BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: PROPOSED NEW CAIR SO_2, CAIR NO_x ANNUAL AND CAIR NO_x OZONE SEASON TRADING PROGRAMS, 35 ILL. ADM. CODE 225, CONTROL OF EMISSIONS FROM LARGE COMBUSTION SOURCES, SUBPARTS A, C, D and E	)))))))))	R06-026 (Rulemaking – Air)

NOTICE OF FILING

To: Those Individuals Listed on Attached Service List

Please take notice that on November 17, 2006, the undersigned caused to be filed with the Clerk of the Illinois Pollution Control Board the Motion for Leave to File Instanter Testimony of Michael L. Menne and the Testimony of Michael L. Menne on behalf of Petitioners, Ameren Energy Generating Company, AmerenEnergy Resources Generating Company, and Electric Energy Inc., copies of which are herewith served upon you.

By: _____ For
David L. Rieser
One of the Attorneys for Petitioners

James T. Harrington
David L. Rieser
Jeremy Hojnicki
McGuireWoods LLP
77 West Wacker, Suite 4100
Chicago, IL 60601
Telephone: 312/849-8100

R06-026
SERVICE LIST

John J. Kim
Rachel L. Doctors
Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

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

Sasha M. Reyes
Steven J. Murawski
Baker & McKenzie
One Prudential Plaza, Suite 3500
130 East Randolph Drive
Chicago, IL 60601

William A. Murray
City of Springfield
Office of Public Utilities
800 East Monroe, 4th Floor
Municipal Building East
Springfield, IL 62757

Sheldon A. Zabel
Kathleen C. Bassi
Steven Bonebrake
Schiff Hardin LLP
6600 Sears Tower, 233 South Wacker Drive
Chicago, IL 60606

Faith E. Bugel
Environmental Law and Policy Center
35 East Wacker Drive, Suite 1300
Chicago, IL 60601

Matthew J. Dunn, Division Chief
Office of the Attorney General
Environmental Bureau
188 West Randolph, 20th Floor
Chicago, IL 60601

Keith I. Harley
Chicago Legal Clinic, Inc.
205 West Monroe Street, 4th Floor
Chicago, IL 60606

Virginia Yang, Deputy Legal Counsel
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702

Daniel McDevitt
Midwest Generation
440 South LaSalle Street, Suite 3500
Chicago, IL 60605

S. David Farris, Manager
Environmental, Health and Safety
City of Springfield, Office of Public Utilities
201 East Lake Shore Drive
Springfield, IL 62757

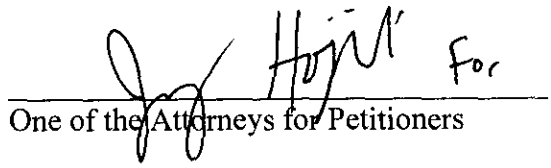
John Knittle, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, IL 60601-3218

Bill S. Forcade
Katherine M. Rahill
Jenner & Block
One IBM Plaza, 40th Floor
Chicago, IL 60611

Bruce Nilles, Attorney
Sierra Club
122 West Washington Avenue
Suite 830
Madison, WI 53703

CERTIFICATE OF SERVICE

I, David L. Rieser, one of the attorneys for Petitioners, hereby certify that I served a copy of Motion for Leave to File Instanter Testimony of Michael L. Menne and the Testimony of Michael L. Menne on behalf of Petitioners upon those listed on the attached Notice of Filing on November 17, 2006 via First Class Mail, postage prepaid.



One of the Attorneys for Petitioners

James T. Harrington
David L. Rieser
Jeremy Hojnicki
McGuireWoods LLP
77 West Wacker, Suite 4100
Chicago, Illinois 60601
Telephone: 312/849-8100

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: PROPOSED NEW CAIR SO_2, CAIR NO_x ANNUAL AND CAIR NO_x OZONE SEASON TRADING PROGRAMS, 35 ILL. ADM. CODE 225, CONTROL OF EMISSIONS FROM LARGE COMBUSTION SOURCES, SUBPARTS A, C, D and E	))))))))	R06-026 (Rulemaking – Air)

MOTION FOR LEAVE TO FILE INSTANTER TESTIMONY OF MICHAEL L. MENNE

NOW COME Ameren Energy Generating Company, AmerenEnergy Resource Generating Company, and Electric Energy, Inc. (collectively "Ameren"), by their attorneys, McGuireWoods LLP, and pursuant to 35 Ill. Adm. Code 101.500, moves that the Illinois Pollution Control Board grant Ameren leave to file instanter the pre-filed testimony of Michael L. Menne. In support of its Motion, Ameren states as follows:

1. On November 6, 2006, the Hearing Officer issued an order which provided that, *inter alia*, any persons wishing to testify at the November 28, 2006 Clean Air Interstate Rule ("CAIR") hearing in Chicago must pre-file the testimony and any related exhibits with the Board and serve the Hearing Officer and all persons on the service list no later than November 10, 2006.

