

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

AMEREN ENERGY RESOURCES,)

Petitioner,)

v.)

ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)

Respondent.)

PCB 12-126
(Variance – Air)

NOTICE OF FILING

To: ALL PARTIES ON THE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that we have today electronically filed with the Office of the Clerk of the Illinois Pollution Control Board AER'S RESPONSES TO THE ILLINOIS POLLUTION CONTROL BOARD TECHNICAL UNIT'S SECOND SET OF QUESTIONS, copies of which are herewith served upon you.



Amy Antonioli

Dated: July 30, 2012

Renee Cipriano
Gabriel Rodriguez
Amy Antonioli
SCHIFF HARDIN LLP
233 South Wacker Drive
Suite 6600
Chicago, Illinois 60606
312-258-5500

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

AMEREN ENERGY RESOURCES,)	
)	
Petitioner,)	
)	PCB 12-126
v.)	(Variance – Air)
)	
ILLINOIS ENVIRONMENTAL PROTECTION)	
AGENCY,)	
)	
Respondent.)	

AER'S RESPONSES TO THE ILLINOIS POLLUTION CONTROL BOARD
TECHNICAL UNIT'S SECOND SET OF QUESTIONS

Ameren Energy Resources (“AER” or “Petitioner”) filed its petition for variance from two provisions of the Illinois Multi-Pollutant Standard (“MPS”) for its fleet of seven Illinois energy centers on May 4, 2012 (“Petition”). In the Petition, AER sought relief from Section 225.233(e)(3)(C)(iii) for five years beginning January 1, 2015, and ending December 31, 2019, and relief from Section 225.233(e)(3)(C)(iv) for four years, beginning January 1, 2017, and ending December 31, 2020. A hearing in this matter is scheduled for August 1, 2012. In her July 6, 2012 order, Hearing Officer Webb (“Hearing Officer”) included a series of questions on the Petition for AER to answer prior to hearing. AER filed responses to the first set of Hearing Officer questions on July 30, 2012 (“AER’s First Set of Responses”). The Hearing Officer included a second set of questions in a July 25, 2012 order. AER’s responses to the July 25, 2012 questions are set forth below.

1. PC 249 from the Illinois Attorney General’s Office asks,

Could scrubbers at Ameren’s plants be further optimized to reduce emissions or are there less expensive pollution control technologies that could assist? Could Ameren run certain units less or temporarily power down a unit at each facility? What are these other operational management measures and could more of them be pursued to reduce emissions? PC 249 at 7.

Please comment on the compliance alternatives of further optimizing scrubbers to reduce emissions, less expensive pollution control technologies that could assist in reducing emissions, and operational management measures that could be pursued to reduce emissions.

Electronic Filing - Received, Clerk's Office, 07/30/2012

AER has and continues to evaluate a number of compliance alternatives that can effectively reduce emissions. Under AER's compliance plan, the operation of FGD systems at the Duck Creek and Coffeen Energy Centers will be fully maximized in order to maintain compliance on a system-wide basis with the MPS SO₂ emission requirements. The removal efficiencies for the FGD systems will range between 98-99%.¹ Even at those high removal efficiency levels, compliance margins remain narrow and AER will need to employ operational strategies such as low-sulfur coal procurement and generation utilization in order to comply with the proposed emission rate.

In addition to scrubbers, AER has evaluated other technologies for SO₂ reduction including sorbent injection. AER's evaluation of sorbent injection reflects removal levels of 10 to 90%. Such variability in removal efficiencies reduces the effectiveness of this technology as a compliance alternative. Furthermore, AER's analysis reflected that the installation of such equipment at a facility such as E.D. Edwards would impair that unit's electrostatic precipitator performance (ESP) thereby potentially triggering additional controls such as a baghouse to control particulate matter (PM). AER currently utilizes activated carbon injection at all of its non-FGD units which add to the mass loading on the ESPs. Accordingly, the total cost of sorbent injection when considered in conjunction with the increased capital costs associated with controlling PM, renders this alternative equivalent to that of a scrubber system. More importantly, to comply with the MPS via sorbent injection would entail installation of such controls (and baghouses) at virtually all of AER's uncontrolled units across the system. The cost of such alternative would exceed the cost to complete the Newton scrubber.

