

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
AIR QUALITY STANDARDS) R09-19
CLEAN-UP: AMENDMENTS TO) (Rulemaking – Air)
35 ILL. ADM. CODE PART 243)

NOTICE OF FILING

TO: Mr. John C. Therriault Mr. Timothy J. Fox
Assistant Clerk of the Board Hearing Officer
Illinois Pollution Control Board Illinois Pollution Control Board
100 W. Randolph Street 100 W. Randolph Street
Suite 11-500 Suite 11-500
Chicago, Illinois 60601 Chicago, Illinois 60601
(VIA ELECTRONIC MAIL) **(VIA U.S. MAIL)**

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the **PRE-FILED TESTIMONY OF DAVID J. KOLAZ ON BEHALF OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP**, copies of which are herewith served upon you.

Respectfully submitted,

By: /s/Alec M. Davis
Alec M. Davis

Dated: April 14, 2009

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CERTIFICATE OF SERVICE

I, Alec M. Davis, the undersigned, hereby certify that I have served the attached

**PRE-FILED TESTIMONY OF DAVID J. KOLAZ ON BEHALF OF THE
ILLINOIS ENVIRONMENTAL REGULATORY GROUP**, upon:

Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601

via electronic mail on April 14, 2009, and upon:

Mr. Timothy J. Fox
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by depositing said documents in the United States Mail, postage prepaid, in Springfield,
Illinois on April 14, 2009.

/s/Alec M. Davis
Alec M. Davis

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**PRE-FILED TESTIMONY OF DAVID J. KOLAZ ON
BEHALF OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP**

NOW COMES the ILLINOIS ENVIRONMENTAL REGULATORY GROUP (“IERG”), by and through its attorney, Alec M. Davis and submits the following PRE-FILED TESTIMONY OF DAVID J. KOLAZ for presentation at the April 28, 2009, hearing scheduled in the above-referenced matter.

Pre-Filed Testimony of David J. Kolaz

I. INTRODUCTION

My name is David Kolaz, and I am here today to testify on behalf of the Illinois Environmental Regulatory Group in the matter of the Illinois Environmental Protection Agency's (“Illinois EPA” or “Agency”) Air Quality Standards Clean-Up (R09-19).

The purpose of my testimony is to describe changes to the Part 243 Air Quality Standards that, IERG believes, should be part of the clean up included in this rulemaking and that are not being proposed by the Agency. These changes comport to the Agency’s stated purpose of having the Part 243 Air Quality Standards conform to USEPA’s National Ambient Air Quality Standards. I will show that, without these changes, the wording of the current Part 243 Air Quality Standards is insufficient to avoid misinterpretation.

I am currently an environmental consultant and a licensed Professional Engineer in the State of Illinois. My professional experience encompasses over 37 years of environmental work in various facets of air pollution control. Before leaving State government in December 2004, I served as Chief of the Bureau of Air for the Illinois EPA. In this capacity, I was responsible for the planning, development and implementation of the statewide air pollution control program designed to meet State and

federal clean air laws. During my tenure at the Illinois EPA, I was involved with all aspects of the air pollution control program including air monitoring, the permit program, emission inventory system, air quality planning, and the compliance and enforcement program. I am a graduate of the University of Illinois-Champaign with a Bachelor of Science Degree in Aeronautical and Astronautical Engineering. I also have a Master of Science Degree in Engineering from Southern Illinois University-Carbondale.

II. RATIONALE FOR RULEMAKING

In the Agency's Statement of Reasons, Technical Support Document, the March 10th testimony of Mr. Robert Kaleel, and in the response to questions posed at the March 10th hearing, the Agency has made it clear that its intent is to have the Part 243 standards be the same as the federal standards. In this proceeding, the Agency has proposed additions and changes that pertain to the State's standards for ozone (O₃), fine particulate (PM_{2.5}), respirable particulate (PM₁₀) and lead (Pb). All of these changes are being made as a result of changes to the National Ambient Air Quality Standards occurring as long ago as 1997, in the case of fine particulate and respirable particulate, and as recently as October 15, 2008 for lead. However, USEPA has also made changes to the air quality standards for sulfur oxides, nitrogen dioxide and carbon monoxide prior to 1997, which should be addressed in this rulemaking.