2. Ameren appeared and participated during the first round of CAIR hearings held from October 10 through October 12, 2006 in Springfield.

3. As a result of the complex nature of the technical issues raised in this testimony and the efforts to negotiate an agreed resolution of those issues, Ameren was unable to file its testimony by the Hearing Officer's deadline.

4. None of the parties to this proceeding will be prejudiced by the short delay in the filing of Ameren's pre-filed testimony.

WHEREFORE, for the reasons set forth above, Ameren respectfully moves that the Board grant leave to file instanter the pre-filed testimony of Michael L. Menne.

Respectfully submitted,

AMEREN ENERGY GENERATING COMPANY
AMERENENERGY RESOURCE GENERATING COMPANY
ELECTRIC ENERGY, INC.

By: _____ For David L. Rieser
One of its Attorneys

Dated: November 17, 2006

James T. Harrington
David L. Rieser
Jeremy R. Hojnicki
McGuireWoods LLP
77 West Wacker Drive, Suite 4100
Chicago, IL 60601
Telephone: 312/849-8100

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED NEW CAIR SO_2, CAIR NO_x	)	
ANNUAL AND CAIR NO_x OZONE SEASON	)	R06-026
TRADING PROGRAMS, 35 ILL. ADM.	)	(Rulemaking – Air)
CODE 225, CONTROL OF EMISSIONS	)	
FROM LARGE COMBUSTION SOURCES,	)	
SUBPARTS A, C, D and E	)	

TESTIMONY OF MICHAEL L. MENNE

My name is Michael L. Menne and I am the Vice President of the Environmental, Safety and Health Department for Ameren Services Company, a subsidiary of Ameren Corporation. I am responsible for developing policies and procedures relating to environmental compliance for Ameren Corporation and its subsidiaries. In addition, I am responsible for ensuring that Ameren's operating subsidiaries comply with state and federal permitting conditions and regulatory requirements.

Through its operating subsidiaries, Ameren operates regulated utilities and power plants in Illinois and Missouri. Ameren Corporation owns the following utility companies: Illinois Power Company (AmerenIP), Central Illinois Public Service Company (AmerenCIPS), Central Illinois Light Company (AmerenCILCO), and Union Electric Company (AmerenUE), the last of which operates primarily in the State of Missouri. The utility companies procure power from Ameren generating companies also located in Illinois: Ameren Energy Resources Generating Company (AERG), Ameren Energy Generating Company (AEG), and Electric Energy Inc. (EEI). In total, Ameren's coal-fired facilities in Illinois comprise 19 steam generating units located at seven plants

throughout the state. These are primarily base load facilities which provide electricity for central and southern Illinois homes and businesses. They employ 1,018 people in seven communities.

My testimony will focus on the performance of advanced second generation Overfire Air Systems (OFA) for control of NOx emissions, and why reductions from OFA systems should be eligible for allowances from the Clean Air Set Aside ("CASA").

In this CAIR proceeding, IEPA has proposed a series of Clean Air Set Aside (CASA) categories, whereby allowances will be allocated for qualifying projects in order to promote a variety of policy goals. Ameren supports the IEPA in establishing an innovative approach to promote important energy and environmental goals. Ameren believes that CASA represents a useful balancing of technology, economic, energy and environmental considerations in achieving those goals. Ameren agrees that the CASA set asides, and the general structure of the proposed rule, are appropriate mechanisms to support the stated policy objectives. Ameren also supports CASA set asides that promote these policy objectives.