Finally, AER considered operational management measures to comply with the MPS in 2015, but found that such reductions would lead to negative cash flow and would exacerbate, not

¹ See page 8 of AER's First Set of Responses for the associated capital and operating and maintenance costs associated with achieving and maintaining such high FGD removal efficiencies.

alleviate AER's current financial predicament. Please refer to pages 2 and 3 of AER's First Set of Responses.

2. *Table 1 on page 26 of the petition and Attachment 1 to Exhibit 7 compares "MPS Baseline SO₂ Tons" to "Variance SO₂ Tons" and calculates a "Cumulative SO₂ Variance Reduced Tons" for the years 2010 to 2021.*

In Attachment 1 to Exhibit 7, Ameren used the "Baseline Heat Input" of 340,446,252, explaining, "In order to equalize the comparison, AER used the same average heat input projections as were used to support the 2009 rule revisions to the MPS." Exh. 6 at 3.

- (a) Should the units for "Baseline Heat Input" in Attachment 1 to Exhibit 7 be MMBtu/year instead of lb/MMBtu?*

Yes.

- (b) What heat input was used in the recently approved SIP (mentioned in question 2 below)?*

It appears that the Illinois Environmental Protection Agency (Agency) used 2002 heat input data for its comparison to support revisions to the Illinois SIP for regional haze. The memorandum entitled "*Comparison of Illinois Power Plant Emission reductions to Reductions from Source-Specific Best Available Retrofit Technology*," filed by USEPA on May 29, 2012 states it used data from Illinois' technical support document for BART.

- (c) If the heat input values are not the same, please explain which value is most appropriate for calculations to support an SIP revision.*

The heat inputs AER uses in its calculations are not the same as those used in support of the Illinois SIP revisions. AER and the Agency agreed on the approach to heat input values to be used when developing the MPS in 2006 and then when seeking the revision in 2009. Which heat inputs are more appropriate for calculations to support a SIP revision may be best answered by the Agency in the context of the SIP revision process.

- (d) It appears the "MPS Baseline SO₂ Tons" is calculated by multiplying "Baseline Heat Input" by the SO₂ annual emission rates from Section 225.233(e)(3)(C). Please explain how the "Variance SO₂ Tons" are calculated and what heat input Ameren used. Please explain if the heat*

input is adjusted to reflect the cessation of operations at Meredosia and Hutsonville Energy Centers.

The Board is correct that the “MPS Baseline SO₂ Tons” is calculated by multiplying “Baseline Heat Input” by the SO₂ annual emission rates from Section 225.233(e)(3)(C). To calculate the “Variance SO₂ Tons,” AER multiplied the baseline heat input (340,446,252 MM/Btu) by the variance SO₂ emission rates. This heat input was not adjusted to reflect the cessation of operations at the Meredosia and Hutsonville Energy Centers. AER maintains that it is appropriate to calculate emissions reductions using a heat input that includes Meredosia and Hutsonville in the baseline, because both plants are part of the MPS group and their closure should be considered. As noted by the Agency, “providing credit for actions (e.g., unit shutdowns) that result in emission reductions is an acceptable part of the established regulatory process.” Rec. at 21. In AER’s First Set of Responses, AER prepared an updated table showing the SO₂ emission reductions through 2020 when considering the closures of Hutsonville and Meredosia (Table 3).

(e) Please define the term for “nominal” (mmBtu/hr) as used in Exhibit 2.

The term “nominal” in Exhibit 2 to the Petition specifies a target output consistent with conceptual or preliminary design or projections, not necessarily the maximum capability or performance.

(f) For 2010 and 2011, the “Variance SO₂ Tons” in the tables are listed as 70,560 and 72,539, respectively. The sum of “2011 SO₂ mass emissions” from Exhibit 2 is 72,538. Please indicate if these values are based on actual emissions.

Yes, these values are actual emissions for those years.

(g) Please explain why the “Variance SO₂ Tons” for 2010 and 2011 are both lower than the “MPS Baseline SO₂ Tons”.