III. SULFUR OXIDES (SECTION 243.122)

The sulfur oxides standard listed in Section 243.122 is substantially different from the federal standard it seeks to emulate, as shown in Attachment 1 to this testimony. This difference is clear from a comparison of Illinois' sulfur oxides standard to the federal standard. The USEPA has made several clarifying revisions to the sulfur oxides standard since its original promulgation on April 30, 1971. The last modification of the federal standard occurred on May 22, 1996. At that time, USEPA decided that "...revisions of the NAAQS for sulfur oxides are not appropriate at this time, aside from several minor technical changes." 61 Fed. Reg. 25566 (May 22, 1996). It is these technical changes that IERG contends must now be made to the Illinois sulfur oxide standard to avoid confusion and possible misinterpretation of the State standard.

The USEPA made three technical changes to the sulfur oxides standard, which should now be adopted by Illinois to meet the Illinois EPA's stated goal of having Illinois' air quality standards mirror those of USEPA. The first technical change was to add clarifying language to the standard to show that "...the block averaging convention will be retained..." *Id.* at 25576. The USEPA explains this concept by stating that "Under the block convention, periods such as 24 hours and 3 hours are measured sequentially and do not overlap; when one averaging period ends, the next begins." *Id.* The USEPA goes on to explain its rationale as follows:

Although the wording of the original 24-hour, 3-hour, and annual SO₂ standards may have been ambiguous on the matter, the earliest actions of the EPA signify that the block averaging convention was intended for these standards (OAQPS, 1986), and block averages have generally been used in implementing the standards. Given a fixed standard level, the use of the alternative, running averages, would represent a tightening of the standards (Faoro, 1983; Possiel, 1985). For reasons explained in this notice and in the April 21, 1993, notice on the secondary NAAQS (58 FR 21351), the Administrator has already determined that protection of the public health and welfare does not require tightening the existing standards. Therefore, EPA will retain the block averaging convention for the 24-hour, 3-hour, and annual standards.

Id.

The second technical clarification USEPA made to its sulfur oxides standard was to state the standard in terms of parts per million instead of micrograms per cubic meter. This change makes it clear that the standard should be evaluated in units of parts per million. This in fact is the approach used by the Illinois EPA as illustrated by the data summarized in its *2007 Illinois Annual Air Quality Report*. In Table 1: Summary of National and Illinois Ambient Air Quality Standards, the Illinois EPA only shows the State and federal air quality standards for gaseous pollutants, such as sulfur dioxide, in units of parts per million. *Id.* There is no reason to continue to show the State standards in terms of micrograms per cubic meter. This can cause confusion and errors if the data are converted to micrograms per cubic meter, and then compared to the standard. The number of significant digits of the sulfur oxides standard expressed as 365 micrograms per cubic meter provides a different result than the standard expressed as 0.14 parts per million. An exceedance of the sulfur oxides standard, written as 365 micrograms per

cubic meter, would occur at a value of 366 micrograms per cubic meter. However, 366 micrograms per cubic meter is equal to 0.138 parts per million. Because of the consideration of significant digits determined from the manner in which the standard is expressed, if the standard is expressed as 0.14 parts per million, the first exceedance would not occur until a value of 0.15 parts per million is reached. Consequently, if the value of 366 micrograms per cubic meter is converted to 0.138 parts per million and then rounded appropriately to 0.14 parts per million, the conclusion would be reached that the standard was not exceeded. For this reason, the USEPA chose to avoid possible confusion and express the standard as parts per million. IERG urges the Board to do likewise.

The third technical clarification made by USEPA was in regard to rounding conventions and data completeness and handling conventions. These same changes should be made to add clarity to the air quality standards. The Illinois EPA is incorporating these same types of details into the changes to the standards it is proposing. Therefore, it seems reasonable to take this opportunity to “clean-up” the sulfur oxides standard as well.

In summary, IERG suggests that the Board incorporate the language from the federal standard for sulfur oxides into Section 243.122.

IV. NITROGEN DIOXIDE (SECTION 243.124)

The current Illinois air quality standard for nitrogen dioxide is stated as follows:

The ambient air quality standard for nitrogen dioxide is an annual arithmetic mean concentration of 100 micrograms per cubic meter (0.05 ppm).

