



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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ROD R. BLAGOJEVICH, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

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October 17, 2008

Ms. Lynn Buhl, Regional Administrator
Office of the Regional Administrator
USEPA Region 5, R19J
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Ms. Buhl:

On behalf of Governor Rod R. Blagojevich and in response to your letter of August 18, 2008, I am submitting additional information for United States Environmental Protection Agency (USEPA) to consider before it takes final action on attainment/nonattainment designations for the 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) for the State of Illinois. USEPA's decision to modify the designation boundaries recommended by Illinois and to designate Rock Island and Massac counties as nonattainment areas is contrary to the weight of evidence and therefore is not supported by the Clean Air Act and relevant federal guidance. Based on the information provided, we believe that there is no sound basis for concluding that these counties contribute to ambient violations measured in Davenport, Iowa and Paducah, Kentucky. As a result of this additional analysis and information, we urge USEPA to reconsider and concur with Illinois that Rock Island and Massac counties are, and should be designated as, attainment areas for the 24-hour PM_{2.5} air quality standard.

Rock Island County

USEPA's guidance memorandum (June 8, 2007, Robert J. Meyers, Acting Assistant Administrator, Area Designations for the Revised 24-Hour Fine Particulate National Ambient Air Quality Standard) states that an area can be excluded from a nonattainment area if: "1) violations are not occurring in the excluded portions of the recommended area, and 2) the excluded portions do not contain emission sources that contribute to the observed violations." As you are aware, USEPA included Rock Island County, not because of ambient violations within the county, but based primarily on a 9-factor analysis that suggests that Rock Island County contributes significantly to violations observed in Davenport. The Illinois Environmental Protection Agency (Illinois EPA) has worked closely with the Iowa Department of Natural Resources (Iowa DNR) to perform

the following technical analyses, and both states agree that Rock Island County does not contribute to violations of the 24-hour PM_{2.5} standard in Davenport.

- Illinois EPA performed modeling, using USEPA's AERMOD, that shows the combined potential impact of PM_{2.5} emissions from all Rock Island County, Illinois industrial sources on the Davenport monitor are insignificant.
- Air quality modeling performed by Iowa DNR, using USEPA's AERMOD, shows that the overwhelming source contribution to high PM_{2.5} at the Davenport monitor comes from the Blackhawk Foundry, which is located about 100 yards from the monitor.
- Additional Illinois EPA photochemical modeling shows that zeroing out Rock Island County anthropogenic emissions does not have a significant effect on PM_{2.5} concentrations at the Davenport monitor, further demonstrating that Rock Island County emission sources are not a significant factor in the high PM_{2.5} readings at the Davenport monitor. The modeling shows that the highest 24-hour contribution from Rock Island County for either sulfates or nitrates is less than 1 microgram per cubic meter. These are Rock Island's maximum impacts, and these maximum impacts do not occur on the same days as high PM_{2.5} levels at the Davenport monitor. On high PM_{2.5} days in Davenport, Rock Island's contributions would be even smaller.

USEPA Region 7 performed photochemical modeling independently from Illinois EPA's modeling. Region 7 used a technique called source apportionment to demonstrate that Rock Island County contributes less than 1% of the total sulfate, nitrate, and direct PM_{2.5} on high PM_{2.5} days in the Quad Cities. This result is similar to the Illinois EPA's result, even though it was obtained using a different modeling approach (zero out versus source apportionment), using separate model inputs, and conducted by separate agencies. Region 7's results add further support to our conclusion that Rock Island County emissions are not significantly contributing to PM_{2.5} nonattainment in Davenport.

- Iowa DNR has previously shown that the wind directions occurring on high PM_{2.5} days are consistently from, and directly related to emissions of, the nearby Blackhawk Foundry, and are not consistent with emissions originating from Rock Island County. The wind rose is a graphical display of the frequency of wind directions on the days during 2005-2007 when exceedances of the 24-hour PM_{2.5} standard were observed. The wind rose shows that the observed exceedances during 2005-2007 occurred with south to southwest winds. The urbanized portions of Rock Island County, and the few PM_{2.5} emission sources in Rock Island County, are located to the east of the monitor, providing strong evidence that Rock Island's sources are not a contributing factor on the high PM_{2.5} days. Easterly winds occurred on only an extremely small percentage of the hours on the exceedance days for the monitor, as the wind rose clearly indicates.
- The June 8, 2007 USEPA memorandum cited above provides that for the 24-hour PM_{2.5} NAAQS boundary determinations, there are no presumptive metropolitan statistical area (MSA) boundaries. This policy is based in part upon recognition

that there may be “circumstances specific to a particular area” which would not support a presumptive MSA boundary. These specific circumstances are very much the case with the Davenport monitor in that there exists an upwind nearby source that overwhelmingly contributes to the measured violations. In light of this USEPA policy, it appears especially appropriate that USEPA take into account the specific circumstances surrounding the local source contribution to the violating monitor. This policy clearly provides that USEPA recognize the importance of local contributions and emphasizes such contributions to a higher degree than background emissions and emissions from non-local sources, in particular, generally downwind sources such as those in Rock Island County. This focus on local sources would also logically carry forward to a case where nearby monitors, other than the violating monitor, in the potentially contributing areas have always shown attainment and have both recently and historically recorded levels well below the standard – as is the case with the Rock Island County monitor.

- A comparison of countywide emissions in the Quad Cities area shows that emissions from Scott County, Iowa, where the monitor is located, are substantially larger than the emissions from Rock Island County. In the case of direct PM_{2.5}, almost 94% of point source emissions from the two counties combined comes from Scott County. Iowa DNR’s analysis shows that Rock Island County emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) are negligible in comparison to emissions of these pollutants in Iowa counties.
- A comparison performed by the Lake Michigan Air Directors Consortium (LADCO) of speciation data collected in Davenport and other Midwestern cities shows that the speciation profile in Davenport is similar to profiles observed throughout the region. LADCO concludes that the data at the Davenport speciation monitor show emissions in the area are dominated by regional transport, with nitrate being a strong contributor in the winter, and sulfate and organics being high in the summer. These findings contrast data from the violating monitor, located adjacent to the Blackhawk Foundry, which show a large local contribution.
- USEPA has indicated its use of a Contributing Emission Score (CES) for each county. The CES score for Rock Island County is given at 27, which is substantially less than Clinton County, Iowa’s CES of 52 and yet Clinton County was given a classification of attainment by USEPA. Rock Island County’s CES being almost one-half of an adjacent attaining county (i.e., Clinton County) provides further evidence supporting Rock Island County’s designation as attainment. In addition, Rock Island County’s CES is around one-third of Muscatine County, Iowa (CES = 80) and nearly one-fourth of Scott County, Iowa (CES = 100), providing further evidence that Rock Island County contributes a mere fraction in comparison to other Iowa counties.
- In addressing Rock Island County integration with Scott County in regards to commuting and mobile source emissions, Illinois EPA notes that: 1) USEPA’s guidance states that there are no presumptive boundaries for the nonattainment

