BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE

TO: Dorothy Gunn
Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph St., Suite 11-500
Chicago, IL 60601-3218

SEE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S FIRST ERRATA SHEET TO ITS RULEMAKING PROPOSAL, POST-HEARING COMMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and WRITTEN ANSWERS TO PRE-FILED QUESTIONS FOR SID NELSON, JR., a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Charles E. Matoesian
Assistant Counsel
Division of Legal Counsel

DATED: July 7, 2006

1021 North Grand Avenue East
P. O. Box 19276
Springfield, IL 62794-9276
217/782-5544

THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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POST-HEARING COMMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (Illinois EPA), by one of its attorneys, John J. Kim, and hereby submits comments in the above rulemaking proceeding. The Illinois EPA appreciates the efforts of the Illinois Pollution Control Board (Board) in this rulemaking regarding the request to add 35 Ill. Adm. Code Part 225 to control mercury emissions from coal-fired electric generating units. Though the Illinois EPA responded to most every issue raised at the first hearing in this matter on the record during those proceedings, some outstanding issues remain to be addressed in these post-hearing comments.

RESPONSES TO QUESTIONS RAISED DURING THE JUNE 12, 2006 HEARING

Question: *Is it possible to obtain a copy of Dr. Keeler's Steubenville, OH, study?*

Response: As confirmed through discussions with United States Environmental Protection Agency (USEPA) and Dr. Gerald Keeler, the publication release date for the study will not be until sometime in late July or early August at the earliest. The pre-publication release of the study will not be approved by USEPA or Dr. Keeler's employer, the University of Michigan. Such pre-publication release is contrary to the code of scientific peer-review.

Question: *Do the Water Quality Standards look at methylmercury or all mercury?*

Response: The standards address total mercury, as present either as methylmercury or in other forms.

Question: *What is the website for the EIA Form 767?*

Response: http://www.eia.doe.gov/cneaf/electricity/forms/eia767/eia767.pdf

Question*:* *What are the sources of Marcia Willhite's answers to Dynegy's questions 8-13?*

Response:

Choi, MH, JJ Cech, JR, MC Lagunas-Solar. 1998. Bioavailability of methylmercury to Sacramento blackfish (*Orthodon microlepidotus*): dissolved organic carbon effects. Environ. Toxicol. Chem. 17:695-701.

Colman, JA, MC Waldron, RF Breault, and RM Lent. 1999. Distribution and Transport of Total Mercury and Methylmercury in Mercury-Contaminated Sediments in Reservoirs and Wetlands of the Sudbury River, East-Central Massachusetts. U.S. Geological Survey Water-Resources Investigations Report 99-4060, 98 p.

Gorski, PR, DE Armstrong, JP Hurley, and MM Shafer. 2006. Speciation of aqueous methylmercury influences uptake by a freshwater alga (*Selenastrum capricornutum*). Environ. Toxicol. Chem. 25:534-540.

Gray, JE. 2003. Leaching, Transport, and Methylation of Mercury in and around Abandoned Mercury Mines in the Humboldt River Basin and Surrounding Areas, Nevada. U.S. Geological Survey Bulletin 2210-C, 15 p.

Jernelov, A. 1968. Laboratory experiments on the change of mercury compounds from one into another. Vatten. 24:360-362.

Lathrop, RC, KC Noonan, PM Guenther, TL Brasino and PW Rasmussen. 1989. Mercury levels in walleyes from Wisconsin lakes of different water and sediment chemistry characteristics. Tech. Bull. No. 163. Wis. Dep. Nat. Resour. Madison, WI.

Phillips GR and RW Gregory. 1979. Assimilation efficiency of dietary methylmercury by northern pike (*Esox lucius*). J. Fish. Res. Board Can. 36:1516-1519.

Schultz IR and MC Newman. 1997. Methyl mercury toxicokinetics in channel catfish (*Ictalurus punctatus*) and largemouth bass (*Micropterus salmoides*) after intravascular administration. Environ. Toxicol. Chem. 16:990-996.