In the IEPA's proposal, one of the CASA categories is the Air Pollution Control Equipment Upgrade Category, which is intended to grant allowances to companies that achieve reductions by installing new qualifying air pollution control devices. In IEPA's proposal, while reductions obtained from specifically listed add-on NOx emission control devices such as SCR and SNCR are eligible for allowances, reductions from OFA systems are specifically excluded from the proposal. Yet OFA systems are a valuable and cost effective source of NOx reductions and their use should be encouraged by the CASA program.

Ameren has long been a leader in using OFA to reduce NOx emissions and we get some of the lowest NOx emissions in the country on our units compared to other units that are not using any post combustion NOx control technology. Emissions from Ameren's top performing units without an SCR or SNCR, were at or below 0.10 lbs/MMbtu, the NOx emissions level identified by U.S. EPA as "well controlled." These reductions were largely achieved through rigorous optimization of advanced OFA systems, and without the benefit of "add-on" post-combustion emissions control technology.

OFA, or over fire air, is essentially a combustion optimization process. In technical terms, part of the combustion air is introduced into the furnace through nozzles above the firing zone. With less oxygen available in the firing zone, the formation of NOx is inhibited (i.e., less NOx is produced in the first instance). To do this, we control where we put the air in the boiler very carefully to reduce NOx emissions. It is called over fire air because we take some of the air we would normally mix with the coal and put it on top of or over the normal firing region of the furnace or boiler. This helps to reduce NOx emissions in a couple of ways. First, we take a short, bright, intense fire, which generates a high temperature and we make it a longer, lazier, cooler flame. The same amount of total heat is released over a longer distance. NOx generation is directly related to flame temperature, so the cooler the flame the less NOx generation.

The other factor that affects NOx is the amount of air available in the main combustion zone. Because we now add air higher in the furnace, we have less than the required amount of air needed in the main combustion zone. NOx is formed because excess oxygen is available at high temperatures to react with nitrogen to form NOx.

Since we have less than the required amount of air all the available oxygen first reacts with the fuel and in theory very little oxygen is left to react with the nitrogen in the air. By the time we add the rest of the combustion air via OFA the furnace is cooler so the oxygen is less likely to react with nitrogen and form NOx.

Many other parameters affect how well the OFA process works and what reductions are possible. As noted in IEPA's TSD, at Table 5-2, emission reductions for OFA are typically reported in the 10-30% range. However, these levels of reductions would be more typical for first generation OFA systems. Newer advanced OFA systems, properly optimized, can achieve for 60 to 70% or more NOx reduction from baseline NOx levels. Advanced or second generation OFA systems allow advanced air staging and other modifications to improve NOx removals. These systems can include flow control dampers, airflow measuring devices, port designs to enhance mixing of air and flue gas, and other measures. In addition, advanced OFA also includes tuning of the OFA system to optimize performance through use of advanced process control systems that rely on intelligent software packages generally called neural nets or neural networks, for combustion optimization. Neural networks alone can provide an additional 10-30% reduction for an OFA system.

Attachment A shows NOx reductions for AmerenUE units since 1990. These show that NOx levels have continued to decrease, mostly due to advances in tuning. For Labadie and Rush Island we have reduced NOx by approximately 85% from baseline levels. Much of this is due to innovative tuning approaches including the use of neural networks to continually optimize the combustion on units. As a result, Ameren remains a leader in advanced OFA technology.

The IEPA proposal specifically identifies reductions achieved from Selective Non Catalytic Reduction (SNCR) systems as eligible for allowances. SNCR involves the injection of an ammonia compound into the upper furnace of a boiler. SNCR is the same chemical reaction as SCR, Selective Catalytic Reduction, only it takes place without the need of a catalyst, which is the expensive part of the SCR. The SNCR works without a catalyst since it is put in the boiler at a much higher temperature where the reaction of NOx with NH3 to form H2O and N2 will take place on its own. SNCR is much cheaper to install since there is no catalyst, but it does use an expensive form of ammonia, normally urea.

IEPA's TSD, at Table 5-2 states that SNCR can achieve NOx reductions of about 30-60%. However, SNCR tends to be less effective when the inlet NOx concentrations are lower, and SNCRs are more effective where units have higher NOx concentrations, such as with uncontrolled units. As noted in the EPA ACT document on NOx emission reductions relied upon by IEPA in the TSD, reduced inlet NOx concentrations lower the SNCR reaction kinetics and thus the potential for NOx reductions. Therefore, SNCR reductions depend on many unit specific factors. SNCR units can become more effective when used with a well tuned OFA system.