area; 2) modeling has shown that all emissions, including mobile source emissions, from Rock Island County do not contribute significantly to high PM2.5 levels at the Davenport monitor; and 3) USEPA has already promulgated mobile source control measures that will greatly reduce mobile source emissions in coming years in all states in the surrounding area.

- The total county-wide PM2.5 point-source emissions in Rock Island County (34 tpy) are very small and originate from sources that are not upwind or in close proximity to the Davenport monitor.
- USEPA states in its letter to Governor Blagojevich that it recognizes that emissions in close proximity to the monitor may make an important contribution to the violations and that reduction of emissions close to the monitor may suffice to address the violation, but that USEPA must apply the nonattainment designation to the entire area that contributes to the violation. On these points Illinois EPA must once again emphasize USEPA's policy and its stated premise of no presumptive boundaries. Moreover, it is critical to highlight that if emissions reductions close to the monitor suffice to address the violation (which evidence clearly suggests will be the case), then the primary cause of the violation and the appropriate remedies are inherently linked to local sources and reductions in emissions at those sources. Furthermore, background emission levels of PM2.5 are far less likely to come from small downwind sources in comparison to large upwind sources, especially when the pollutant involved is one where transported pollutants can make up a substantial component. Both sulfates and nitrates, which can be significant components of PM2.5, are known for their ability to be transported and impact areas outside of their origin. Given that the prevailing winds in the high PM2.5 area are out of the south and southwest (i.e., upwind), it is reasonable to conclude that sources to the south and west of Davenport contribute more significantly to the background levels at the Davenport monitor. Rock Island County sources are generally to the east of the Davenport monitor (i.e., downwind).

A more complete description of Illinois EPA's technical analyses regarding Rock Island County is included as Attachments 1 and 2. A copy of the wind rose prepared by Iowa DNR, and described above is included as Attachment 3.

Massac County

USEPA intends to designate Massac County in southern Illinois as nonattainment for the 24-hour PM2.5 standard because of the proximity of this county to McCracken County, Kentucky, where a monitor within the City of Paducah recorded a violation during 2005-2007.

Illinois EPA evaluated the wind directions that occurred on the days in 2005-2007 when PM2.5 levels in Paducah exceeded the 24-hour standard. A graphical depiction of the wind frequency distribution on these days is included as Attachment 4. As shown in Attachment 4, the predominant wind direction on high PM2.5 days in Paducah is southerly, with a secondary maximum from the northeast. Note that Massac County is located directly north of Paducah, and the Joppa Steam plant, Massac County's largest

emission source, is located to the northwest. The wind directions that occurred on high PM2.5 days in Paducah are not consistent with impacts from Massac County.

Moreover, USEPA Region 4 made the same conclusion. In their response to Kentucky regarding potential contributing sources to monitored exceedances in Paducah, Region 4 concluded that "...potential emissions contributions originating from a northwesterly direction should be eliminated." Region 4's analysis of wind directions on high PM2.5 days (included here as Attachment 5) is similar to the Illinois EPA's analysis, showing high contributions from southerly and northeasterly directions and low contributions from the north and northwest. Based on USEPA's own analysis, wind directions associated with high PM2.5 concentrations in Paducah are not consistent with impacts from Massac County.

The largest emission source in Massac County is the Joppa Steam Plant. The Joppa Steam Plant consists of six boilers, each rated at 183 MW. Currently, NOx control is achieved by the use of low NOx burners, with overfire air also being applied at boiler 6. Currently, sulfur emissions at the Joppa plant is reduced by use of low sulfur coal in all boilers. Particulate matter emissions are controlled by cold-side Electro-Static Precipitators. Illinois EPA urges USEPA to consider that Ameren, the owner of the Joppa Steam Plant, has committed to significantly reduce both its NOx and SO2 emissions through the installation of new control equipment, which will be operational before the likely attainment date of the 24-hour PM2.5 standard. All the low NOx burners will be supplemented with separated overfire air (SOFA) in 2010 to increase combustion efficiency. In addition, boilers 1 and 2 and boilers 5 and 6, respectively, will get new scrubbers and baghouses in 2013 and 2014. A copy of Ameren's commitment to install controls at the Joppa plant is included as Attachment 6.

I appreciate the opportunity to provide additional information for USEPA to consider before it takes final action on attainment/nonattainment designations for the 24-hour PM2.5 NAAQS for the State of Illinois. Illinois and Iowa have worked closely on the development of this information and we will continue to coordinate our efforts on air quality issues. We believe an analysis of all factors strongly supports the designation boundaries recommended by Illinois, i.e., to designate Rock Island and Massac counties as attainment areas. We urge USEPA to designate Rock Island and Massac counties as attainment areas for the 24-hour PM2.5 air quality standard.

Very truly yours,



Douglas P. Scott
Director

cc: Cheryl Newton, Chief
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5

Attachment 1 – Memorandum from Scott Leopold



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

MEMORANDUM

DATE: October 7, 2008
TO: Rob Kaleel, Manager, AQPS
FROM: Scott Leopold, AQPS
SUBJECT: Response to designation of Rock Island County – PM2.5

I have completed additional analyses to determine the contribution of PM2.5 and precursor emission sources in Rock Island County, Illinois to monitored violations in Davenport, Iowa. The study includes three modeling analyses, utilizing both the standard Gaussian approach of AERMOD (to address direct PM2.5 emissions) and a gridded photochemical modeling approach (to address PM2.5 precursors). I have also compared emissions data for Rock Island and Scott counties, and provided further analysis of a wind rose developed by Iowa DNR.