The MPS Baseline SO₂ Tons are calculated to show the maximum emissions in SO₂ tons allowable under the MPS. The actual emissions for those years are lower, reflecting the

operation of FGD systems at high efficiencies and other operational measures to reduce emissions.

(h) Please explain the reasoning behind including years 2010 and 2011 in the calculation of "Cumulative SO₂ Variance Reduced Tons" if the variance were to be granted in 2012.

AER included the years 2010 and 2011 in the calculation of "Cumulative SO₂ Variance Reduced Tons" to show the total tons of SO₂ reduced during the MPS period by the end of the requested variance term.

The Illinois Environmental Protection Agency's (IEPA) Recommendation filed July 23, 2012, (Ag. Rec.) stated, "Petitioner proposes to commit to a system-wide annual average SO₂ emission rate of 0.35 lb/mmBtu, as opposed to 0.38 lb/mmBtu as set forth in the Petition, from January 1, 2013, through December 31, 2019." Ag. Rec. at 20, 21.

(i) Does Ameren affirm the commitment above that IEPA referred to on pages 20 and 21?

AER commits to complying with the SO₂ emission rate of 0.35lb/MMBtu, rather than 0.38 lb/MMBtu, in calendar years 2013 through 2019. As an additional mitigation measure, AER proposes herein that the variance term conclude on January 15, 2020, with the return to compliance with the 0.23 lb/MMBtu beginning on that date rather than on December 31, 2020 as proposed by AER in the Petition. Please refer to AER's First Set of Responses for a more complete response to this question.

(j) Please readdress Table 1 on page 26 of the petition and Attachment 1 of Exh. 7 to reflect the SO₂ emission rate of 0.35 lb/mmBtu for the specified time period. Please show your calculations for all values in the Table.

Please refer to AER's First Set of Responses, Exhibit 1 for a revised table calculating tons of SO₂ reduced under the agreed revised rate and shortened variance period and removing Hutsonville and Meredosia from the system-wide baseline.

(k) Please readdress Table 1 on page 26 and Attachment 1 of Exh. 7 of the petition to also show "Cumulative SO₂ Variance Reduced Tons" if 2010 and 2011 are not considered.

AER calculations show that when removing the actual SO₂ emissions in 2010 and 2011 from the “Cumulative SO₂ Variance Reduced Tons,” the variance results in a net environmental benefit of 7,770 tons SO₂ by the end of 2020. AER has prepared a revised table to answer this question, which is attached hereto as Table 4.

- 3. The petition on page 32 states, “...once the Illinois BART [best available retrofit technology]/SIP [State Implementation Plan] is adopted as final, Illinois must seek revisions to the SIP reflecting the terms of the variance.” Pet. at 32. Ameren filed its petition on May 3, 2012, and USEPA published its approval of the Illinois regional haze SIP on July 6, 2012. 77 Fed. Reg. 39943 (July 6, 2012). The final rule is effective on August 6, 2012. Under the final rule for Ameren, “three of its power plants meet the criteria for being subject to BART, and five coal-fired plants are governed by the SO₂ and NO_x limits in the (CPS) [Combined Pollutant Standard]. 77 Fed. Reg. 39944.*

USEPA stated, “In the notice of proposed rulemaking, [US]EPA proposed to conclude that the emission reductions from the (MPS [Multi-Pollutant Standard]) and the (CPS) would be greater than the reductions that would occur with unit-specific implementation of BART on the subset of these sources that meet the criteria for being subject to BART. Therefore, [US]EPA proposed to find that the (MPS) and the (CPS) suffice to address the BART requirement for the power plants of these three utilities [Midwest Generation, Dynegy, and Ameren].” 77 Fed. Reg. 39944 (July 6, 2012).

The petition on page 31 states, “Illinois estimated that its plan will require 96,927 tons per year lower SO₂ emissions by 2015 than simply requiring BART and USEPA accepted Illinois’ plan as satisfying BART requirements.” Pet. at 31. Ameren follows, “...the variance will result in mass emissions of SO₂ by 2015 even lower than Illinois’ estimates under current MPS requirements. The net reduction in SO₂ emissions continues to 2020 and beyond and, thus, does not impact the state’s BART determinations.” Pet. at 31.