USEPA (U.S. Environmental Protection Agency). 1997. Mercury Study Report to Congress. U.S. Washington, DC. December.

Winfrey, MR and JWM Rudd. 1990. Environmental factors affecting the formation of methylmercury in low pH lakes. Environ. Toxicol. Chem. 9:853-869.

Zillioux, EJ, DB Porcella, and JM Benoit. 1993. Mercury cycling and effects in freshwater wetland ecosystems. Environ. Toxicol. Chem. 12:2245-2264.

Question: *What is the explanation of calculations in Lalit Sinha's documents?*

Response: The explanation can be found on page 14 of Hearing Exhibit 56, "Preliminary Analysis of Effluent Mercury Data in Illinois."

Question: *For purposes of Sections 225.232(d)(2) and 225.234(b)(3), had the Illinois EPA known that Ameren owns an 80% share of Electric Energy, Inc., would the rule have been drafted to consider Electric Energy, Inc., as part of Ameren?*

Response: No. Given the potential complexity of the ownership agreement, the Illinois EPA would have only pursued this matter if Ameren or Electric Energy had raised this point, with appropriate documentation, during the outreach sessions on the proposed rules.

Question: *Did the Illinois EPA take coal washing costs into account in its cost analysis?*

Response: No. These costs were considered to be independent of the proposed rules, as they are attributable to the washing of coal to reduce ash content and improve heat content of the coal.

Question: *Are the definitions for the Proposed New Part 225 pertaining to mercury consistent with the definitions for the Proposed New Clean Air Interstate Rule?*

Response: Yes, the Proposed New Part 225 pertaining to mercury consists of Subparts A and B, and the Proposed New Clean Air Interstate Rule (CAIR), Part 225, consists of Subparts A, C, D, and E. While the definitions encompassed under the general provisions of Subparts A of both proposed rulemakings may overlap, Subpart B is specific to mercury, and Subparts C, D, and E are specific to CAIR. For clarification purposes and exactness, specific references to specific Subparts are found throughout many of the definitions.

Question: *What is the interplay between the proposed rule and the appeal provisions of the Environmental Protection Act (Act)?*

Response: The appeal provisions of Sections 40 and 41 of the Act (415 ILCS 5/40, 5/41) apply to Illinois EPA decisions under Sections 39 and 39.5 of the Act (415 ILCS 5/39, 5/39.5). Permits, such as construction permits and Clean Air Act Permit

Program (CAAPP or Title V) permits, under the proposed rule will be issued under the authority of Sections 39 and 39.5 of the Act. Hence, decisions by the Illinois EPA relating to such permits are appealable under Sections 40 and 41 of the Act. The Illinois EPA would also consider its actions with respect to certification of monitors (See Section 225.250) to be final actions that are appealable to the Board.

Question: *Does the testing of air pollution control equipment require a construction permit?*

Response: A permit is generally required for the pilot evaluation of new air pollution control equipment. In particular, no person shall cause or allow the construction of any new emission source or any new air pollution control equipment, or cause or allow the modification of any existing emission source or air pollution control equipment, without first obtaining a construction permit from the Illinois EPA, except as provided in Section 201.146. *See*, 35 Ill. Adm. Code 201.142; *see also* 415 ILCS 5/39.

While Section 201.146 includes provisions exempting certain additions or replacements of control devices from permitting, it would be inappropriate for sources to rely upon them for work to comply with the proposed rules. This is because the pilot evaluations would be pursued to address new or different requirements with which unit(s) have not yet complied or not yet even been subject. The permit exemption for replacement or addition of control equipment, as related to mercury emissions, will only become available to units at a specific source once that source has complied with the numerical emission standards in this rule. Thereafter, the source could potentially take advantage of the permit exemption for addition or replacement of control devices for its "voluntary" efforts to further improve control of mercury emissions.