AERMOD Modeling

Illinois EPA has conducted AERMOD modeling of industrial PM emissions from Rock Island County. The most recent version of AERMOD was used (dated 07026). The meteorological data used is from the period 2003-07 and was developed from Moline surface data and Davenport upper air data. Only those facilities emitting at least 5 tpy of PM10 were included in this modeling. Individual sources at these facilities that emit less than 0.5 lb/hr of PM10 were excluded because of their insignificant emissions. This left eight sources and 24 emission units in the inventory. The sources included in the modeling are:

- Rock Island Arsenal
- John Deere
- River Bend Industrial Center
- Cardinal Red-E-Mix
- Upper Rock Island County Landfill
- 3M Cordova
- Builders Sand and Cement
- Tyson Fresh Meats

PM2.5 emissions were used where available, or where a reasonable fine particle fraction could be obtained from AP-42, but nearly half of the sources were conservatively modeled using PM10 emissions to represent PM2.5.

The maximum 24-hour concentration attributed to these sources over the five years modeled was 1.17 ug/m³ at the receptor that represents the monitor. In comparison, the highest 24-hour concentration from the Iowa DNR AERMOD simulation of the Blackhawk Foundry emissions (from Iowa DNR's Technical Analysis) at the monitor location was 30.68 ug/m³. USEPA has not yet promulgated a significant impact threshold for 24-hour PM_{2.5}, but USEPA has proposed a range of 24-hour significant impact levels (SIL) for PSD purposes (FR 54115, September 21, 2007). The proposed SILs for Class II areas range from 1.2 to 5.0 ug/m³, which would be used under the PSD program to define the significance of impact for a single source. Based on the proposed SILs, the maximum impact of all Rock Island County sources combined, 1.17 ug/m³, is insignificant.

CAMx Modeling – Zero-Out Approach

I have evaluated the potential impacts of PM_{2.5} precursor emissions, specifically SO₂ and NO_x, from sources in Rock Island County to PM_{2.5} concentrations in Davenport using the CAMx photochemical model. This is the model that is being used by the LADCO states in support of SIP attainment demonstrations for PM_{2.5} and ozone. The air quality analyses were conducted with the CAMx model using LADCO's Base M inputs for emissions and meteorology. The Base M/CAMx model configuration has undergone a rigorous performance evaluation and has been shown by LADCO to meet USEPA's performance criteria for SIPs in the Midwest. The CAMx model set-up for Base M is summarized below:

- CAMx v4.50
- CB05 gas phase chemistry
- SOA chemistry updates
- AERMOD dry deposition scheme
- ISORROPIA inorganic chemistry
- SOAP organic chemistry
- RADM aqueous phase chemistry
- PPM horizontal transport

A subset of the national RPO grid domain was used to derive the grids used for this modeling. The large eastern U.S. grid at 36 km (see box on right side of Figure 1) was the base grid. A smaller grid at 12 km (see shaded portion of the box on the right side of Figure 1) was used as the fine grid on which concentration calculations were reported.

The vertical resolution in the air quality model consists of 16 layers extending up to 15 km, with higher resolution in the boundary layer. The fine grid meteorology was flexi-nested down from the 36 km meteorology. This is appropriate in this domain due to a lack of significant terrain influences on the vertical wind profiles in the Midwest.

The effect of all anthropogenic emissions in Rock Island County can be reasonably simulated by zero-ing them out, then comparing the simulated concentrations to those

produced by the model with the same emissions inventory with the Rock Island County anthropogenic emissions left in. "Zero out" modeling has been used as a culpability tool by USEPA in numerous regional air quality assessments over the last 15 years. The zero out exercise was done in two steps: the zero out of NO, NO₂, and SO₂ only, and the zero

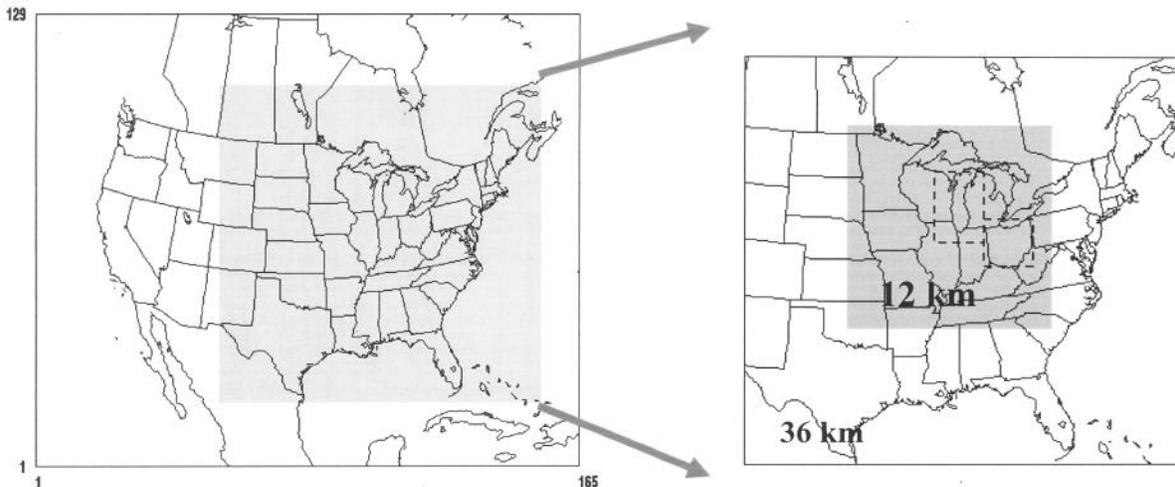


Figure 1. Modeling grids – RPO domain (left) and LADCO modeling domain (right)

out of the previously mentioned species plus all particulate forms of emissions, including elemental carbon, organics, and soil. The only emissions not zeroed out were those in the biogenics files. The maximum impacts of anthropogenic emissions from Rock Island County on the Davenport monitor are as follows:

- the maximum sulfate contribution is 0.8 ug/m³;
- the maximum nitrate contribution is less than 0.5 ug/m³;
- the maximum contribution from all anthropogenic emissions in Rock Island County is 2 ug/m³, with soil contributing about half of that impact.