Ameren has demonstrated that advanced OFA with aggressive tuning measures can achieve emissions reductions comparable to SNCR (30-60%)(See Attachment A). Yet, even advanced OFA has capital costs substantially less than an SNCR system. Other benefits include avoided increases in auxiliary power due to fan losses, and increased unit generation flexibility due to improved ability to implement load reductions. The inability to operate a unit with an SCR at low load conditions has a very negative impact on our

dispatch operations during low demand periods. These issues do not exist with our advanced OFA/SNCR technologies.

As well, advanced OFA is a natural partner with an SNCR system. Using OFA with SNCR can achieve NOx values below .10 lb/mbtu the standard default emissions value typically attributed to SCR, but without the much more expensive SCR technology. That is to say, while advanced OFA can provide comparable reductions at a lower cost than SNCR, advanced OFA plus SNCR can reduce emissions to levels comparable to SCR at a lower cost. If a company can achieve SNCR levels with advanced OFA technology or approach SCR emission levels with advanced OFA/SNCR, then it can meet the desired NOx levels with much more reasonable capital expenditures.

Ameren believes the proposed rule should be amended to remove the specific exclusion for reductions achieved by OFA systems if the OFA system installed that provides at least a 30% reduction. In addition, reductions achieved by an OFA system, installed in conjunction with an SNCR or SCR system as part of a single NOx planning project, should be evaluated according to the baseline NOx emissions prior to the installation of the OFA or SCR/SNCR system.

Ameren believes these amendments are consistent with the goals of the CASA. OFA allowances will not significantly or unfairly deplete available CASA allowances as very few companies install and tune OFA systems to provide these levels of reductions. CASA allowances are appropriate to encourage installation of advanced OFA systems that provide at least a 30% reduction, since that level of reduction is the same as IEPA's stated level of reduction for SNCR. The 30% cutoff also represents the demarcation between traditional and advanced OFA systems and thus will encourage companies to

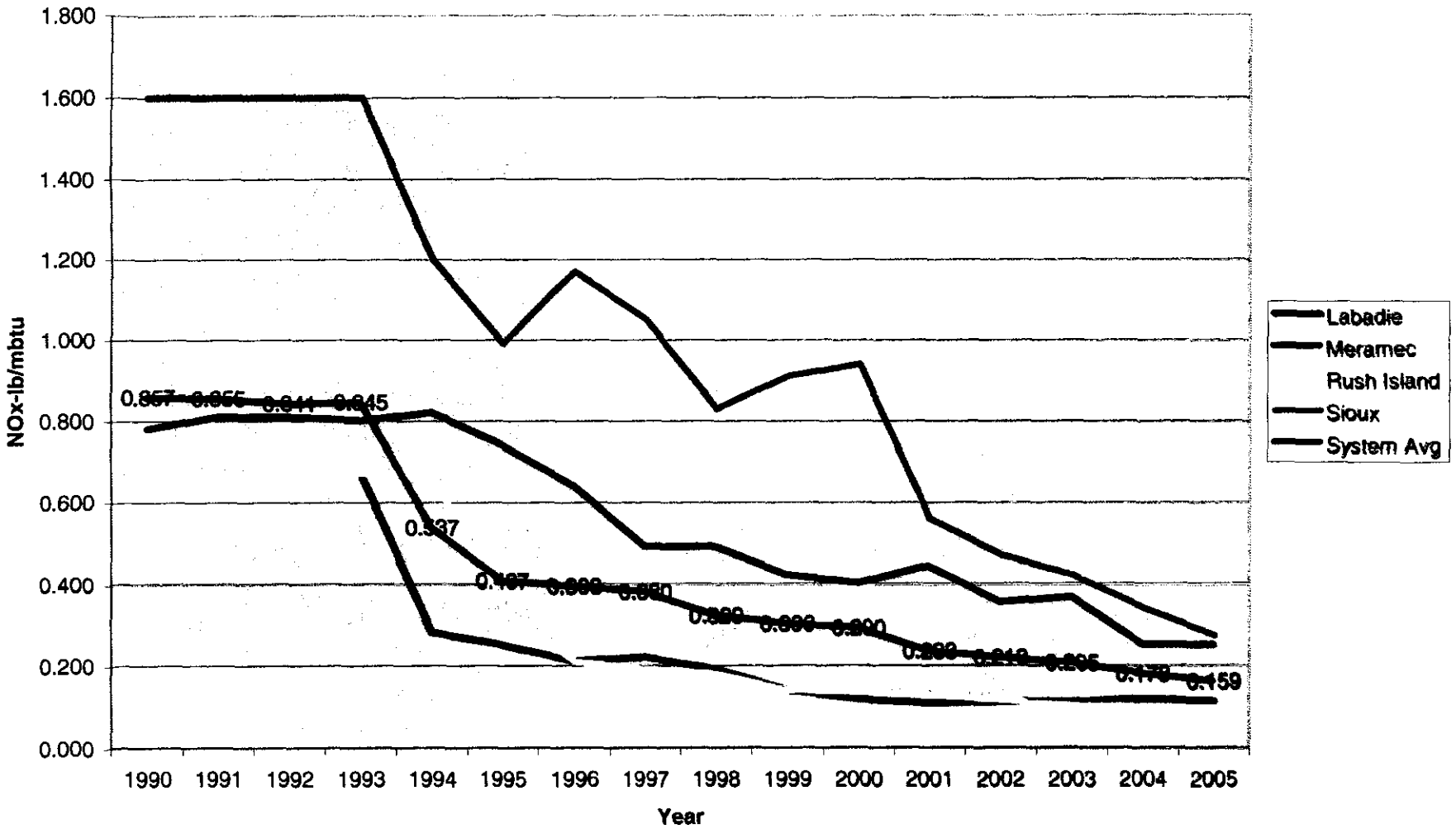
seek to optimize the most cost effective OFA technologies. This position is also consistent with the notion that environmental control innovations and lower cost compliance options should be rewarded.