35 Ill. Adm. Code 243.124(a).

The USEPA clarified the standard on June 19, 1985. 50 Fed. Reg. 25544 (June 19, 1985). In that clarification, the USEPA chose to state the standard in terms of parts per million, and show the micrograms per cubic meter equivalent parenthetically. *Id.* Attachment 2 shows a comparison of the State nitrogen dioxide air quality standard to the federal standard. The federal standard is

expressed as 0.053 parts per million (100 micrograms per cubic meter), and also includes the same type of rounding conventions and data completeness and handling conventions described for the sulfur oxides standard. These also are the same types of conventions that the Illinois EPA is proposing for the standards that it is proposing to add or change.

IERG recommends that the State air quality standard for nitrogen dioxide be changed to better conform to the federal standard shown in Attachment 2, with the exception that the standard not be expressed in micrograms per cubic meter. This deviation should not cause confusion, and instead will better represent the current thinking of the USEPA as expressed in its air quality standard setting actions conducted since the time the nitrogen dioxide standard was last revisited. Furthermore, this change in both the numerical value of the standard (0.053 parts per million), and the units of the standard, reflects the practice now used by the Illinois EPA. Its *2007 Illinois Annual Air Quality Report*, Table 1: Summary of National and Illinois Ambient Air Quality Standards, shows the nitrogen dioxide State and federal standards as being 0.053 parts per million. Nowhere is the standard expressed as 100 micrograms per cubic meter.

Furthermore, the USEPA is under a judicial consent decree that requires the USEPA to propose, by June 26, 2009, whether the nitrogen dioxide standard should be revised. A final rule on this topic must be issued by January 22, 2010. It is possible that there may be further changes regarding the federal nitrogen dioxide standard. But in the meantime, the State standard would better reflect the current status if the changes IERG suggests are made.

V. CARBON MONOXIDE (SECTION 243.123)

Attachment 3 shows a comparison of the Illinois air quality standard for carbon monoxide to the federal standard. The USEPA has included the same type of rounding conventions and data completeness and handling conventions described previously for the sulfur oxides and nitrogen dioxide standards. Also, the USEPA shows the federal carbon monoxide air quality standard in parts per million, and parenthetically in

milligrams per cubic meter. The Illinois standard is shown in terms of milligrams per cubic meter and parenthetically as parts per million.

IERG recommends that the State air quality standard for carbon monoxide be changed to better conform to the federal standard shown in Attachment 3, with the exception that the standard not be expressed in milligrams per cubic meter. This deviation should not cause confusion, and instead will better represent the current thinking of the USEPA as expressed in its air quality standard setting actions conducted since the time the carbon monoxide standard was last revisited. Furthermore, this change better reflects the practice now used by the Illinois EPA. Its *2007 Illinois Annual Air Quality Report*, Table 1: Summary of National and Illinois Ambient Air Quality Standards, shows the carbon monoxide State and federal standards in terms of parts per million. Nowhere in the Report is the standard expressed in terms of milligrams per cubic meter.

VI. SUMMARY AND CONCLUSION

IERG supports the actions of the Illinois EPA and the Board to “clean-up” the State’s air quality standards by making the appropriate revisions necessary to update the State standards to comport to those of the USEPA. In doing so, IERG encourages the additional modifications described in my testimony to help avoid any possibility of misinterpretation.

Thank you for your consideration of this testimony.

Respectfully submitted,

By: /s/Alec M. Davis
Alec M. Davis

Dated: April 14, 2009

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ATTACHMENT 1
COMPARISON OF THE STATE SULFUR OXIDE AIR QUALITY
STANDARDS TO THE RELEVANT PORTIONS OF THE NAAQS