As mentioned previously, U.S. EPA has proposed a range of SILs for Class II areas, from 1.2 to 5.0 ug/m³. Under the PSD program the SIL is used to define the significance of impact for a single source. The maximum contribution from all anthropogenic sources in Rock Island County, including point, area, on-road, and off-road sources, is 2 ug/m³, which is greater than only the lowest value in the proposed range of SILs. Clearly emission sources in Rock Island County are not contributing significantly to measured PM_{2.5} exceedances in Davenport.

CAMx Modeling – Source Apportionment

While zero-out modeling is one method of investigating contributions from specific source regions, the CAMx photochemical model offers Particulate Matter Source Apportionment Technology (PSAT) as a more sophisticated means of investigating how

regions and sources contribute to particulate matter formation at a given location. USEPA Region VII (EPA R7) completed a PSAT simulation to compliment the zero-out modeling runs that were done by the IEPA and the Iowa DNR.

EPA R7 implemented PSAT over the CENRAP national 36 km domain and the 12 km domain developed by Iowa DNR. All necessary preprocessing and the model execution were completed by EPA R7. The model configuration, including emissions and meteorology, was based upon the 2002 Base E CAMx modeling system developed by CENRAP and their contractors for purposes of regional haze. The 12km meteorology was flexi-nested. The source apportionment techniques generated particulate nitrate, particulate sulfate, and primary fine particulates, among others. Three primary single county source regions were used to assess PM_{2.5} contributions. The three primary source regions separately tracked contributions from Rock Island County, IL, Scott County, IA, and Muscatine County, IA. The remaining 97 counties in Iowa were assigned a separate source region. All other areas in the 12km domain, and areas in the 36 km domain, were grouped to account for the particulate matter concentrations associated with out-of-state long-range transport. These source regions provide information necessary to address the contributions associated with county sources, long range transport, and the role of precursor pollutants associated with the NAAQS violations in Scott County.

The results in Table 1 show that, for sulfates (PSO4), nitrates (PNO3), and primary PM2.5 (PFN), Rock Island County contributes less than 1% of each during the highest PM2.5 concentration days (highest 2% of the days for the 2002 simulation year). This is similar to the result found through zero-out modeling, and since different meteorological and other model inputs which were developed by a different RPO (CENRAP), the source apportionment results add further confidence to the conclusion that Rock Island County emissions are not significantly contributing to nonattainment at the Blackhawk Foundry monitor.

	BC	CONUS	Outside IA	Iowa	Scott Co.	Rock Island Co.
PSO4	1.8%	82.8%	6.2%	5.7%	1.6%	0.7%
PNO3	1.8%	75.6%	9.6%	10.7%	1.4%	0.5%
PFN	-----	-----	-----	-----	-----	0.6%

Table 1 – Contributions of specific regions to 98th percentile concentrations at the Blackhawk monitor

Emissions from Rock Island and Scott Counties

In the reporting of emissions, USEPA evaluated county level emissions data for the following PM2.5 components and precursor pollutants: total PM2.5 emissions, PM2.5 carbon emissions, PM2.5 crustal emissions, SO2, NOx, NH3, and VOC's. The data reported under "PM2.5 total emissions" represents direct emissions of PM2.5 and includes PM2.5 carbon emissions, PM2.5 crustal emissions, primary sulfate, and primary

nitrate. PM2.5 carbon emissions are the sum of organic carbon and elemental carbon. The emissions were derived from the 2005 National Emissions Inventory (NEI).

Table 2 compares USEPA's emissions data for Rock Island County with IEPA's emissions data. USEPA's emissions data for Scott County, IA are also shown in the table. In general, IEPA and USEPA data compare favorably, although IEPA's inventory shows somewhat lower VOC emissions in Rock Island County. What is noticeable, however, is that emissions from Scott County are substantially higher for all pollutants. Scott County's PM2.5, NOx, and NH3 emissions are approximately double those for Rock Island County, and SO2 emissions are almost four times higher.

County	PM2.5	SO2	NOx	NH3	VOC
Rock Island, IL (USEPA)	932	2169	6140	664	7359
Rock Island, IL (IEPA)	939	1980	6470	746	6215
Scott, IA	2034	9173	11317	1986	9323

Table 2. Comparison of Scott County and Rock Island County emissions (tpy)

Wind Direction Frequency on High PM2.5 Days

Figure 2 is a wind rose developed by Iowa DNR, which depicts the frequency of wind directions that occurred on the days in 2005-2007 when exceedances of the 24-hour PM2.5 standard were observed. Figure 2 clearly shows that exceedances of the standard occur overwhelmingly with south to southwest wind directions. These directions correlate with the direction toward the Blackhawk Foundry. The urbanized portions of Rock Island County, including the locations of industrial sources, are located to the east of the Davenport monitor. Easterly winds are only represented in Figure 2 on a small percentage of the hours when exceedances were observed (approximately 11% for easterly through southeasterly directions), indicating that contributions from sources in Rock Island County are very infrequent on high PM2.5 days in Davenport.

