commitments as it develops its attainment demonstration and will use its best efforts to seek reduction commitments from sources other than Ameren's Illinois System first, before seeking additional emission reduction commitments from Ameren to address the State's current attainment obligations. The Illinois EPA and Ameren further agree to work together to coordinate the program put forth by Ameren and the CAIR Rule to be adopted by the Illinois Pollution Control Board in the near future. The parties acknowledge that the Letter of Understanding is dependent upon the Illinois Pollution Control Board adopting the Multi-Pollutant Standard in substantially the same form as proposed by the parties.

As you are also aware, there are some additional outstanding issues requiring resolution as an integral part of Ameren's overall comprehensive approach. Illinois EPA and Ameren agree to pursue resolution of those issues in such a way as to minimize any impact on Ameren's ability to meet generation needs of its customers or impact on Ameren's competitiveness because of its willingness to act proactively.

We ask for your signature below acknowledging the understanding set forth herein. Ameren appreciates the hard work of the Bureau of Air staff at Illinois EPA and looks forward to

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continuing to work with the Illinois EPA and you on implementation of these important commitments.

Sincerely,

SONNENSCHEIN NATH & ROSENTHAL LLP

By:

Renee Cipriano
Partner

AGREED:

Director Doug Scott
Illinois Environmental Protection Agency

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CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 20th day of September, 2006, I have served electronically the attached **MIDWEST GENERATION'S COMMENTS** upon the following persons:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

and electronically and by first-class mail with postage thereon fully prepaid and affixed to the persons listed on the **ATTACHED SERVICE LIST**.

/s/ Daniel McDevitt
Daniel McDevitt

Daniel McDevitt
General Counsel
MIDWEST GENERATION, LLC
440 South LaSalle Street, Suite 3500
Chicago, Illinois 60605
312-583-6000

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