Although advance OFA projects meeting a minimum 30% reduction level should be entitled to CASA allowances on their own, Ameren also believes that such projects should also be entitled to allowances when undertaken with SNCR or SCR projects. First, as noted above, advanced OFA plus SNCR can approach the "gold standard" emissions level of 0.10 lbs/mmBtu typically targeted for SCR at a much lower cost. Any suite of technologies that can approach SCR reduction levels at lower costs should certainly be eligible for allowances based on the total reductions obtained by the entire system.

Second, it can be difficult to separate the reductions from advanced OFA and SNCR when the two technologies are combined. If we use a baseline approach, an SNCR system is likely to provide a lower level of reductions if installed after a fully tuned OFA system than before it because of the differences between NOx concentrations. Indeed, the OFA exclusion currently in the CASA proposal will encourage companies to install SNCR first, obtain a full suite of credits, and then add advanced OFA later. This sequence will not produce more or less reductions than starting with OFA, but it will "attribute" more reductions to the SNCR, even though the reductions came from the combined effect of both systems. The better engineering practice is to add and fully tune OFA systems first, and then design and install the post-combustion SNCR system. Based on our data, this approach would achieve substantial NOx reductions more quickly and more cost effectively.

Attached to my testimony as Attachment B is proposed language to effectuate the changes we are requesting. This language would amend Section 255.460(c)(1) and 225.560(c)(1) by limiting the exclusion for OFA technologies in the list of air pollution control technologies eligible for receiving CASA allowances.

Ameren UE NOx
Annual Average Emission Rates



ATTACHMENT B
PROPOSED AMENDMENT TO 225.460(c)(1) and 225.560(c)(1)

1) Air pollution control equipment upgrades at existing coal-fired electric generating units, as follows: installation of flue gas desulfurization (FGD) for control of SO_2 emissions; installation of a baghouse for control of particulate matter emissions; and installation of selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), or other add-on control devices for control of NO_x emissions. Air pollution control upgrade projects do not include the addition of low NO_x burners, overfired air techniques or gas reburning techniques for control of NO_x emissions, (unless (1) an OFA system achieves a minimum 30% reduction over baseline; or (2) such projects are installed as part of a phased NOx reduction strategy, that includes or will include a advanced computerized combustion control system or one of the air pollution control equipment upgrades for control of NOx emissions listed above); projects involving flue gas conditioning techniques or upgrades, or replacement of electrostatic precipitators; or addition of activated carbon injection or other sorbent injection system for control of mercury. For this purpose, a unit shall be considered "existing" after it has been in commercial operation for at least eight years