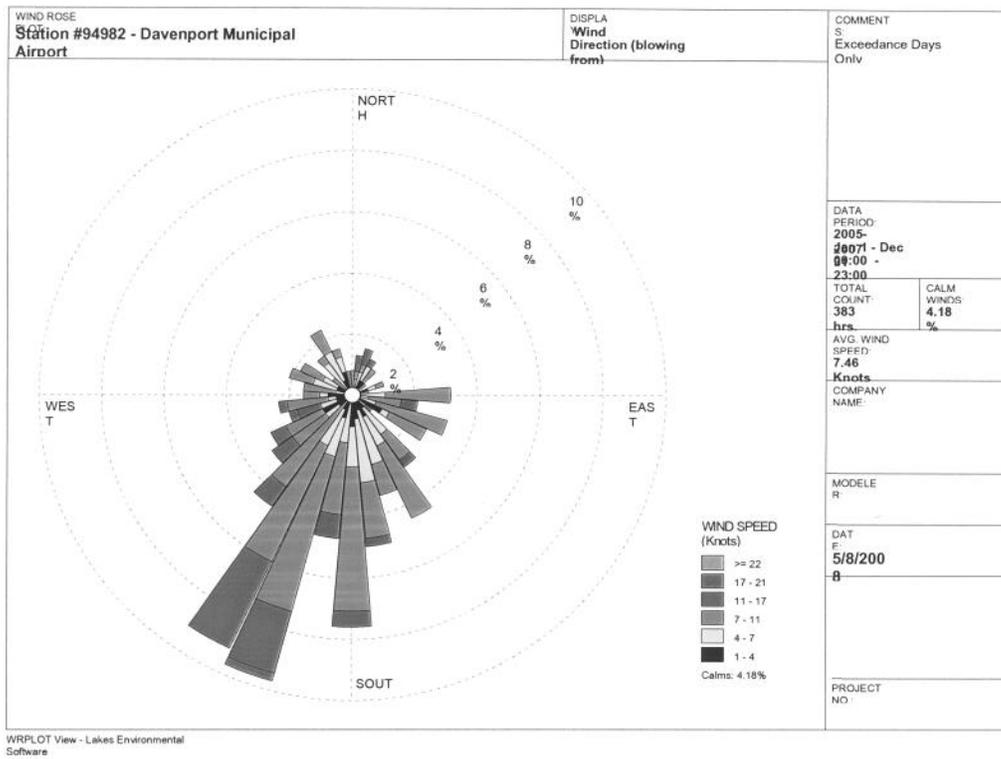


Figure 2. Pollution Rose for Davenport - Blackhawk Foundry Monitor

Summary

I have completed additional analyses to determine the contribution of PM2.5 and precursor emission sources in Rock Island County, Illinois to monitored violations in Davenport, Iowa. My analysis utilized both the standard Gaussian model (AERMOD) to address direct PM2.5 emissions, and a gridded photochemical model (CAMX) to address contributions from PM2.5 precursors emissions. I have also compared emissions data for Rock Island and Scott counties, and provided further analysis of a wind rose developed by Iowa DNR. It is concluded from this study that Rock Island County does not significantly contribute to violations of the 24-hour PM2.5 NAAQS in Davenport, Iowa.

G:/rob/ PM2.5 Rock Island Scott Leopold memo (Oct 08)

Attachment 2 – Memo from Dr. Donna Kenski, LADCO

**Lake Michigan Air
Directors
Consortium**

Memo

To: Rob Kaleel and Scott Leopold, IEPA
From: Donna Kenski
CC: Mike Koerber
Date: 10/14/2008
Re: Speciated PM2.5 in Davenport, IA

At IEPA's request, LADCO conducted a brief comparative analysis of speciated PM2.5 measurements in Davenport, IA, and the surrounding states to determine whether the data indicated possible sources of local influence. Davenport has only one speciation monitor, AQS ID 191630015, at Jefferson School, 10th & Vine Sts. Data from 2002-2007 were examined annually and seasonally. A comparison set of monitors was derived from 9 sites that roughly encircle Davenport, from Rochester, MN, on the north to St. Louis on the south. One suburban Chicago site (Naperville) and Omaha and Kansas City monitors were included as well.

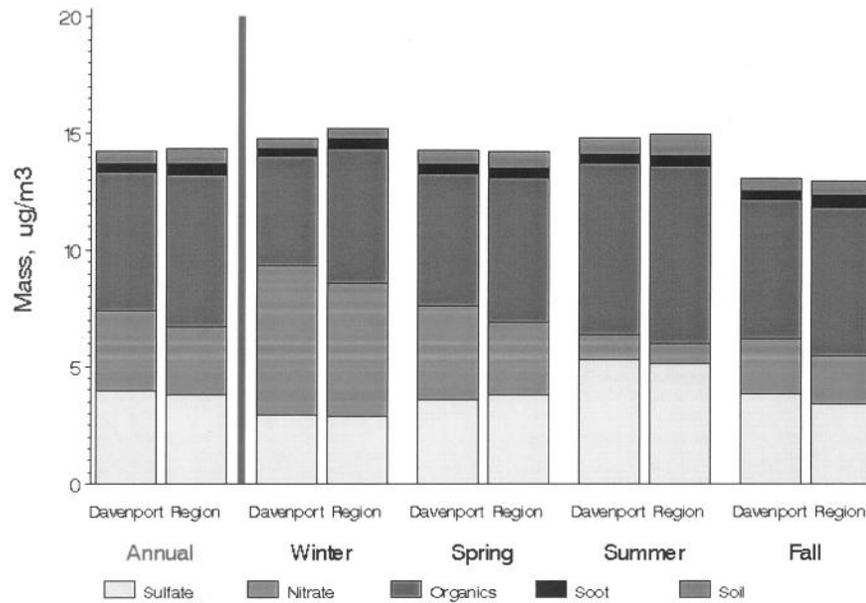
As shown in Figure 1, Davenport does not appear to differ in any significant way from the regional average. It has a tiny bit more ammonium nitrate, which might be expected given the ammonia-rich surroundings. Interestingly, it has slightly less elemental carbon (EC) and crustal material than the regional average. We would expect to see higher concentrations of EC and crustal elements (compared to the regional average) if there were a significant local industrial influence at this site.

Figure 2 shows a similar comparison, but just for the Iowa speciation sites and just for 2007. Davenport is the highest concentration site of the three, but there is a west to east increase in mass (Des Moines < Cedar Rapids < Davenport), driven by small increases in sulfate and OC as one moves eastward. This also supports the idea of regional influence being the dominant factor rather than local sources, as there is a regional gradient in sources of SO2 and OC as one moves eastward.

These results are most meaningful for this particular Davenport site, but given its similarity to the regional average, they are probably applicable for most of Davenport and its surroundings as well. Obviously there may be sources that can have locally

significant effects on a microscale, middle scale, or neighborhood scale that would not be seen at this monitor. Also, note that because the speciation data are collected differently from the FRM mass, the sum of the reconstructed mass (height of the bars) does not necessarily equal the FRM mass.

Davenport vs Regional PM2.5 Composition



Davenport = monitor 101930015. Region is average of other IA sites; Rochester MN, Decatur and Naperville IL, Pleasant Green, St. Louis, and Kansas City MO, and Omaha NE.

Figure 1. Annual and Seasonal Comparison of Major PM2.5 Components

Iowa PM2.5 Speciation — 2007 Annual Avg.