Question: *Does the installation of such air pollution control equipment require a construction permit?*

Response: Yes. As discussed above, no person shall cause or allow the construction of any new emission source or any new air pollution control equipment, or cause or allow the modification of any existing emission source or air pollution control equipment, without first obtaining a construction permit from the Agency, except as provided in Section 201.146. *See,* 35 Ill. Adm. Code 201.142; *see also* 415 ILCS 5/39. A construction permit would be required for the permanent installation of control equipment to comply with the proposed rules, since the unit on which such equipment is being installed will not have previously been in compliance with these rules.

Question: *What is the time frame for issuance of a construction permit?*

Response: If there is no final action by the Illinois EPA within 90 days after the filing of the application for permit, the applicant may deem the permit issued; except that this time period shall be extended to 180 days when (1) notice and opportunity for public hearing are required by state or federal law or regulation…. *See,* 415 ILCS 5/39. However, the Illinois EPA has issued similar construction permits in the past within 30 to 55 days.

Question*:* *Can sources submit a CAAPP permit application without demonstrating compliance?*

Response: Under Section 39.5 of the Act, an owner or operator of a CAAPP source shall submit, as part of its complete CAAPP application, a compliance plan, including a schedule of compliance, describing how each emission unit will comply with all applicable requirements. *See*, 415 ILCS 5/39.5(5)(d).

Question*:* *What activities must be completed prior to submitting a CAAPP, or Title V, application?*

Response: The CAAPP program does not specify that particular activities must be completed before submitting a CAAPP application. The CAAPP program indirectly requires that a CAAPP applicant have undertaken such analyses and data gathering activities as necessary to accurately and reasonably address the emission units that are the subject of the application.

In practice, the Illinois EPA expects that there will be three general approaches to the permitting requirements in Section 225.220 of the proposed rules. First, existing units for which compliance with the rules has been demonstrated, the Illinois EPA expects that an application for CAAPP permit modifications will be submitted to include requirements of the adopted rules in its CAAPP permit, which application also includes information confirming compliance.

Second, for existing units for which compliance has not yet been demonstrated, the Illinois EPA expects that an application for CAAPP permit modifications will be submitted to include requirements of the adopted rules in its CAAPP permit, which application describes the current status of the unit with respect to the adopted rules.

Third, for new units for which a CAAPP application has not yet been submitted, the Illinois EPA expects that an application will be submitted to revise the issued construction permit to include provisions of the adopted rules in its construction permits.

Question*:* *How do the date of compliance with the proposed rule and the date for demonstrating compliance relate to each other?*

Response: Under the proposed rule, beginning July 1, 2009, the owner or operator of an affected source with one or more electric generating units must comply with one of the applicable emission standards for each electric generating unit on a rolling 12-month basis.

Question: *Under Section 225.210(d), with regard to the recordkeeping and reporting requirements and the period for maintaining documents, what is meant by the phrase "for cause" in the provision stating that "[t]his period may be extended for cause, at any time prior to the end of five years, in writing by the Agency?"*

Response: The provisions in this Section mirror the provisions in the federal Clean Air Mercury Rule (CAMR). The Illinois EPA believes that the most likely instance in which the "for cause" language would be used would relate to an ongoing enforcement action.

Question: *Under Section 225.210(d)(2) and (3), with regard to the recordkeeping and reporting requirements, what is meant by the phrase "other submissions?"*

Response: Again, the provisions in this Section mirror the provisions in CAMR. The Illinois EPA believes that "other submissions" phrase relates to any other documents required to be submitted to demonstrate compliance.