POLLUTANT	AGENCY PROPOSAL	USEPA NAAQS
<p>Dioxide (Section 243.122)</p>	<p>a) Primary Standards. The primary ambient air quality standards for sulfur oxides measured as sulfur dioxide are: 1) An annual arithmetic mean concentration of 80 micrograms per cubic meter (0.03 ppm); and, 2) A maximum 24-hour concentration not to be exceeded more than once per year of 365 micrograms per cubic meter (0.14 ppm). b) Secondary Standard. The secondary ambient air quality standard for sulfur oxides measured as sulfur dioxide is a maximum 3-hour concentration not to be exceeded more than once per year of 1,300 micorgrams (sic) per cubic meter (0.5 ppm).</p>	<p>(a) The level of the annual standard is 0.030 parts per million (ppm), not to be exceeded in a calendar year. The annual arithmetic mean shall be rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm shall be rounded up). (b) The level of the 24-hour standard is 0.14 parts per million (ppm), not to be exceeded more than once per calendar year. The 24-hour averages shall be determined from successive nonoverlapping 24-hour blocks starting at midnight each calendar day and shall be rounded to two decimal places (fractional parts equal to or greater than 0.005 ppm shall be rounded up). . . . (d) To demonstrate attainment, the annual arithmetic mean and the second-highest 24-hour averages must be based upon hourly data that are at least 75 percent complete in each calendar quarter. A 24-hour block average shall be considered valid if at least 75 percent of the hourly averages for the 24-hour period are available. In the event that only 18, 19, 20, 21, 22, or 23 hourly averages are available, the 24-hour block average shall be computed as the sum of the available hourly averages using 18, 19, etc. as the divisor. If fewer than 18 hourly averages are available, but the 24-hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the rounding rule of paragraph (b) of this section, then this shall be considered a valid 24-hour average. In this case, the 24-hour block average shall be computed as the sum of the available hourly averages divided by 24. (40 C.F.R. § 50.4, 5/22/1996)</p>

ATTACHMENT 2
COMPARISON OF THE STATE NITROGEN DIOXIDE AIR
QUALITY STANDARDS TO THE RELEVANT PORTIONS OF THE
NAAQS

POLLUTANT	AGENCY PROPOSAL	USEPA NAAQS
<p style="text-align: center;">Nitrogen Dioxide (Section 243.124)</p>	<p>a) Standard. The ambient air quality standard for nitrogen dioxide is an annual arithmetic mean concentration of 100 micrograms per cubic meter (0.05 ppm).</p>	<p>(a) The level of the national primary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration.</p> <p>(b) The level of national secondary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration.</p> <p>...</p> <p>(d) The standards are attained when the annual arithmetic mean concentration in a calendar year is less than or equal to 0.053 ppm, rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm must be rounded up). To demonstrate attainment, an annual mean must be based upon hourly data that are at least 75 percent complete or upon data derived from manual methods that are at least 75 percent complete for the scheduled sampling days in each calendar quarter.</p> <p>(40 C.F.R. § 50.11, 6/19/1985)</p>

ATTACHMENT 3
COMPARISON OF THE STATE CARBON MONOXIDE AIR
QUALITY STANDARDS TO THE RELEVANT PORTIONS OF THE
NAAQS

POLLUTANT	AGENCY PROPOSAL	USEPA NAAQS
<p>Carbon Monoxide (Section 243.123)</p>	<p>a) Standards. The ambient air quality standards for carbon monoxide are: 1) A maximum 8-hour concentration not to be exceeded more than once per year of 10 milligrams per cubic meter (9 ppm); and, 2) A maximum 1-hour concentration not to be exceeded more than once per year of 40 milligrams per cubic meter (35 ppm).</p>	<p>(a) The national primary ambient air quality standards for carbon monoxide are: (1) 9 parts per million (10 milligrams per cubic meter) for an 8-hour average concentration not to be exceeded more than once per year and (2) 35 parts per million (40 milligrams per cubic meter) for a 1-hour average concentration not to be exceeded more than once per year. . . . (c) An 8-hour average shall be considered valid if at least 75 percent of the hourly average for the 8-hour period are available. In the event that only six (or seven) hourly averages are available, the 8-hour average shall be computed on the basis of the hours available using six (or seven) as the divisor. (d) When summarizing data for comparison (sic) with the standards, averages shall be stated to one decimal place. Comparison of the data with the levels of the standards in parts per million shall be made in terms of integers with fractional parts of 0.5 or greater rounding up. (40 C.F.R. § 50.8, 9/13/1985)</p>