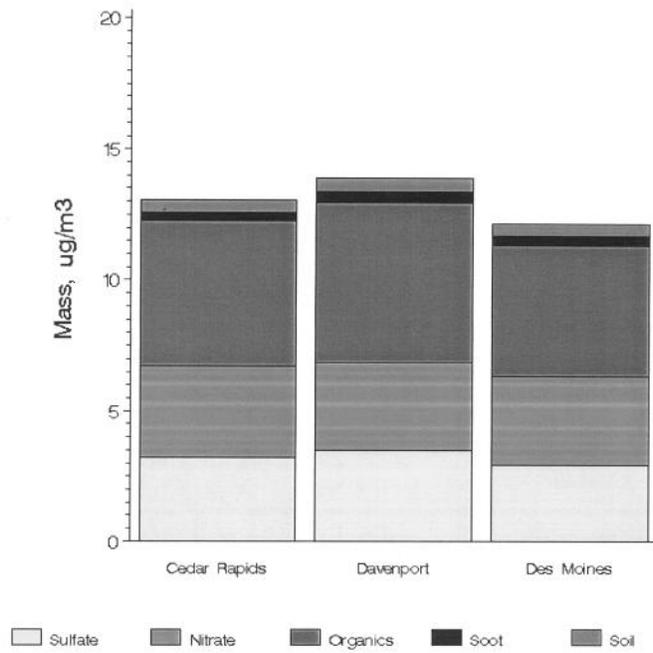
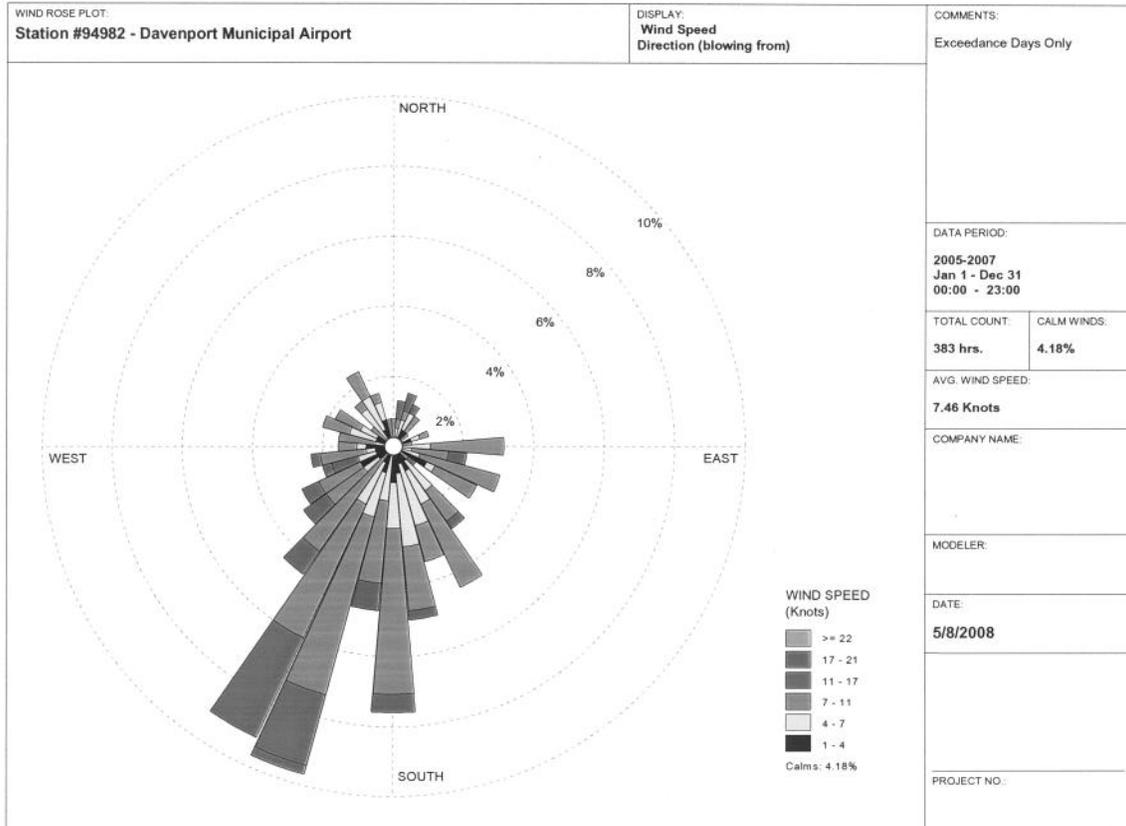


Figure 2. Speciated PM2.5 Composition within Iowa

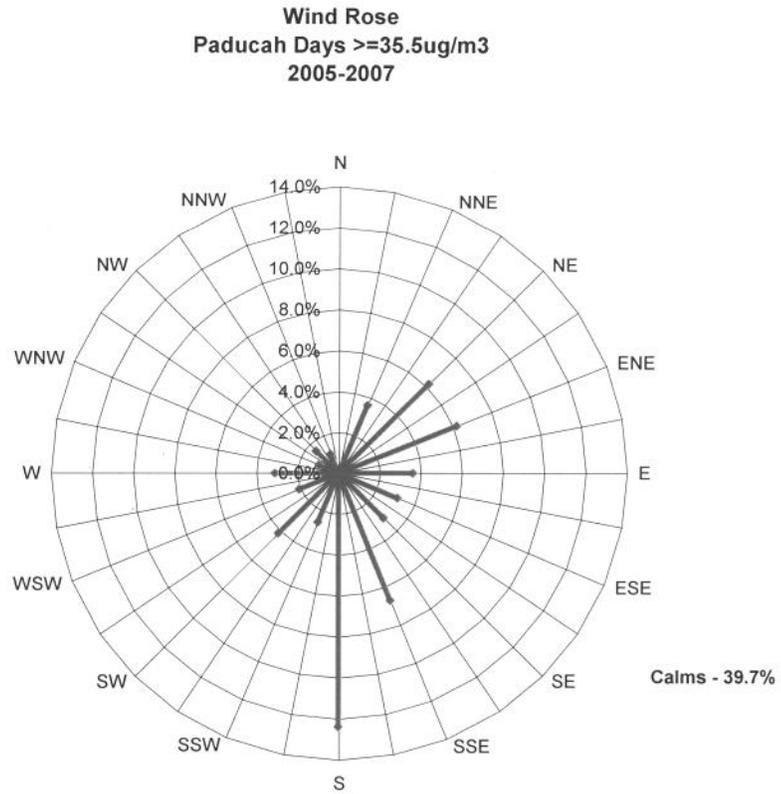
Attachment 3

Wind Frequency Distribution for Davenport, IA on High PM2.5 Days, 2005-2007



WRPLOT View - Lakes Environmental Software

Attachment 4
Wind Frequency Distribution for Paducah, KY on High PM2.5 Days, 2005-2007