Respectfully submitted,

By:_____

John J. Kim
Managing Attorney
Air Regulatory Unit
Division of Legal Counsel

Dated: July 7, 2006

Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S FIRST ERRATA SHEET TO ITS RULEMAKING PROPOSAL

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), by and through its attorneys, and submits this First Errata Sheet to its rulemaking proposal of Proposed New 35 Ill. Adm. Code 225. The Illinois EPA proposes the following changes to the text of the rule filed in its rulemaking proposal with the Illinois Pollution Control Board on March 14, 2006:

1. *Amend the definition of "Coal-derived fuel" in Section 225.150 by replacing it with the following:*

"Coal-derived fuel" means any fuel (whether in a solid, liquid or gaseous state) produced by the mechanical, thermal, or chemical ~~process~~ processing of coal.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: _____
Charles E. Matoesian
Assistant Counsel
Division of Legal Counsel

DATED: July 7, 2006

1021 N. Grand Ave., East
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544

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WRITTEN ANSWERS TO PRE-FILED QUESTIONS FOR SID NELSON, JR.

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (Illinois EPA), by one of its attorneys, John J. Kim, and hereby submits written answers to unanswered pre-filed questions of Sid Nelson, Jr., following the hearing held on June 12, 2006, in this rulemaking proceeding. As directed by the Board, Mr. Nelson is now submitting answers to the remainder of his pre-filed questions that were not addressed during the hearing due to time constraints.

UNANSWERED PRE-FILED QUESTIONS SUBMITTED BY AMEREN ENERGY GENERATING COMPANY, AMERENENERGY RESOURCES GENERATING COMPANY, and ELECTRIC ENERGY, INC

Questions for Sid Nelson, Jr.

35. Assuming that appropriately 3.3-3.5 lbs. per million cubic feet of gas would be the normal sorbent injection rate, what would you expect the cost to be for all facilities across the State of Illinois on an annual basis?

If all non-scrubbed plants used sorbent injection at 3.4 lb/MMacf (and excluding the future-scrubbed Baldwin & Havana), around $55 Million. This can be calculated by multiplying the 3.4 times 13,500 total MW, 3,500 acfm/MW, 525,000 minutes per year, a 0.65 overall capacity operating factor, and $1/lb for the sorbent.

36. Has your estimate of the price for bromine-activated sorbents changed since 2003?

Yes, it has increased somewhat.

37. What is the size of the ESPs at Yates?

I understand that Unit 1 has an SCA of 173; Unit 2 has an SCA of 144.

38. Have you ever referred to any one of these as "tiny" ESPs?

I think so. Unit 1, on which the majority of testing is done, was followed by a wet scrubber, so it did not have to be large or kept in top shape, because the jet bubbler scrubber would remove most of any particulate that got through. I am not aware of any opacity or particulate issues with their sorbent injection into the Unit 2 ESP.

39. What is the size of the ESP at Lausche?

370 ft^2/kacfm.

40. Have you ever referred to this as a modestly-sized ESP?

Yes.

41. Was there any indication of higher opacity in: the stack during the demonstration trial of Sorbent Technologies product at the Monroe Generating Station?

Sorbent Technologies' product was not demonstrated at Monroe.

42. What limited the mass injection rate of sorbent at Monroe?

I am not aware that anything limited the mass injection rate at ADA-ES's demonstration at Monroe, which used Norit's Darco Hg™ sorbent. According to their DOE report:

> **"No balance-of-plant problems, such as increased opacity or changes in the ESP operating were noted at Monroe as a result of activated carbon injection."**

Like many Illinois plants, Monroe burned a blend of PRB and bituminous coal, has a cold-side ESP without a scrubber, and uses SO_3 flue gas conditioning. They did their 30-day run injecting at about 5 lb/MMacf.

43. How do the average and largest -sized ESPs in Illinois compare to the SCA values that you have called "tiny" and "modestly sized"?

It appears to me that approximately one-third of Illinois ESP capacity has SCAs greater than 300 ft^2/kacfm, one-third has SCAs between 300 and 200, and one-third has SCAs smaller than 200. So the "average" Illinois would be between "tiny" and "moderately sized," while the largest would be above "moderately sized." Overall, the Illinois ESP population might have slightly smaller SCAs than average nationwide.