Exhibit 15 of the petition (77 Fed. Reg. 3973 (January 26, 2012) states:

The MPS and CPS provide emission reduction well in excess of simply implementing BART on subject units. The reduction in NO_x emissions from the Ameren, Dynegy, and Midwest Generation unit by 2015 from MPS and CPS is expected to be 89,882 TPY. Illinois estimated that simply implementing BART on the subject units from these entities would yield 32,992 TPY of NO_x emission reductions, which is 56,890 TPY less [than] that from MPS and CPS. Illinois estimated that implementing BART on the subject units at Ameren, Dynegy, and Midwest Generation facilities would require an 117,252 TPY reduction in SO₂ emission, but MPS and CPS will require a 214,179 TPY SO₂ reduction by 2015. Thus, Illinois estimated that its plan will require 96,927 TPY lower SO₂ emissions than simply requiring BART. EPA believes that Illinois has thereby demonstrated that the emission limits

on the subject to BART units covered by MPS and CPS satisfy the BART requirements. 77 Fed. Reg. 3973 (January 26, 2012)

In the July 6, 2012 USEPA approval of the Illinois regional haze SIP, Table 1 lists the following emission reductions for Ameren from Illinois' plan, including reductions from the MPS and CPS:

<u>Company</u>	<u>NOx reductions (tons/year)</u>		<u>SO2 reductions (tons/year)</u>	
	<u>IL Plan</u>	<u>Lowest BART</u>	<u>IL Plan</u>	<u>Lowest BART</u>
Ameren	24,074	23,849	111,997	74,349

(77 Fed. Reg. 39946 (July 6, 2012))

The petition on page 31 states, "Given the voluntary compliance with a lower emission rate of 0.38 lb/MMBtu beginning in 2012 (as opposed to 0.50 lb/MMBtu through 2013 and 0.43 lb/MMBtu during 2014) through 2019, the variance will result in mass emissions of SO₂ by 2015 even lower than Illinois' estimates under current MPS requirements. The net reduction in SO₂ emissions continues to 2020 and beyond and, thus, does not impact the state's BART determinations." Pet. at 31.

(a) Please comment on how the proposed variance if granted will impact the values cited from the Federal Register above (77 Fed. Reg. 3973 (January 26, 2012) and 77 Fed. Reg. 39946 (July 6, 2012)).

In the final rule published July 6, 2012, USEPA noted in response to public comments that Illinois' plan would achieve greater reasonable progress – meaning greater emissions reductions and greater visibility protection – by the BART compliance deadline (in 2017) than the application of BART on BART-subject units. The 96,927 tons SO₂ per year value from the proposed revisions is an Illinois-wide figure that shows the dramatic reductions the Illinois plan will provide below that which would be achieved by implementing BART on BART-subject units. USEPA finds this number was calculated in accordance with guidance and is fully consistent with USEPA's conclusions in adopting the rule as final. 77 Fed. Reg. 39945 (Jul. 6, 2012).

Table 1 in the final rule is Ameren-specific. To calculate the estimated SO₂ reductions in the final rule, USEPA used emission limits described in USEPA's RACT/BACT/LAER Clearinghouse as being applied to new sources, which is a 0.06

lb/MMBtu emission rate for SO₂. USEPA acknowledged this is an exceedingly stringent emission rate for existing power plants, but wanted to show that the Illinois plan provided “significantly greater emission reductions, especially for SO₂ . . .” than even very conservative definitions for BART. 77 Fed. Reg. 39946. AER contends that both values show that Illinois’ plan achieves greater reasonable progress than simply applying BART in Illinois. When compared to emissions reductions by AER’s energy centers under the MPS, the variance, as proposed by the Agency, imparts even greater emissions reductions by the BART compliance deadline in 2017. Accordingly, an amendment to the SIP incorporating this variance request would only serve to enhance Illinois’ ability to comply with the Clean Air Act and Regional Haze Rule.