Attachment 5 USEPA's Wind Frequency Distribution for Paducah, KY

Not in an existing NAA
CSA: Paducah-Mayfield, KY-IL
CBSA: Paducah, KY-IL

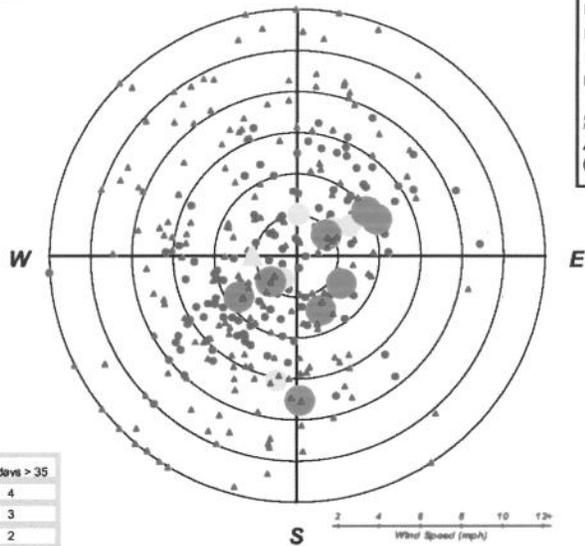
Site 211451004

Concentration:

- > 40 $\mu\text{g}/\text{m}^3$
- 35 - 40 $\mu\text{g}/\text{m}^3$
- 30 - 35 $\mu\text{g}/\text{m}^3$
- $\leq 30 \mu\text{g}/\text{m}^3$

Season:

- △ cool (Oct-Apr)
- warm (May-Sep)



Year	98th %ile	# days > 35
2004	37.1	4
2005	36.7	3
2006	34.2	2
Design Value	36-NA	

1 exceedance(s) not plotted
(due to missing or variable wind data)

Metereological data from 7.2 miles away
PADUCAH_BARKLEY_REGIONAL_AP (ID=3818)
located near Paducah-Mayfield, KY-IL, CBSA

Attachment 6
Ameren's Joppa Steam Plant Commitment

Ameren Energy Resources

R. Alan Kelley
President & Chief Executive Officer

One Ameren Plaza
1901 Chouteau Avenue
PO Box 66149, MC 10
St. Louis, MO 63166-6149
314.554.2849
314.554.3066 fax
rakelley@ameren.com

December 27, 2007

Mr. Jim Ross, Manager
Division of Air Pollution Control
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P. O. Box 19726
Springfield, IL 62794-9276

RECEIVED

JAN 02 2008

IEPA - DAPC - SPFLD

RE: Illinois Mercury Rule Multi-Pollutant Standard - Notice of Intent

Dear Mr. Ross:

In accordance with 35 Illinois Administrative Code Part 225 Subpart B Section 225.233 (b), Ameren Energy Resources, as authorized agent for Ameren Energy Generating Company, AmerenEnergy Resources Generating Company and Electric Energy Inc., submits this notice of intent that the owners of the following eligible electric generating units elect to demonstrate compliance with the multi-pollutant emission limitation as an alternative to the emission standards of Section 225.230. This notice of intent is submitted for the following emission units that are eligible electric generating units (EGUs):

Ameren Energy Generating Company

Facility	Facility I. D.	Emission Unit
Coffeen	135803AAA	01
Coffeen	135803AAA	02
Hutsonville	033801AAA	05
Hutsonville	033801AAA	06
Meredosia	137805AAA	01
Meredosia	137805AAA	02
Meredosia	137805AAA	03
Meredosia	137805AAA	04
Meredosia	137805AAA	05
Newton	079808AAA	1
Newton	079808AAA	2

AmerenEnergy Resources Generating Company

Facility	Facility I. D.	Emission Unit
Duck Creek	057801AAA	1
E. D. Edwards	143805AAG	1
E. D. Edwards	143805AAG	2
E. D. Edwards	143805AAG	3



Electric Energy, Inc.

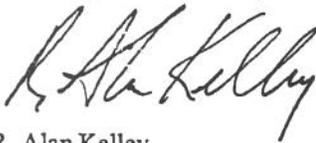
Facility	Facility I. D.	Emission Unit
Joppa	127855AAC	1
Joppa	127855AAC	2
Joppa	127855AAC	3
Joppa	127855AAC	4
Joppa	127855AAC	5
Joppa	127855AAC	6

The electric generating units (EGUs) identified above are eligible to participate as an Multi-Pollutant Standard Group for the purpose of demonstrating compliance with the requirements of 35 Illinois Administrative Code Part 225 Subpart B Section 225.233. This notice of intent includes the following components as attachments to this submittal: the base emission rates for the EGUs and supporting data; a summary of current pollution control equipment installed; and a summary of additional pollution control equipment that will likely be installed to comply with the MPS.

The EGUs identified in this notice of intent have commenced commercial operation on or before December 31, 2004 and constitute all affected EGUs that were owned by the listed affiliates as of July 1, 2006.

I am authorized to make this submission on behalf of the owners and operators of the affected units for which this submission is made. Please contact Steven Whitworth at (314) 554 - 4908 if you have any questions concerning this submittal or if additional information is required.

Sincerely,



R. Alan Kelley
President, Ameren Energy Generating Company
President, AmerenEnergy Resources Generating Company
Director and Chairman, Electric Energy, Inc.