Note, however, that SCA alone does not determine particulate or opacity issues. For example, at Progress Energy's Lee Plant, where we did a 30-day run, the SCA was 330 and they require flue gas conditioning to keep opacity under 30% at high load. Yet with the usual coal at Duke Energy's Buck Plant, with a smaller SCA of 240, opacity was generally around 5% or below. So it is much more complicated then just SCA.

44. Are there any limits imposed on your guarantee for process performance, in terms of liquidated damages, compensation for higher than projected auxiliary power, or additional sorbent above and beyond what is projected?

Performance guarantees, when they are offered, are site-specific and negotiated. They are never unlimited.

45. Will Sorbent Technologies provide for the additional sorbent above and beyond what is projected in the guarantee, at no additional cost to the owner, for as long as the plant operates with your technology?

It is possible that we might provide extra sorbent to meet a guarantee. Note, that we require a full-scale test beforehand, however.

46. If the sorbent injection rate went to as high as 8 lbs. per million cubic feet of gas. What would you expect that cost to be?

That would depend on the size of the plant and its operating factor. But it would be eight-thirds as much as the costs at 3 lb/MMacf.

47. Is your Company prepared to give a ten year price guarantee with an inflation adjustment on supply of halogenated activated carbon?

We are prepared to work with utilities on long-term contracts with appropriate cost-increase adjustments for costs that we cannot control.

48. If all the facilities in Illinois and surrounding states went to halogenated activated carbon injection, would your Company and competitors be able to supply that with current capacity?

With current, existing capacity? No. Because not a single power plant is voluntarily reducing their mercury today, installed bromination capacity for the whole Midwest does not yet exist. The capacity of Norit and Sorbent Technologies that does exist currently sits idle unprofitably.

But if there were to be demand, there will be supply. Bromination capacity is simple to build. What we need is regulatory certainty so that we can plan and invest appropriately. Lawsuits against the regulations impedes this certainty.

49. You stated that Buck achieved about 70% mercury removal. At what load point was that achieved?

Over the full range, low load to full load, in the parametric testing. In the long-term run, the 10 lb/MMacf – 70% mercury-removal level was only tested over a holiday weekend, when they happen to be at a low load.

50. What was the average mercury removal over the load range?

About 50% at all loads at 5 lb/MMacf. About 70% at all loads at 10 lb/MMacf. Remember, this was on a hot-side without some permanent equipment changes that would have helped substantially.

51. Is it correct that, to date, no hot side ESP equipped unit has been able to demonstrate 90% mercury removal with sorbent injection over the full load range?

Technically that is true – but so far, only the more-difficult bituminous-coal hot-sides have been tested. We expect Will County 3, and Waukegan 7, which burn subbituminous coal, to be significantly easier – analogous to the situation with cold-side ESPs.

52. You state that you believe that Waukegan 7 and Will County 3 units equipped with hot side ESPs will be able to achieve 90% Hg removal with H-Pac sorbent. Is Sorbent Technologies willing to give guarantees to that effect with appropriate liquidated damages?

Not before testing there. We will be able to give negotiated guarantees proportional to our results after we test there, as we are scheduled to do at Will County early next year. If we offer a guarantee and do not meet it, we don't anticipate liquidated damages, but rather, supplying extra sorbent to meet the required removal-rate level.

UNANSWERED PRE-FILED QUESTIONS SUBMITTED BY DYNEGY MIDWEST GENERATION, INC. & MIDWEST GENERATION, LLC

For Sid Nelson, Jr.

1. Who prepared section 8.4.4.3 of the TSD?

I do not know.

2. Is it correct that the majority of the beneficial uses of fly ash generated by Illinois coal-fired electric generating units is in concrete and cement?

In terms of dollar value, the majority is in concrete.

a. What total volume of fly generated by Illinois coal-fired electric generating units is used in concrete each year on average?

I do not know precisely, but based on American Coal Ash Association (ACAA) and U.S. EPA Region 5 data, I would estimate about 17-20% of that produced.

b. What total volume of fly ash generated by Illinois coal-fired electric generating units is used in cement each year on average?