(b) Please comment on the assertion by the Illinois Attorney General’s Office (PC 249): “The problem with this framework [Ameren’s compliance plan] is that the MPS was not intended to be a 12-year averaging period of pollution reduction.” PC 249 at 4.


AER disagrees with the Attorney General’s Office characterization of AER’s compliance plan and the MPS. By seeking this variance, AER is not requesting a 12-year averaging period of pollution reduction. Rather, AER is asking to delay the 2015 and 2017 rates such that it can complete installation of the pollution control equipment necessary to meet those rates. AER agrees with the Agency that the MPS was created and designed to achieve significant SO₂ and NO_x reductions in exchange for mercury control flexibility in the Illinois Mercury Rule. Further, the timing of the MPS reductions was negotiated and factored in many variables, including Petitioner’s ability to install pollution control equipment in a timely manner. The MPS is structured as a rate-based regulation and not as a framework to achieve a specific milestone of mass emission reductions.

Variations are allowed under Illinois law based upon a showing of arbitrary and unreasonable hardship. As part of that demonstration, AER must establish that it has to the extent practicable minimized the environmental impact of the variance relief. AER has

satisfied that obligation by illustrating the impact of the proposed rate as compared to the existing regulation. The compliance plan offers a more stringent SO₂ emission rate early in the term in exchange for more time to meet the 2015 and 2017 rates. Those earlier, and more stringent requirements offset the impact of the variance relief. This is true even if you remove Hutsonville and Meredosia from the calculations. AER will continue to comply with progressively declining rates during the MPS period. Doing so will require AER to implement every economically reasonable SO₂ reduction measure available.

Respectfully submitted,

AMEREN ENERGY RESOURCES, Petitioner.

By: 

Dated: July 30, 2012

Renee Cipriano
Gabriel Rodriguez
Amy Antonioli
Schiff Hardin, LLC
233 South Wacker Drive, Suite 6600
Chicago, IL 60606

TABLE 4

Year	Baseline Heat Input MMBtu	MPS SO ₂ Rate lb/MMBtu	MPS Baseline SO ₂ Tons	Variance SO ₂ Rate lb/MMBtu	Adjusted Heat Input MMBtu	Variance SO ₂ Tons	Cumulative SO ₂ Variance Reduced Tons
2012	340,446,252	0.50	85,112	0.38	312,003,694	59,281	25,831
2013	340,446,252	0.50	85,112	0.35	312,003,694	54,601	56,342
2014	340,446,252	0.43	73,196	0.35	312,003,694	54,601	74,937
2015	340,446,252	0.25	42,556	0.35	312,003,694	54,601	62,892
2016	340,446,252	0.25	42,556	0.35	312,003,694	54,601	50,847
2017	340,446,252	0.23	39,151	0.35	312,003,694	54,601	35,398
2018	340,446,252	0.23	39,151	0.35	312,003,694	54,601	19,949
2019	340,446,252	0.23	39,151	0.35	312,003,694	54,601	4,499
2020	340,446,252	0.23	39,151	0.23	312,003,694	35,880	7,770
Total			485,136			477,366	7,770

Note for the "Cumulative SO₂ Variance Reduced Tons" column, a positive number indicates an emission decrease (benefit).

*Note that the Heat Input has been adjusted to remove Hutsonville and Meredosia from the baseline; no additional emission reductions have been credited.

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 30th day of July, 2012, I have served electronically the attached AER'S RESPONSES TO THE ILLINOIS POLLUTION CONTROL BOARD TECHNICAL UNIT'S SECOND SET OF QUESTIONS, upon the following persons:

John Therriault, Assistant Clerk
Carol Webb, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

and electronically and by first class mail, postage affixed, upon:

Gina Roccaforte
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276



Amy Antonioli

Renee Cipriano
Gabriel Rodriguez
Amy Antonioli
SCHIFF HARDIN LLP
233 South Wacker Drive
Suite 6600
Chicago, Illinois 60606
312-258-5500

SERVICE LIST
(PCB 12-126)

John Therriault, Assistant Clerk
Carol Webb, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601
therriaj@ipcb.state.il.us

Gina Roccaforte
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276