SCW/AEGAERGEEI_MPSnotice

Attachments

**Ameren Energy Resources Company
Multi-Pollutant Standard Notice of Intent
Attachment A
Summary of Existing Pollution Control Equipment**

Ameren Energy Generating Company

Facility	Facility I. D.	Emission Unit	Particulate Control	NOx Control	SO2 Control
Coffeen	135803AAA	01	ESP	OFA/SCR	
Coffeen	135803AAA	02	ESP	OFA/SCR	
Hutsonville	033801AAA	05	ESP		
Hutsonville	033801AAA	06	ESP		
Meredosia	137805AAA	01	ESP		
Meredosia	137805AAA	02	ESP		
Meredosia	137805AAA	03	ESP		
Meredosia	137805AAA	04	ESP		
Meredosia	137805AAA	05	ESP	LNB	
Newton	079808AAA	1	ESP	OFA/LNB	
Newton	079808AAA	2	ESP	OFA/LNB	

AmerenEnergy Resources Generating Company

Facility	Facility I. D.	Emission Unit	Particulate Control	NOx Control	SO2 Control
Dark Creek	057801AAA	1	ESP	LNB/SCR	FGD
E. D. Edwards	143805AAG	1	ESP	LNB	
E. D. Edwards	143805AAG	2	ESP	LNB	
E. D. Edwards	143805AAG	3	ESP	OFA/LNB/SCR	

Electric Energy, Inc.

Facility	Facility I. D.	Emission Unit	Particulate Control	NOx Control	SO2 Control
Joppa	127855AAC	1	ESP	LNB	
Joppa	127855AAC	2	ESP	LNB	
Joppa	127855AAC	3	ESP	LNB	
Joppa	127855AAC	4	ESP	LNB	
Joppa	127855AAC	5	ESP	OFA/LNB	
Joppa	127855AAC	6	ESP	OFA/LNB	

**Ameren Energy Resources Company
Multi-Pollutant Standard Notice of Intent
Attachment B
Base Emission Rate Determination**

Ameren MPS Base Annual Emission Rate Determination

2003 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)	SO2 Rate (#/mmBtu)	SO2 (tons)
AEGC	158,452,698	0.259	20,527	1.14	90,117
AERGC	63,611,097	0.368	11,690	2.06	65,440
EEI	89,504,514	0.129	5,771	0.54	24,026
AER Illinois	311,568,309	0.244	37,988	1.15	179,583

2004 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)	SO2 Rate (#/mmBtu)	SO2 (tons)
AEGC	171,427,867	0.249	20,710	1.06	90,532
AERGC	70,737,248	0.309	10,897	1.47	52,058
EEI	92,482,478	0.127	5,860	0.61	28,048
AER Illinois	334,647,593	0.224	37,467	1.02	170,638

2005 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)	SO2 Rate (#/mmBtu)	SO2 (tons)
AEGC	160,864,003	0.253	18,494	1.04	83,905
AERGC	65,569,490	0.267	8,619	1.22	39,999
EEI	86,505,712	0.128	5,524	0.60	25,963
AER Illinois	312,939,205	0.235	32,637	1.01	149,867

Annual Average Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)	SO2 Rate (#/mmBtu)	SO2 (tons)
AEGC	163,581,523	0.243	19,910	1.08	88,185
AERGC	66,639,278	0.312	10,402	1.58	52,499
EEI	89,497,568	0.128	5,718	0.58	26,012
AER Illinois	319,718,369	0.225	36,031	1.04	166,696

MPS Rates	% of base rate	% of base rate
NOx at 0.11 or 52% of base rate in 2012	0.117	
SO2 at 0.33 or 44% of base rate in 2013		0.46
SO2 at 0.25 or 35% of base rate in 2015		0.36

Ameren MPS Base Seasonal NOx Emission Rate Determination

2003 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)
AEGC	71,819,229	0.159	5,706
AERGC	26,917,427	0.255	3,427
EEI	37,416,091	0.126	2,359
AER Illinois	136,152,747	0.169	11,492

2004 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)
AEGC	72,205,935	0.153	5,508
AERGC	30,512,335	0.180	2,750
EEI	30,951,063	0.126	1,956
AER Illinois	133,669,333	0.153	10,214

2005 Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)
AEGC	77,068,042	0.146	5,614
AERGC	28,277,603	0.170	2,397
EEI	37,004,541	0.126	2,328
AER Illinois	142,350,186	0.147	10,339

Seasonal Average Company	Heat Input (mmBtu)	NOx Rate (#/mmBtu)	NOx (tons)
AEGC	73,697,735	0.152	5,609
AERGC	28,569,121	0.200	2,858
EEI	35,123,898	0.126	2,214
AER Illinois	137,390,755	0.155	10,682

MPS Rates
NOx at 0.11 or 80% of base rate in 2012

% of base rate
0.124

Ameren Energy Resources Company
Multi-Pollutant Standard Notice of Intent
Attachment C
Summary of Likely Future Pollution Control Equipment

Ameren Energy Generating Company

Facility	Facility I. D.	Emission Unit	Mercury Control	NOx Control	SO2 Control
Coffeen	135803AAA	01	SCR/FGD	OFA/SCR	FGD
Coffeen	135803AAA	02	SCR/FGD	OFA/SCR	FGD
Hutsonville	033801AAA	05	ACI (2013)	OFA/LNB	
Hutsonville	033801AAA	06	ACI (2013)	OFA/LNB	
Meredosia	137805AAA	01	ACI (2013)		
Meredosia	137805AAA	02	ACI (2013)		
Meredosia	137805AAA	03	ACI (2013)		
Meredosia	137805AAA	04	ACI (2013)		
Meredosia	137805AAA	05	ACI (2009)	OFA/LNB	
Newton	079808AAA	1	ACI (2009)	OFA/LNB/SCR	FGD
Newton	079808AAA	2	ACI (2009)	OFA/LNB/SCR	FGD

AmerenEnergy Resources Generating Company

Facility	Facility I. D.	Emission Unit	Mercury Control	NOx Control	SO2 Control
Duck Creek	057801AAA	1	SCR/FGD	LNB/SCR	FGD
E. D. Edwards	143805AAG	1	ACI (2009)	OFA/LNB	
E. D. Edwards	143805AAG	2	ACI (2009)	OFA/LNB	
E. D. Edwards	143805AAG	3	ACI (2009)	OFA/LNB/SCR	FGD

Electric Energy, Inc.

Facility	Facility I. D.	Emission Unit	Mercury Control	NOx Control	SO2 Control
Joppa	127855AAC	1	ACI (2009)	OFA/LNB	FGD
Joppa	127855AAC	2	ACI (2009)	OFA/LNB	FGD
Joppa	127855AAC	3	ACI (2009)	OFA/LNB	
Joppa	127855AAC	4	ACI (2009)	OFA/LNB	
Joppa	127855AAC	5	ACI (2009)	OFA/LNB	FGD
Joppa	127855AAC	6	ACI (2009)	OFA/LNB	FGD