I do not know, but based on ACAA U.S. and EPA Region 5 data, I would estimate from about 3 to10% of the total Illinois fly ash generated is used in raw feed to cement kilns.

3. Is it correct that the sale of fly ash for these uses (concrete and cement) has the potential to yield more revenue than the sale of fly ash for other uses?

Yes, particularly for concrete.

4. Is it correct that the market for fly ash for concrete and cement is larger than the market for other uses?

In terms of dollars generated, yes. Other uses, such as structural fill, mine backfill, etc. tend to cost utilities slightly.

5. What is the basis for the statement on page 136 of the TSD that "About 20% of the fly ash from U.S. coal fired power plants is sold to the cement industry"?

I am not sure, as I did not write the TSD. But, nationally, about 20% of the fly ash that is generated is used in concrete – not cement. It replaces cement.

a. Please define the term "cement industry" as used in this statement.

I would have said "is sold as a substitute for cement in the concrete industry."

Note that fly ash uses in cement and concrete are very different. Concrete contains a mixture of gravel, sand, water, and cement. Cement is the "glue" that binds the concrete together. When fly ash is used in concrete, it directly substitutes for a fraction of the cement, perhaps 20%, at the ready-mix plant or in structural products. When fly ash is sold to a cement plant, on the other hand, it is usually mixed with the raw feed going to the kiln to form clinker, which is then ground to form cement.

6. What requirements do ash marketers that sell fly ash produced in Illinois place on the fly ash that is being sold as a substitute for cement in concrete?

Carbon content, fineness, a low alkali content, and usually, a foam index measure. The foam index is the degree to which the ash adsorbs air entraining admixture chemicals.

a. What standard do ash marketers that sell fly ash produced in Illinois use for accepting fly ash with carbon in it that is being sold as a substitute for cement in concrete?

ASTM, Illinois DOT, and industry accepted foam index test.

b. What color requirements do ash marketers place on fly ash produced in Illinois that is being sold as a substitute for cement in concrete?

Usually there are no color requirements per se, but a higher-carbon, darker ash will likely have reduced demand. Much concrete is used for roads where color is not critical.

7. What requirements do ash marketers that sell fly ash produced in Illinois place on the fly ash that is being sold as an additive for cement?

Ash for raw feed chemistry must match the chemistry required by the cement kilns. It is on a case-by-case basis depending on the cement other ingredients. Typically, ash is used for its silica, alumina, iron, and carbon contents. (Here the carbon is good as it is used for its fuel value.)

a. What standard do ash marketers that sell fly ash produced in Illinois use for accepting fly ash with carbon in it that is being sold as an additive for cement?

See answer to 6 above.

8. On page 5 of Mr. Nelson's testimony, he states that "with our particular technology, activated carbon injection, the slightest bit of plain activated carbon that gets into [the] fly ash generally makes the fly ash un-saleable" as a substitute for cement in concrete; is it Mr. Nelson's opinion that "plain" activated carbon injected upstream of the existing ESP or fabric filter will adversely effect the marketability of fly ash as a substitute for cement in concrete?

Yes, that is why we developed C-PAC.

a. Please define the term "plain" as that term is used in this statement.

"**Not specially-made for use in concrete."**

b. Is it correct that sorbent injection using "plain" activated carbon installed upstream of the existing ESP or fabric filter will increase the carbon content of fly ash?

Yes.

c. Is it correct that sorbent injection using "plain" activated carbon installed upstream of the existing ESP or fabric filter will darken the color of fly ash?

Yes.

9. Is it correct that sorbent injection using "plain" activated carbon installed upstream of the existing ESP or fabric filter will result in an increase in the amount of fly ash generated in Illinois that will be disposed?

Yes, that is why we developed C-PAC – although there are alternative methods to retain fly ash use in concretes (Toxecon I, II, and III,™ Carbon Burn-Out,™ ozone pacification, etc.) and, perhaps, alternative products.

10. Please define the term "commercially available" as that term is used on page 3 of Mr. Nelson's testimony.

It means that you can purchase it if you wish.

11. Please explain what Mr. Nelson meant by the statement on page 5 of his testimony that "[tlhere is also a possibility of inorganic sorbents, non-carbon based sorbents, which a number of manufactures are testing."

A number of companies are developing and demonstrating inorganic, non-carbon mercury sorbents that would likely automatically be useable in concretes. Such companies include Amended Silicates, Engelhard, and the company selling Min-Plus.

a. Please define the term "possibility" as that term is used in this statement?

I have not yet seen full-scale mercury performance data for these various inorganic sorbent products yet, so I do not know how well they work.

b. What is the status of the testing referenced in this statement?

The Amended Silicates' product was tested at full-scale earlier this year at Cinergy's Miami Fort Plant, but I believe that the results have not been publicly released by DOE yet. The Min-Plus product has had some short-term tests and I believe they are seeking longer-term, more definitive testing. I believe that Ameren and its partners may already be testing Engelhard's inorganic mercury sorbent at their Joppa Plant in Illinois.

12. On page 5 of Mr. Nelson's testimony, he states that B-PAC can "adversely affect the air entrainment admixtures that cause the problem with use of fly ash containing carbon in concrete."

a. What is the basis for this statement?

Measurements of the effect of B-PAC on air entraining admixtures (AEAs).

b. What are air entrainment admixtures used for?

To generate and stabilize fine bubbles in a concrete for workability and freeze-thaw capability.

c. How does B-PAC adversely affect the air entrainment admixtures?

Like plain activated carbons and the existing unburned carbon component of fly ash, it adsorbs much of the AEA surfactants specifically added to concrete form the fine bubbles. While significantly better than unbrominated PACs in this respect, B-PAC still adsorbs enough AEAs to cause problems in concrete if a large amount is mixed with the fly ash. That is why we developed the "concrete-friendly" C-PAC variation.

13. On page 5 of Mr. Nelson's testimony, he states that Sorbent Technologies Corporation is "going to be demonstrating this C-PAC product in just a few months at full-scale in a DOE program and the Crawford Plant of Midwest Generation in the Chicago area."

a. Please define the term "demonstrated" as that term is used in this statement?

Inject sorbent continuously at full-scale for 30-days as the plant operates normally.

b. What is the status of the demonstrations referenced in this statement and please identify when all demonstrations will be completed?

The demonstration is currently on track to be completed by about the end of the summer.

c. What is the basis for Mr. Nelson's statement on page 5 of his testimony that the "injection rates" will be "capable [of] targeting 90% mercury removal or better?"

We are planning to inject C-PAC at a rate capable of achieving an average of 90% mercury removal over the 30 days.

d. When will the "extensive testing" of the concrete made from fly ash that has been impacted by C-PAC be performed. (see T p. 5)

By late summer or, perhaps, early fall.

Respectfully submitted,

By:_____
John J. Kim
Managing Attorney
Air Regulatory Unit
Division of Legal Counsel

Dated: July 7, 2006

Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

STATE OF ILLINOIS)
) **SS**
COUNTY OF SANGAMON)
)

CERTIFICATE OF SERVICE

I, the undersigned, an attorney, state that I have served electronically the attached ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S FIRST ERRATA SHEET TO ITS RULEMAKING PROPOSAL, POST-HEARING COMMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and WRITTEN ANSWERS TO PRE-FILED QUESTIONS FOR SID NELSON, JR. upon the following person:

Dorothy Gunn
Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph St., Suite 11-500
Chicago, IL 60601-3218

and mailing it by first-class mail from Springfield, Illinois, with sufficient postage affixed to the following persons:

SEE ATTACHED SERVICE LIST

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

_____
Charles E. Matoesian
Assistant Counsel
Division of Legal Counsel

Dated: July 7, 2006

1021 North Grand Avenue East
Springfield, Illinois 62794-9276
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SERVICE LIST 06-25

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